



Sister Xiao Yang s photovoltaic bracket

Who is Xiao Liang?

His research focuses on the photovoltaic effects of ferroelectric thin films and single crystals such as BiFeO₃ and PZT. Xiao Liang received his B.S. degree from Henan University in 2013. He is currently pursuing his M.S. degree in the School of Physics and Electronics of Henan University.

Are polymer solar cells a next-generation photovoltaic?

Nature Photonics 9,174-179 (2015) Cite this article Polymer solar cells are an exciting class of next-generation photovoltaics, because they hold promise for the realization of mechanically flexible, lightweight, large-area devices that can be fabricated by room-temperature solution processing 1,2.

What is the power conversion efficiency of heterojunction polymer solar cells?

Liang, Y. Y. et al. For the bright future--bulk heterojunction polymer solar cells with power conversion efficiency of 7.4%. Adv. Mater. 22, E135-E138 (2010). Li, W. W., Furlan, A., Hendriks, K. H., Wienk, M. M. & Janssen, R. A. Efficient tandem and triple-junction polymer solar cells. J. Am. Soc. Chem. 135, 5529-5532 (2013).

Can bandgap tuning improve photovoltaic properties?

Among these methods, bandgap tuning is one of the most effective ways to achieve improved photovoltaic properties. Nechache et al. adjusted the bandgap of Bi₂FeCrO₆ multilayers to appropriate values (1.4-3.2 eV) and achieved a record high PCE of 8.1%.

Who is Wei Zhang?

Wei Zhang received his B.S. degree from Luoyang Institute of Science and Technology, China in 2012. He is currently a postgraduate student in the School of Physics and Electronics of Henan University and jointly supervised by Prof. Hai-Wu Zheng and Prof. Ren-Kui Zheng from the Shanghai Institute of Ceramics, Chinese Academy of Sciences.

Can narrow-bandgap polymers reduce open-circuit voltage losses?

Here, we demonstrate that fundamental losses in the open-circuit voltage of PSCs based on narrow-bandgap polymers can be effectively alleviated and modulated over a wide range (100 mV) through control over band tailing below the LUMO of PC71BM, and we report a PCE of over 10% in single-junction PSCs.

In this feature article, we reviewed the advance in understanding the mechanisms of the ferroelectric photovoltaic effects and recent progress in improving the photovoltaic device performance, including the emerging approaches of ...

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