

# Polycrystalline silicon and solar glass





## Overview

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Can poly-Si thin-film solar cells be used on glass?

Solar Energy Materials and Solar Cells (2008) in press, doi:10.1016/j.solmat.2008.09.059. Poly-Si thin-film solar cells on glass feature the potential to reach single-junction efficiencies of 15% or even higher at low costs.

What is thin-film polycrystalline silicon (c-Si) technology?

Thin-film polycrystalline silicon (poly-Si) technology, which involves the formation of c-Si thin films with a grain size of 0.1–100  $\mu\text{m}$  on low-cost large-area substrates (glass, etc.) , attempts to combine the economic efficiency of thin-film technology with the high quality of the crystalline material typical of c-Si technology.

Can ZnO Al-coated glass be used for poly-Si thin-film solar cells?

We have found recently that ZnO:Al-coated glass can be used for poly-Si thin-film solar cells if the ZnO:Al layer is capped during the subsequent process steps at elevated temperatures. This allows the implementation of new contacting and light-trapping schemes for poly-Si thin-film solar cells.

Are crystalline Si thin films a viable alternative to solar cell production?

Thus, an attractive alternative approach to solar cell production is the cost-effective fabrication of high-quality crystalline Si thin films.



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Polycrystalline silicon (poly-Si) thin-film device structures on inexpensive foreign supporting materials such as glass are becoming increasingly important, for example in thin ...

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The paper presents a review of major features of the crystalline silicon on glass (CSG) technology, its achievements, limitations and challenges, and latest developments. CSG cells ...

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Poly-Si thin-film solar cells on glass feature the potential to reach single-junction efficiencies of 15% or even higher at low costs. In this paper innovative approaches are ...

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INTRODUCTION Recently, thin polycrystalline silicon (poly-Si) films on cost-effective substrates (e.g., glass) are emerging as a promising technology for large scale ...



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[Polycrystalline silicon on glass for thin-film solar cel](#)

Abstract Although most solar cell modules to date have been based on crystalline or polycrystalline wafers, these may be too material intensive and hence always too expen ...

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[What Are the Main Materials Used in Solar Panels?](#)

What Are the Main Materials Used in Solar Panels? The most common material is crystalline silicon, used in both monocrystalline and polycrystalline cells, which forms the ...

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Fabrication and characterization of solar cells based on multicrystalline silicon (mc-Si) thin films are described and synthesized from low-cost soda-lime glass (SLG). The ...

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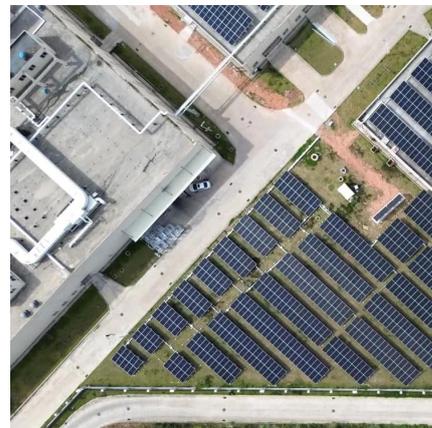
Perovskites are promising materials for solar cells. A layer of dipolar molecules at the perovskite surface improves the efficiency of these devices.

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