Photovoltaic panel soft board debonding

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...

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

Herein, a scalable and low energy process is developed to recover pristine silicon from EoL solar panel through a method which avoids energy-intensive high temperature processes.

What causes solar panel degradation? Solar panel degradation is not caused by a single isolated phenomenon, but by several degradation mechanisms that affect PV modules, but the main cause is ...

How to debond or remove EVA is the most important step for the recycling. Several approaches have been proposed, such as mechanical crushing treatment, chemical soaking with ...

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 ...

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 ...

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

This manual will aid in developing a basic quality assurance program around the use of sealants in solar PV applications that require durability and reliability. Since PV frames and modules vary in design ...

To demonstrate laser-based debonding on a commercially available end-of-life photovoltaic (PV) solar panel,

a full-sized (1.7 x 1 m 2) module (Poly-Si, 260 W, WSP-260P6, ...

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