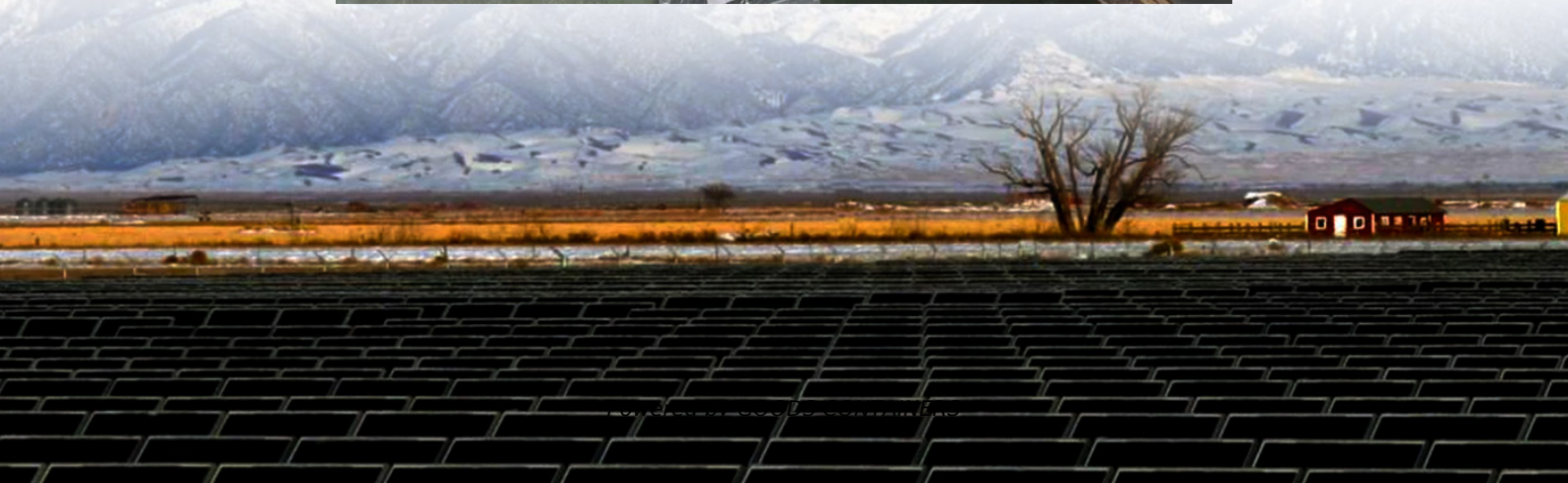


Price Reduction of High-Efficiency Solar Containerized Solar Cells in Southern Europe





Overview

How efficient is a solar cell?

The solar cell is a crucial component of PV technology, and its performance in converting the sun's energy heavily depends on the materials used for its fabrication. In a study conducted by Zumar, A. et al , several key properties were identified as essential for prospective photovoltaic materials to ensure efficient solar cell performance.

Why are III-V solar cells so expensive?

The other major cost in the production of III-V devices is the substrate on which they're grown. Typically, this is a perfect single crystal of GaAs or Ge, but both substrates are too expensive to enable widespread terrestrial use of III-V solar cells.

How can NREL reduce the cost of III-V solar cells?

NREL develops technologies to drastically lower the cost of III-V solar cells while maintaining their conversion efficiency, thus enabling their use in conventional flat-plate and low-concentration applications. At present, the cost of these devices is very high, which limits their use to high-concentration and space applications.

How efficient are polymerized solar cells?

ACS Energy Lett. 6, 728–738 (2021). Du, J. et al. Polymerized small molecular acceptor based all-polymer solar cells with an efficiency of 16.16% via tuning polymer blend morphology by molecular design. Nat. Commun. 12, 5264 (2021).



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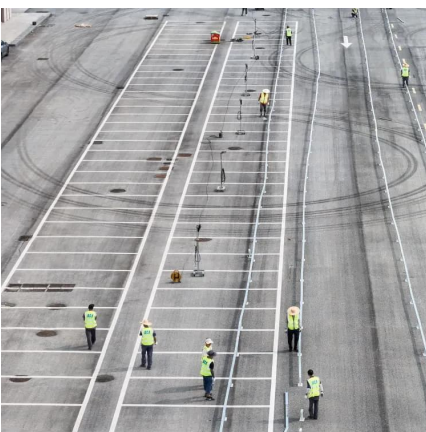
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