The fastest way to debond plastic in photovoltaic panels

The method makes use of femtosecond lasers, a type of infrared laser that focuses energy on a very short time scale with a single laser pulse. The laser creates hermetically sealed glass-on-glass...

As the photovoltaic (PV) industry continues to evolve, advancements in Photovoltaic panel glass debonding have become critical to optimizing the utilization of renewable energy sources.

Common surface pretreatment processes such as primer or plasma pretreatment are compati-ble with this debonding technology.

Launched in December 2024, PVDEBOND brings together chemistry, materials science and PV engineering to tackle a simple yet radical idea: what if we could design solar panels that can be taken apart - cleanly, ...

In a bid to make solar panels more recyclable, researchers use a high-speed laser to seal PV cells in pockets of glass.

Researchers at the U.S. National Renewable Energy Lab (NREL) in Golden, Colo., say they"ve found a better way to seal solar modules. Using a femtosecond laser, the researchers welded together solar ...

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 separate the glass ...

PVDEBOND aims to incorporate debonding-on-demand additives to existing PV encapsulant foils to enable fast, clean, and precise separation and recycling of materials.

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...

To tackle this issue, a novel impulsive light-debonding technique was devised and tested on both model and commercial poly-crystalline PV panels. Nanosecond laser pulses can effectively induce transient melting at ...

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