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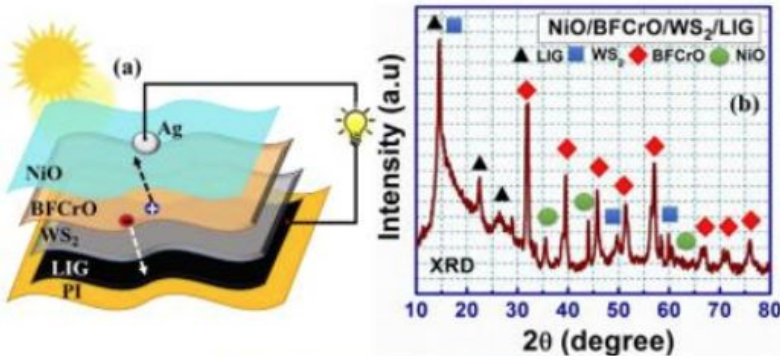
PENDING

(IN202111032227) Method of fabricating a graphene electrode based heterojunction photovoltaic cell



NEED

Solar energy is growing, but flexible, lightweight solar cells for wearable devices remain underdeveloped. What if we could fabricate photovoltaic cells on flexible substrates for portable energy harvesting without compromising efficiency?

MARKET ANALYSIS

The global flexible solar cell market is projected to grow at a CAGR of 16.4% from 2023 to 2033, driven by increasing demand for wearable devices and renewable energy solutions. (Source: Grand View Research)

TECHNOLOGY OVERVIEW

This technology describes a method for creating graphene electrode-based heterojunction photovoltaic cells, ideal for flexible and wearable applications. The cells feature a unique combination of materials for enhanced efficiency and energy harvesting.

Target Industries

1) Flexible electronics manufacturers producing wearables and portable devices. 2) Renewable energy companies focusing on flexible solar energy solutions. 3) Material developers innovating with advanced solar cell components.

TECHNOLOGY KEY FEATURES

1) Graphene electrodes for flexibility. 2) Tungsten disulfide for electron transport. 3) Chromium-doped bismuth ferrite for photoactive layer. 4) Metal oxide hole transport layers. 5) Optimized fabrication process using CO2 laser and drop casting.

AT A GLANCE

- SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation, and Infrastructure)

Read more here

Technology is available for licensing/ co-development.

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