

Are flexible solar cells the future of photovoltaic technology?

For the previous few decades, the photovoltaic (PV) market was dominated by silicon-based solar cells. However, it will transition to PV technology based on flexible solar cells recently because of increasing demand for devices with high flexibility, lightweight, conformability, and bendability.

Do photovoltaic technologies need a renewed assessment?

Nature Reviews Materials 4,269-285 (2019) Cite this article The remarkable development in photovoltaic (PV) technologies over the past 5 years calls for a renewed assessment of their performance and potential for future progress.

Which material is used to encapsulate PV modules?

Ethylene vinyl acetate (EVA), a copolymer of ethylene and vinyl acetate, is the predominating material of choice for manufacturing the encapsulation film since the early eighties, and nearly 80% of PV modules are encapsulated with EVA film [4,13,29].

How are Pb-adsorbing resins coated?

The Pb-adsorbing resins were first coated onto a PTAA-covered ITO substrate using a room-temperature blading process compatible with the scalable processing of perovskite modules.

What are the advantages of hybrid photovoltaic devices based on conjugated polymers?

Hybrid photovoltaic devices based on blends of semiconducting polymers and colloidal semiconductor nanocrystals possess the unique advantages of high optical absorbance of conjugated polymers along with the high conductance, tunable optical band gap, and high dielectric constant of nanocrystals ($\epsilon \sim 20$).

What is organic photovoltaic technology?

Organic photovoltaic technology is rapidly emerging as a transformative technology with meliorating cell efficiency (currently $\sim 13.2\%$), encouraging initial lifetime ($> 5,000$ hours without encapsulation), and potential for roll-to-roll manufacturing processes.

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