Liquid crystal solar panels

Can ionic liquid-dopants produce high efficiency perovskite solar cells?
A strategy to produce high efficiency, high stability perovskite solar cells using functionalized ionic liquid-dopants. Adv. Mater. 29, 1702157 (2017).

Why are liquid crystal structures important?
This finding was important because the liquid crystal structures resulted in better OSC stability and efficiencywhen compared to cells fabricated using random aggregation pathways. Further manipulation during the process resulted in liquid crystal assembly pathways that were either achiral or chiral.

Which liquid crystal enables large-area perovskite films?
We find that thermotropic liquid crystalssuch as 3,4,5-trifluoro-4?- (trans -4-propylcyclohexyl)biphenyl enable large-area perovskite films that are uniform,low in defects and stable against environmental stress factors.

What is the power conversion efficiency of liquid crystal based perovskite modules?
Liquid crystal-incorporating PSCs achieve a power conversion efficiency (PCE) of 25.6%,and liquid crystal-based perovskite modules with an aperture area of 31 cm 2 achieve a certified efficiency of 21.6%(stabilized 21.1%) along with documented operating and reverse bias stability.

LetzColor, a project from the University of Luxembourg, is on a mission to revolutionise how we perceive solar panels and energy. The project aims to seamlessly ...

Unlike traditional PV panels made from solid silicon crystals, these systems utilize a liquid-based composition--the photovoltaic fluid or solar liquid--containing light-sensitive ...

Solidification of a donor polymer D18 used in organic solar cell devices from its chiral liquid crystal phase. The movie was recorded under a cross-polarized optical microscope.

Key advancements include the sequential resolution of pixel structure design, precise color tuning of polymer-stabilized cholesteric liquid crystal (PSCLC), preparation of ...

Luminescent solar concentrators (LSCs) combined with photovoltaic cells are in high demand, and it is a very effective way to increase the efficiency of a commercially ...

A new application of liquid crystals has just opened up a whole new realm of solar energy technology, TechXplore reported. To ...

Researchers in China have developed a transparent, colorless solar coating that can be directly applied to glass.

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The bottom interface between perovskite and electron-transporting layer is critical for realizing efficient flexible perovskite solar cells. Here, the authors intercalate liquid crystal ...

Micropillars made of a light-responsive liquid crystal elastomer (LCE) re-orient themselves to follow light coming from different directions, ...

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