

# Photovoltaic panel glass debonding



## Overview

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The detachment of this glass-EVA layer from the silicon (Si) is a significant challenge in recycling end-of-life PV panels. Unlike those of conventional glass, Onyx Solar photovoltaic glass can be customized to optimize its performance for multicrystalline PV. With broken glass, it is to replace it. Nanosecond Laser Debonding of Strong Adhesives. Uncertain degradation kinetics and reliability models. Exposure to thermal cycling, stress, moisture, chemically active environmental. During my PhD, I developed a laser-based technology for debonding structural adhesives and polymers. The key idea is to convert high-intensity photon energy into thermal energy, which breaks the interfacial adhesive bonds between the polymer and substrate.

## Photovoltaic panel glass debonding

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### UNIVERSITY OF CALIFORNIA RIVERSIDE Pulsed Laser-Based

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Chapter 4: Anwar, T. B.; Hanson, K. M.; Lam, K.; Bardeen, C. J. Using Nanosecond Laser Pulses to Debond the Glass-EVA Layer from Silicon Photovoltaic Modules. Waste Manag. 2024, 187, ...

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### Quantifying Adhesion and Debonding of Encapsulations for Solar ...

Quantifying Adhesion and Debonding of Encapsulations for Solar Modules  
Fernando Novoa\* and Reinhold H. Dauskardt Department of Materials Science, Stanford University, 496 Lomita Mall, ...

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### New decapsulation tech for solar module recycling - pv magazine

At certain concentrations and temperatures, limonene can induce appropriate expansion of EVA, efficiently breaking the interface bonds without causing excessive expansion and



damaging the ...

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## Using nanosecond laser pulses to debond the glass-EVA layer from

In this paper, a new method using nanosecond laser pulses is demonstrated to induce transient melting selectively at the EVA-Si interface. This impulsive heating method can cleanly ...

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## (663b) Using Laser Irradiation to Separate Polymer Adhesives from

The detachment of this glass-EVA layer from the silicon (Si) is a significant challenge in recycling end-of-life PV panels. To tackle this issue, a novel impulsive light-debonding technique was devised and ...

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## Photovoltaic panel glass

## debonding

To demonstrate laser-based debonding on a commercially available end-of-life photovoltaic (PV) solar panel, a full-sized (1.7 x 1 m<sup>2</sup>) module (Poly-Si, 260 W, WSP-260P6,

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## My paper on laser-based debonding for photovoltaic modules

I successfully demonstrated this laser-based debonding application on both model solar modules and commercial solar panels to separate the front glass from the semiconductor (Silicon) wafer-

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## Effect of UV ageing on debonding of double glass laminates based on

Double-glass laminates (300 × 200 × 7 mm<sup>3</sup>) were manufactured by laminating two stacked encapsulant films between two glass substrates at 155 °C and 800 mbar for 20 min in a ...

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## Thermal-Mechanical Delamination for Recovery of Tempered Glass ...



In response to these challenges, a thermal-mechanical delamination approach is proposed in this study. The method utilizes controlled heat application (hot air gun) to weaken the ...

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## Photovoltaic panel glass debonding technical parameters

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