

Special patent for photovoltaic panels

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.

What are the patents on photovoltaic cells?

The patents on photovoltaic cells are concentrated in the area of semiconductors for the conversion of solar radiation into electric energy, in the area of generators for the direct conversion of light energy into electric energy and in the area of solar panels adapted for roof structures.

Why are photovoltaic cell patent registrations important?

Photovoltaic cell patent registrations are a valuable data set in the analysis and diffusion of PV technology and R&D activities. The dynamics of PV R&D activity is considered high, documented in a large increase in PV patent documents .

How many solar patent families are there?

This patent family is linked to 85 subsequent patent families assigned to the leading PV organizations. These include Canon patents describing solar modules, IBM patents for solar concentrators, and Total SA patents related to solar panel installation.

How many patents does first solar have?

In the ninth position, with 151 patents, is First Solar, a US company one of the largest manufacturers of photovoltaic solar modules with production units in the United States, Malaysia, Germany and Pakistan.

What are some examples of solar patents?

These include patent families owned by eight of the ten leading organizations (i.e. all except Merck and Fuji Film). Examples include patents for solar cell encapsulation assigned to DuPont, solar cell interconnects assigned to Applied Materials, and thin-film PV cells assigned to Total SA (SunPower).

Special Topics; Tutorials; Upcoming Special Topics; Publish With Us. Submit Your Manuscript; ...," U.S. patent 658,334,9B2 (2003). ... Photovoltaic panel and solar-panel unit made using photovoltaic panels of the same sort," U.S. patent 2008/0092876A1 (2008).

(Yicai) Feb. 9 -- Chinese solar panel giant Longi Green Energy Technology has applied for a patent for a perovskite solar cell technology used for laminating photovoltaic panels, according to the China National Intellectual Property ...

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An array of photovoltaic panels is supported in rows and columns spaced from one another using a foldable bi-directional span of support members. The support members include a plurality of support joists and support rails braced at an incline. Each support rail is tubular and generally rectangular, having a lower wall section with a T-slot channel for ...

The paint is designed to be applied to the roof of a building to better absorb the light needed to power a home using solar energy. "The paint contains luminescent molecules that absorb and emit light, which directs sunlight towards solar panels," said Nathaniel Davis, a researcher on the project.

The invention provides solar panel systems, which may be applied to surfaces such as residential rooftops. ... 2010-06-17 Priority to US13/133,634 priority Critical patent/US20120031470A1/en 2011-11-03 Assigned to ARMAGEDDON ENERGY, ... and can be carried out by installers without special training. FIG. 8C shows an example of a bracket fastener ...

Take solar energy, for example. The development of the solar panel (now a common feature on many Australian rooftops) is a great example of how such cumulative efforts, carefully recorded within our international patents ...

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, Germany and South Korea, 3 ...

US-based IntriEnergy has secured a patent for its PV cell tech platform that can increase the energy output of solar panels by up to 60% without increasing the panel size.

Disclosed is a photovoltaic panel cleaning system using a drone capable of cleaning operation of an exact location. The photovoltaic panel cleaning system using a drone comprises: a control stage including a path generation unit for generating a flight path including a cleaning position of a photovoltaic panel and a control communication unit for transmitting the flight path; and a drone ...

A kind of solar panel cleans and uses intelligent mobile conveying device US11489487B2 (en) 2017-08-04: 2022-11-01: Saudi Arabian Oil Company: Robotic solar panel cleaning system US10771008B2 (en) 2017-08-04: 2020-09-08: Saudi Arabian Oil Company: Robotic solar panel cleaning system CN107681969A (en) *

The present invention is an apparatus and method for the realization of a photovoltaic solar cell that is able to achieve greater than 50% efficiency and can be manufactured at low cost on a ...

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 ...

Under typical UK conditions, 1m² of PV panel will produce around 100kWh electricity per year, so it would



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take around 2.5 years to "pay back" the energy cost of the panel. PV panels have an expected life of least 25 to 30 years, so even under UK conditions a PV panel will generate many times more energy than was needed to manufacture it.

The increase in temperature of photovoltaic (P·V.) module is not only due to the climatic environment (ambient temperature) but also to the problems of direct and indirect partial shading; several recent studies are of interest to our present research [10, 11].The shading on the photovoltaic module can be caused by the projection of the shadow of an object installed far ...

This application claims benefit of priority to U.S. Provisional Patent Application 62/299,287 titled "Solar Panel" and filed Feb. 24, 2016, which is incorporated herein by ...

Within the optical and thermal arrangement of solar PV panels, the patent entitled "Concentrating solar energy receiver" [90] is found to be highly influential, as it has been cited by 181 patent and non-patent publications since its priority date in 2002 (PIF = 12.9). The application is assigned to an American individual called Bernard Bareis.

Dust accumulation significantly affects the solar PV(Photovoltaic) performance, resulting in a considerable decrease in output power, which can be reduced by 40% with the dust of 4 g/m².Understanding the dust deposition characteristics of PV modules can provide theoretical support for selecting dust cleaning methods and formulating cleaning strategies.

state ($G > 0$). This research contributes to the understanding of operating principles for PV panels under the steady state and the dynamic state. Secondly, based on complete PV output characteristics, two high-efficiency generation techniques for PV generation systems are proposed. At first, a novel Maximum Power Point (MPP) Capturing

This review examines the technological surveillance of photovoltaic panel recycling through a bibliometric study of articles and patents. The analysis considered the number of articles and patents published per ...

Photovoltaic (PV) panels are widely adopted and set up on residential rooftops and photovoltaic power plants. However, long-term exposure to ultraviolet rays, high temperature and humid environments accelerates the oxidation of PV panels, which finally results in functional failure. The traditional fault detection approach for photovoltaic panels mainly relies on manual ...

If you're innovating in the solar industry, patents will be a primary tool for legally protecting your IP. This is because solar power systems can typically be reverse engineered by competitors, which means you can't ...

A solar cell or photovoltaic cell (PV cell) is an electronic device that converts the energy of light directly into electricity by means of the photovoltaic effect. [1] It is a form of photoelectric cell, a device whose electrical characteristics (such as ...



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BayWa r.e. and GroenLeven have designed special monocrystalline solar panels for five pilot agrivoltaic projects they are deploying in the Netherlands. They are testing weather-resistant 260 W ...

From pv magazine India. Gautam Solar has filed a patent design registration for its packaging pallet aimed at safely storing and transporting solar panels. The company said the pallet can be used ...

The present invention relates to a cooling system and method for photovoltaic solar panels. The cooling system and method allow reducing the temperature of the outer surface of photovoltaic solar panels, hereinafter PV panels (2), thereby maximizing their performance and keeping their surface at optimal operating temperatures (about 25° C.) at all times, while at the same time ...

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