

Different Parts of the Film and the Alumina Nano-pitted

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Abstract: Photo Voltaic Pile devices based thin layer of cadmium sulfide, copper indium selenide D, and cadmium telluride to produce solar cells can be used on a large scale. Development of nanotechnology as well as opportunities for further development of these cells is the production of consumption expenditures. The porous alumina templates were created from a substrate is apparent that many opportunities for nanotechnology to improve performance and reduce costs of large-scale production of solar cells on thin layer provides, however, still challenges such as the quality of the scale Nano is not solved there. This paper investigates the alumina nano-pitted, pitted enamel Hello Nano-membranes, nano structured films pitted in alumina production of nano-cavity are addressed.

Key words: Solar Cells, Nano, Video, Parts, Sometimes Inked, Membrane.

INTRODUCTION

In recent years, nano-structured solar cells sensitized with pigments based on metal oxide film or nano-structures has attracted much attention. Photo Voltaic Pile promising cells with energy conversion costs are low. Using solar energy to electrical conversion efficiency of these cells is a hope. Sensitized solar cells with pigmented mechanisms operate fully with the performance of conventional solar cells with different junction. But after several years of research, their mechanisms are still not completely understood. Photo Voltaic Pile devices based thin layer of cadmium sulfide, copper indium selenide D, and cadmium telluride to produce solar cells can be used on a large scale. Solar cells, thin film cadmium sulfide / copper indium selenide D with high efficiency, high absorption coefficient, the voltage is low, and ultimately have been limited because of the low profile.

Cadmium telluride has a gap of almost ideal size to electron volts, which makes solar cells in a suitable absorbent material. Also, cadmium telluride, the particle size of several micro-meter length is short absorption. This reduces the grain boundary is a remix by the problem in other crystalline materials, there are many. When the carriers generated by photons are grafted to the depletion region of higher efficiency are. Cadmium sulfide, for the following reasons for the connection type is heterogeneous with cadmium telluride:

- A. The ability of cadmium telluride layers on cadmium sulfide which can be deposited.
- B. Junction occurs between the publication useful.

The Production of Nano-cavities:

Materials based on nano-holes can be divided into two main criteria:

A- classified by the size of pores:

A-1 ones with tiny holes, holes with a size of 0-2 nm

A-2 materials with medium holes, with holes the size of 20-40 nm

A-3 materials with large cavities, cavities with a size larger than 50 nm

B - Classification of materials based on the network: one of the main objectives in the field of nano-holes, by the chemical compound with a pore structure and the causes of both inorganic and organic (eg polymers) are divided. The main application of nano-holes, light minerals of the chemical compounds so that stability can be maintained and increased. Area of a solid surface, the nano-porous to increase and improve the catalytic properties, absorption and adsorption, it is. Nano-porous solid surface area of at most a few hundred grams per square meter is on. Zheolites are minerals with pores at the nano scale. Absorption and adsorption properties of these materials, they represent a potential environmental problems. The adsorption of these materials can also be used as a molecular sieve. In this case the material with a surface reaction, some

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molecules are removed. These materials are due to the high level of free catalytic reactions can also have an important role. The best way to produce all kinds of nano-holes, is formatted. Thus, a combination of organic (and sometimes mine) that acts as a preservative in the later stages of a cavity in the nano-porous material comes. Formatting, and sometimes control the pore size distribution is possible. The sol - gel and gel-based materials can be amid such Aurozhel. Aurozhel release of a gas in a gel, a solid lightweight (it only four times heavier than air) is converted. Lithography and etching techniques combined with the soft lithography, nanotechnology could create holes. For example, the ion beam produces a small excavation. Alternatively, the membrane pore size is controlled. In this method, ultraviolet light, self-assembling molecules in a thin layer of silicate structure with intermittent breaks in time. The product being exposed to light, the silica-based solid pattern occurs frequently. Change the way light changes the pore size is very reasonable.

Advantages and Disadvantages of Nano-structures:

Large scale production not only requires equipment designed for efficiency and stability is high, but need to regulate their ability to produce uniform films on large area is also felt. For this purpose, the first stage process to produce arrays of nano-structured semiconductor business, there is a large scale. This process must have the following conditions:

- A. The size and composition of nano-structured materials is a significant change.
- B. more advantageous to use a variety of substrates.
- C. compatible with standard silicon-based production methods.

The key aspects that will increase the efficiency of solar cells:

- A. The increase in light collection
 - B. The increase in load transfer from the free carriers
- In this regard, nano-structured layers of thin film solar cells play in Tuesday's major advantages are:
- A. One due to scattering, light is an effective way to attract, larger than the thickness of the film is real.
 - B. Two electrons and holes produced by light, because of the need to prevent movement of the combination much times are shorter. Nano-structures in the absorbent layer can be thin nanometer-sized thin film solar cell while in the normal range of thickness is a few micro-meters.
 - C. Change in size of nano particles can change the energy gap tape measure and to achieve the desired cell, the quantum limits to this design allows solar cells to the absorbent layer and the valves are properly prepared.

