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SOLAR PANELS ARE ELECTRICITY EFFECTIVE SOLUTION TO THE USE OF ALTERNATIVE SOURCES

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Abstract

This article provides information about solar energy and discusses the effective prospects of using solar panels.

Key words

Energy, consumer, monocrystalline, polycrystalline, panels, energy resources, silicon.

Аннотация

В данной статье представлена информация о солнечной энергетике и рассмотрены эффективные перспективы использования солнечных батарей.

Ключевые слова

Энергетика, потребитель, монокристаллические, поликристаллические, панели, энергоресурсы, кремний.

Enter

As we know, the economical use of fuel sources, the desire to reduce mechanical energy .Therefore the cost of obtaining electrical energy, leads to the extensive use of wind and solar energy, which are continuously renewable energy sources. Currently, the energy system of Uzbekistan provides energy to 19,000 industrial, 80,000 agricultural, 19,000 communal and 3.5 million household consumers. Every year, the sun's rays bring enormous energy to the earth, i.e. energy equal to $62*10^{16}$ kWh. 60% of this energy is used for heating the earth's atmosphere, 25.5% for the ocean and sea, and 14.5% for heating the land. That is why solar panels are widely used in all developed countries around the world.

Research materials and methodology

A solar panel is a device that converts light energy from the sun into electrical energy by connecting solar cells together. A solar panel consists of solar cells connected in series and parallel. The solar cells are placed inside a housing to protect them from external environmental influences. The structure of solar modules varies depending on the type of solar cells and their application. For example, an amorphous silicon solar cell is usually attached to a flexible coating, and when silicon solar cells are used as a remote source, the front is covered with thick coatings

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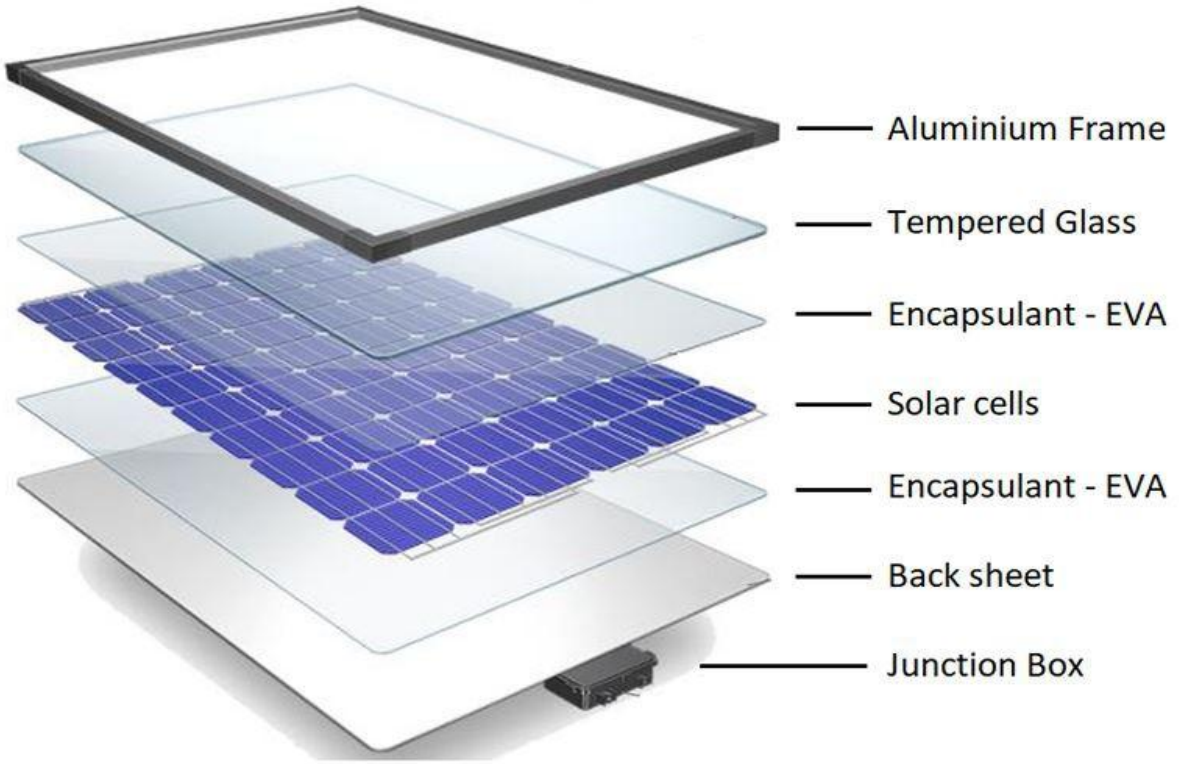

(Picture 1)

Solar panels are mainly made of silicon. These solar cells are made using layers of elemental silicon and elements such as phosphorus and boron. Elements added to silicon layers can be used to form an n-type layer with an excess of electrons and a p-type with a lack of electrons. These two layers form a p-n junction. The reason is that it has a higher sensitivity and higher efficiency than other chemical elements.

There are three types of solar panels:

1) Amorphous crystalline (thin film) solar panels

2) Monocrystalline

3) Polycrystalline (Pic.2)

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(Picture-2)

Among these types, the most widely used types are monocrystalline and plocrystal solar panels. Amorphous crystalline (thin-film) solar panels have a low efficiency and energy production characteristics, so large areas are not used for this type of panels.

Solar panels began to be used in many areas of human life. In the beginning, it was used only for household chores and as a substitute for electricity, but now it is

- In agriculture and other production structures;

- In small enterprises;

- To maintain heat in private houses;

- In street lighting, for energy-saving lamps;

- In public utilities, for city lighting.

Research results

1.There are several advantages to using solar resources. Unlike other energy sources, solar energy is never-ending. Installing and using solar panels is an excellent solution for using electricity and heat energy. According to NASA research, the sun will not spare our planet for another 6.5 billion years. The potential of solar energy is extremely high.

2.Due to the high potential level of solar panels, it is measured in terawatts. Since its reserve is inexhaustible, it will be enough for the future.

3.Solar panels are environmentally friendly products. Therefore, they can be installed in many places.

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