Patent for thin-film solar cells in communication network cabinets

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.

Are photovoltaic cells a technological development?

There is a prominence of deposited patents for polymer-based photovoltaic cell technologies, carbon nanostructures, III-V compounds, CdTe and amorphous silicon cells. The objective of this article is to identify the technological development of photovoltaic cells by the analysis of patents.

Can cadmium telluride be used for thin film solar cells?

One of the most promising approaches to manufacturing low cost and high efficiency involves the use of cadmium telluride. The CdTe has been known to have the ideal gap (1.45eV) with a high coefficient of absorption of the solar spectrum being one of the most promising photovoltaic materials for thin film cells.

Which country has the most patent documents on photovoltaic cells?

The evolution of the total number of patent documents on photovoltaic cells per country in the period from 2004 to 2013 is shown in Fig. 7. It can be seen that the first two positions are occupied by the United Statesand China respectively,followed by Japan,Germany and South Korea. Fig. 7.

How many scientific publications are there in photovoltaic cells?

The number of scientific publications corroborates with the number of patents in terms of representativeness per country,since,through Fig. 6,it can be observed that of the 17,888publications,the United States,China,Japan,South Korea and Germany were the main countries that published on photovoltaic cells in the period 2004-2013. Fig. 6.

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 .

thin film solar cells have presented methods of forming thin films such as n-layer, i-layer, p-layer, substrate and transparent conductive oxide, methods of constructing multi-lay-

Solar cells are commonly recognized as one of the most promising devices that can be utilized to produce energy from renewable sources. As a result of their low production costs, little material consumption, and projected increasing trajectory in terms of efficiency, thin-film solar cells have emerged as the technology of

choice in the solar industry at present. This ...

A METHOD FOR DEVELOPING THIN FILM SOLAR CELL WITH ALTERNATIVE ABSORBER LAYER Name of inventor(s): Srivastava, Ashutosh; Tripathy, Susanta Kumar and Lenka, Trupti Ranjan Term of Patent: Eight years from 20 August 2021 NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of

The methodology is illustrated using a case study of patents related to silicon-based thin film solar cells. Without predefining keyword or key phrase patterns, the methodology assists experts to more concentrate on their knowledge services that identify trends in technological innovation from patents.

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Two lower-cost options have emerged: dye-sensitized organic or polymer solar cells and thin-film solar cells, such as those based on copper indium gallium selenide (CIGS) semiconductors. With ...

A thin-film solar cell includes a thin active layer of high purity material having opposed front and rear surfaces for light-to-electricity conversion, a structure for supporting the thin...

thin film Solar cell modules. CdTe thin film Solar cells in the form of CdTe/CdS thin film solar cells are disclosed for example in the EP0535522 A2 corresponding to U.S. Pat. No. 5,304,499. ...

DOI: 10.1007/s11192-010-0303-8 Corpus ID: 36787213; Invention property-function network analysis of patents: a case of silicon-based thin film solar cells @article{Yoon2011InventionPN, title={Invention property-function network analysis of patents: a case of silicon-based thin film solar cells}, author={Janghyeok Yoon and Sungchul Choi and Kwangsoo Kim}, ...

Short Communication. Thin film solar cell with 8.4% power conversion efficiency using an earth-abundant Cu 2 ZnSnS 4 absorber. Byungha Shin, Byungha Shin. IBM T. J. Watson Research Center, Yorktown Heights, NY, 10598 USA. Search for more papers by this author. Oki Gunawan, Oki Gunawan. IBM T. J. Watson Research Center, Yorktown Heights, NY, 10598 ...

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thin film solar cells have presented methods of forming thin films such as n-layer, i-layer, p-layer, substrate and transparent conductive oxide, methods of constructing ...

Organohalide lead perovskite solar cells have emerged as a promising next-generation thin-film photovoltaic

technology. It has been clearly recognized that interfacial engineering plays a critical ...

The proposed methodology automatically extracts properties and functions from patents using natural language processing. Using properties and functions as nodes, and co ...

Invention property-function network analysis of patents: A case of silicon-based thin film solar cells. Scientometrics. v86 i3. 687-703. Scientometrics. v86 i3. 687-703. Digital Library

In this paper, patents related to silicon-based thin film solar cells are used to illustrate the proposed method. Solar energy is believed to be the most promising renewable ...

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