Three strategies for achieving the above (which increases the efficiency of solar cells is thin film) to clarify the concept of fitting a non-homogeneous nano-scale is needed. Nano tubes, hollow carbon structures are. Thus, there is the possibility of putting foreign substances in them. Putting metal inside the nano tubes can improve the electrical properties of these materials. Open nano tubes, hollow straw, act like one. The reed or hollow tube and the capillary action of a molecule can in certain circumstances, some elements are absorbed into their own. Hydrogen storage in single-wall carbon nano tubes is possible. Hydrogen absorption capacity of single-walled nano tubes made ??of nano tubes is about 3 to 5 percent by weight. So compared to other types of hydrogen storage systems such as liquid hydrogen, compressed hydrogen, metal hydrides and carbon super active, a system of carbon nano tubes, especially single-wall nano tubes, the best choice for the intended purposes and as a system could styles , compact, relatively inexpensive, safe and reusable can be used in hydrogen storage.

But its Disadvantages Are:

- A - set up costs
- B - Dependence on solar radiation intensity
- C - Need for energy storage.

Benefits in the Form of Nano

The main characteristics of nano-molding techniques include:

- 1. Regular and uniform distribution of a few micro-meters to a few nanometers in diameter microscopic alveolar.
- 2. Alveolar arrangement in two perpendicular directions with a depth to diameter ratio approximately equal distances from each other.
- 3. Ability to control cell diameter and three holes by changing the electrolyte composition and electrochemical process.
- 4. Repeat to make four films for large-sized films.

The advantage of this form of insulation, the curing reaction, without loss of crystal properties on the nanoscale.

Preparation of Nano-structure Film of Zinc Oxide Nano Particles Suspension:

Applying electrodes to nano-structure with a suspension of nano particles on a substrate using conductive heat conductive layers are created on a conductive glass, including glass coated with a transparent conductive oxide layers are thin. General methods to disperse: the covered period of immersion and spray to cover the making. In the semiconductor-metal transition fittings, mainly because it is carrying maximum current flow of holes in the metal-semiconductor junctions can be passed through to the five choices.

- A. The thermal emission from a semiconductor to the metal barrier potential that lies within. The process for Schottki diode with a doped semiconductor in mild low temperature, is dominant.
- B. Try the growth of the two quantum mechanical tunneling process is heavily dominated by the semiconductor doping.
- C. The combination of open space in the Times.
- D. injections of the metal to semiconductor.
- E. Open the composition of the surface mode.

Design of Nano-structure Components:

Thin film solar cells have reached the point that they are high. Few micro-meters and the thickness of the Ha band gap electron volts, which is ideally coincide with the solar spectrum. Using the quantum limit, as the gap increased. And consequently the open circuit voltage of these cells raised. In addition to the optical path using a nano-porous structure, increases. This optimization results in increased circuit density, reducing the thickness of the surface and therefore reduce the amount of chemicals needed to be in this cell. Preparation of nano-porous structure for the cells in the cavity, we have:

- A- nano-holes of the first frame selected land nanometers in diameter, by anodic to the aluminum coating on the glass, are created.
- B- to cover nano-cavity, the electrical deposition can be used. The problem with the film deposition for thin film solar cells for the formation of multi-crystalline films with stoichiometry close to that is: the film is often the beginning of the vacuum technique has been tested. Therefore influenced inside and out, a general problem in the heating process. This can either by deposition of an indium-rich composition or connection to the upper face of the electrons is deposited on the sides. The quantum limit can be a gap in the design of electron volts, which is the optimum value for the solar spectrum. The preparation process are:
 - A. A thin layer of aluminum deposited on a conductive substrate.
 - B. The anode consists of aluminum and alumina pitted two of the top conductor layer.
 - C. holes within the semiconductor electro congruent.
 - D. electro congruent cavity semiconductor junction to create a heterogeneous.
 - E. such as molybdenum by electrochemical deposition of an upper connecting congruent.
 - F. Alternatively, after step three for connecting a Schottky metal can be electro congruent.

Nano-alumina Films Pitted:

Porous alumina films by film deposition on glass, aluminum anodes are prepared. A micron of aluminum covered with a piece of glass is deposited. Nano structured films with the same quality that exit the coated glass substrate, or are created within the nano alumina production are pitted. And films are produced in three ways: A. solution B . The Chemical SONO C . microwave assisted synthesis.

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