

Crystalline silicon solar glass transmittance





Overview

Forming light-transmitting structures on c-Si photovoltaics to transmit visible light without wavelength dependency is a promising strategy to realize neutral-color transparent c-Si photovoltaics (c-Si TPVs). Howe.

What is the optical transmittance and reflectance of transparent c-Si solar cells?

The optical transmittance, reflectance, and haze ratio of the transparent c-Si solar cells were measured in the wavelength range of 300–1,100 nm using a UV-vis/NIR spectrophotometer (Cary 5000, Agilent) equipped with a 110 mm integrating sphere to account for the total light (diffuse + specular) reflected from the devices.

What is a transparent c-Si solar cell with 20% transmittance without MIPS-PDMS?

The transparent c-Si solar cells with 20% transmittance without MIPS-PDMS yielded a PCE of 14.5%, a Voc of 638 mV, a J_{sc} of 29.1 mA/cm², and a fill factor (FF) of 78.5%, as presented in Table 1 and Figure 2 B.

What is a transparent c-Si solar cell?

The 25 cm²-sized transparent c-Si solar cells were measured from –1.0 to 1.0 V at a temperature of 25°C in air at a scan rate of 380 mV/s. In the measurement of the J - V characteristics of the transparent c-Si solar cells, the device area was defined as the total area, including both the light absorption region and the light transmission region.

How to fabricate crystalline silicon solar cells with average visible transmittance (AVT)?

This study proposes a novel method of fabricating ST crystalline silicon solar cells with average visible transmittance (AVT) controlled via hexagon-arranged microhole patterns using two-step laser processing. The optimal configuration of microholes was evaluated, with the AVT as functions of microhole diameter and distance.



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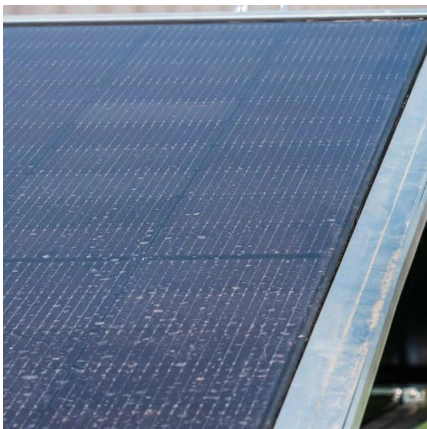


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