

What are the applications of polymer solar cells?

The potential applications of polymer solar cells are broad, ranging from flexible solar modules and semitransparent solar cells in windows, to building applications and even photon recycling in liquid-crystal displays.

Which polymer enables efficient all-polymer solar cells?

Nat. Commun. 12, 5264 (2021). Sun, H. et al. A narrow-bandgap n-type polymer with an acceptor-acceptor backbone enabling efficient all-polymer solar cells. Adv. Mater. 32, 2004183 (2020). Jia, T. et al. 14.4% efficiency all-polymer solar cell with broad absorption and low energy loss enabled by a novel polymer acceptor.

Are polymer solar cells efficient?

Polymer solar cells have shown potential to harness solar energy in a cost-effective way. Significant efforts are underway to improve their efficiency to the level of practical applications. Here, we report highly efficient polymer solar cells based on a bulk heterojunction of polymer poly (3-hexylthiophene) and methanofullerene.

Which polymer acceptor enables all-polymer organic photovoltaic cells?

An efficient polymer acceptor via a random polymerization strategy enables all-polymer solar cells with efficiency exceeding 17%. Energy Environ. Sci. 15, 3854-3861 (2022). Wang, J. et al. A new polymer donor enables binary all-polymer organic photovoltaic cells with 18% efficiency and excellent mechanical robustness. Adv.

Are semiconducting polymers good for solar energy harvesting?

Based on semiconducting polymers, these solar cells are fabricated from solution-processing techniques and have unique prospects for achieving low-cost solar energy harvesting, owing to their material and manufacturing advantages.

Are polymer solar cells a cost-effective alternative to silicon-based solar cells?

Polymer solar cells have evolved as a promising cost-effective alternative to silicon-based solar cells 1,2,3. Some of the important advantages of these so-called 'plastic' solar cells include low cost of fabrication, ease of processing, mechanical flexibility and versatility of chemical structure from advances in organic chemistry.

constructed under a polymer fluid and one under bentonite. The difference between the two polymer piles was the pile bore open time; one was concreted within 7.5 h of the completion of ...

Fig. 1. Polymer fluid being pumped to a pile bore By way of example, Fig. 1 shows a fresh polymer fluid being pumped to a pile during excavation. It can be seen that it is a clear solution and in ...

characteristics between piles constructed under polymers and bentonites; n whether a polymer-supported bore can be open for an extended period (eg >12 hours) without compromising the ...

This study has comprehensively investigated the bearing characteristics of three types of photovoltaic support piles, serpentine piles, square piles, and circular piles, in desert gravel areas. Through numerical ...

DOI: 10.1016/j.sandf.2023.101277 Corpus ID: 256352338; Frost jacking characteristics of steel pipe screw piles for photovoltaic support foundations in high-latitude and low-altitude regions

Two major bottlenecks for organic photovoltaic module production are device stability and the development of an architecture that allows using the newest high-efficiency active layer materials in large-scale solution ...

To this end, three 1.2-m diameter and 27-m long bored piles were constructed, two of which were excavated under polymer fluids [i.e., (1) Pile P1, and (2) Pile P2] and one under bentonite (Pile B1). The Marsh funnel ...

piles were excavated under polymer fluids [i.e., (1) Pile TP1, (2) Pile TP2, and (3) Pile TP2 R] and one was excavated under bentonite (Pile TP4). The polymer used was a PHPA marketed as ...

Request PDF | On Apr 1, 2023, Gongliang Liu and others published Frost jacking characteristics of steel pipe screw piles for photovoltaic support foundations in high-latitude and low-altitude ...

The application of recycled polymer piles has very high potential and success rate as the compressive strength of the polymer has been found to be higher than bakau pile ...

1. Introduction. Organic photovoltaic (OPV) devices have been attracting much attention because of their advantageous properties, including light weight, mechanical flexibility, low material and fabrication cost, and short ...

T1 - Properties and applications of polymer support fluids in geotechnical engineering. AU - Lam, Carlos. PY - 2011. Y1 - 2011. ... From the results, it was found that the polymer piles showed ...

