

Photovoltaic panel replacement patent application process

What are the patents for solar panels?

It is noted that the patents US20040163338A1 (Low profile mounting system), US20060086382A1 (Mechanism for mounting solar modules) and US20110209745A1 (Photovoltaic framed module array mount using asymmetric rail) have great influence on this route due to their BC and were developed respectively by Unirac Inc, PVT Solar Inc and GE. Fig. 5.

Does PV technology have a role in patenting?

The technical review of these patents has shown the global continuous efforts for improving PV technologies and addressing their technical challenges. Taken together, the results show that the PV technological system has been deeply connected with patenting activities since its emergence in the past century.

What is a patented technique for complete deconstruction of PV panels?

A patented technique was adopted for complete deconstruction of PV panels. Aluminum, copper, tedlar, glass, ethyl vinyl acetate, silver, and silicon are all separated cleanly in the process, allowing all of the products to be utilized in various industries. The separated broken PV cells were collected and stored for purification.

Where are PV patents filed?

The analysis shows that 95% of the PV patent applications were filed by inventors from seven countries: Japan, Korea, China, USA, Germany, Taiwan, and France. Most patents were filed by companies and related to thin-film and crystalline-silicon cells as well as panel encapsulation and supporting structures.

Can photovoltaic panels be recycled?

Recycling photovoltaic (PV) panels is essential for the sustainable growth of the PV sector on a global scale. This review explores different techniques employed by researchers for recycling and recovering metals from PV panels.

What is the IPC GI for photovoltaic patents?

As search criteria, photovoltaic (PV) patents applied from 1998 to 2017 were selected and whose classification (IPC) are related to green technologies according to the IPC Green Inventory (IPC-GI) available on the WIPO (World Intellectual Property Organization). Such IPC of PV green technologies are shown in Table 2.

Photovoltaic power generation is developing rapidly with the approval of The Paris Agreement in 2015. However, there are many dust deposition problems that occur in ...

The market for photovoltaic modules is expanding rapidly, with more than 500 GW installed capacity. Consequently, there is an urgent need to prepare for the ...

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Finally, the geographical, organizational and technical trends over the past six decades are analysed along with a review of the most influential inventions. The analysis ...

The TR of Systems, methods and devices for solar PV solar cells is composed of 21 patents (Fig. 6) and the most influentials are: US6058930A (Solar collector and tracker ...

We focus on the diffusion of breakthroughs in two leading clean energy technologies, solar photovoltaic and wind power. Patents in these two technologies are ...

Finally, a stable PV power generation technique for PV generation systems is proposed which is a novel MPPC technique applied to the PV generation system integrated with a supercapacitor ...

A hybrid solar/wind turbine apparatus, which includes a blade and shelf assembly configured to provide wind impulsion and wind capture. The blade and shelf ...

Researchers in China are proposing a new technique to recover polyethylene glycol terephthalate (PET) and ethylene-vinyl acetate (EVA) in solar panels at the end of their ...

The energy world is changing quickly because solar power is becoming more and more important. The demand for solar panels is increasing, and there is a need for ...

The present invention relates to a solar panel cleaning device to move the solar panel cleaning device on a solar panel by using a drone. According to the present ...

The information can be used by residents to make decisions about when to repair or replace a solar panel. The information can also be used to identify anomalies in solar ...

Solar photovoltaic (PV) deployment has grown at unprecedented rates since the early 2000s. Global installed PV capacity reached 222 gigawatts (GW) at the end of 2015 ...

a photovoltaic generating panel of generally quadrangular shape containing a multiple number of semiconductor solar cells inside a laminate assuring the immobilization and protection of said ...

The installations of photovoltaic (PV) solar modules are growing extremely fast. As a result of the increase, the volume of modules that reach the end of their life will grow at the same rate in the near future. It is expected that ...

Researchers in China are proposing a new technique to recover polyethylene glycol terephthalate (PET) and ethylene-vinyl acetate (EVA) in solar panels at the end of their lifecycle. The two ...

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a microinverter is an inverter dedicated to one or a few PV panels, and may be defined as an inverter having a power rating suitable for connection to less than 10 or less than 5 panels (for ...

The present disclosure provides a flexible photovoltaic module, which can solve the foregoing problems, simplify the processing technology of the flexible photovoltaic module ...

1. Purpose 2. Scope of Application 3. Duties of the Operator in The Solar Energy Production 4. Content 4.1 Cutting EVA 4.2 Cell Sorting for Solar Energy Production 4.3 String Welding the ...

The technological knowledge basis of this route is constituted by patents on solar cells with an integrated diode and bypass method, passing through photovoltaic panels with ...

When to Replace Photovoltaic Panels. PV panels are exceptionally durable, and their performance degrades minimally over time, with an average annual degradation rate of ...

The results indicate that 1) the number of patents deposited on photovoltaic cells grows every year, 2) the main depositor countries are the United States, China, Japan, ...

o 860 PV patents are confirmed to be associated with SETO funding (483 U.S. patents, 158 EPO patents, and 219 WIPO patents). We grouped these SETO-funded PV patents into

In Japan, solar panel waste recycling is under the control of the Japanese environment ministry and solar panel manufacturers participate with local companies in ...

Transparent, superhydrophilic materials are indispensable for their self-cleaning function, which has become an increasingly popular research topic, particularly in photovoltaic (PV) applications. Here, we report hydrophilic ...

Due to the general price pressure PV modules experienced in the last decade, a variety of alternative polymer materials and new backsheets designs were developed and ...

The role of renewable energy in global power generation is growing -- particularly for solar power. Thanks to increasing innovation and decreasing costs, global solar ...

The process delivers a complete package, including recycling of PV panels, recovery and purification of Si, conversion to nano-Si, and subsequent integration of PV nano-Si and graphite into a single system of PV nano ...

Before diving into the upgrade or replacement process, it's crucial to assess personal or business energy needs. ... Progress in Photovoltaics: Research and Applications, ...

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A global patent search identified 456 patents, with 80% of patents targeting recycling processes for silicon-based modules, cell metals, polymers, glass, or devices. Companies with the most patents were identified ...

Before diving into the upgrade or replacement process, it's crucial to assess personal or business energy needs. ... Progress in Photovoltaics: Research and Applications, 23(1), 1-9. Nelson, J. (2003). The ...

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