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TECHNOLOGY OF MANUFACTURING OF SOLAR ELEMENTS

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ABSTRACT

The method of photolithography has already been given with great accuracy in the structures of YaO' a shape with topology is drawn and then it is technologically processed. A special photographic process in photoresist (light-sensitive polymer layers). Photoresists. FRs are light-sensitive materials that dissolve under the influence of light form is processed based on the change event. In the spraying method, FR is compressed air is scattered on the surface of the sample. This method makes it possible to obtain thick FR.

***Key words**: Photolithography method, light exposure, Photoresists, photoresist strengthening, drawing using a photo template, shape beam, eroding unnecessary areas, removing excess FR.*

INTRODUCTION

Photolithography method and its essence. Modern microelectronics achievements largely depend on the use of the photolithography method. By this method in structures, a form with a previously given topology is drawn with great accuracy and then it is processed technologically. With the help of this method, various materials, including projection images on dielectrics, semiconductor materials, and metals can be downloaded.

MATERIALS AND METHODS

Processing of materials (IaO, metal, dielectric) by photolithographic method (FLU). when given, first the necessary forms are made in a special light-sensitive material – photoresist is taken. Photoresist (FR) is imaged using special devices. 1-3 using the FLU method With a micron size, shapes can be drawn with an accuracy of 0.2-0.6 µm. With the FLU method The main processes of obtaining a form are technological, which are carried out in the following order consists of actions.

- transfer FR to the material,
- photoresist strengthening,
- drawing a picture using a photo template,
- light the shape,
- erosion of unnecessary areas,

- remove excess FR.

Photoresists. FRs are light-sensitive materials that are exposed to light based on the phenomenon of change in solubility, the form is worked out. FRs are mostly UV activated by light. Photoresist is made of polymer materials and is positive and will be negative. If its solubility increases under the influence of light, it is called positive, if it decreases - is called negative. Materials used in the photolithography method. Preparation of the material during the photolithography process is important technologically is a process. When applying FLU, the following requirements are imposed on the sample.

1) The absence of defects on the surface of the sample (dirt, mechanical lines, etc.).

2) Absence of various physical or chemical conditions on the sample surface (sample atoms other than the atom).

3) Selection of FR with the required adhesion. Sufficient thickness of the dielectric layers previously placed on the surface of the samplenneed 499

RESULT AND DISCUSSION

The process of getting the FR layer on the surface of the sample. There are several ways to get the FR layer there is. One of these is to extract the FR layer using a centrifuge. At a certain speed FR in the form of a droplet is placed on the surface of the sample attached to the rotating centrifuge. FR is observed to flow and form a thin layer during the process and from it evaporation of the solvent is observed until its viscosity reaches a certain level is used. The process continues until the FR flow stops. Usually the thickness for the formation of a uniform thin layer, the spin speed of the centrifuge is 1500-6000 rpm is desirable. The advantages of this method are the simplicity of the device, thinness it is possible to get layers. In the spraying method, FR is sprayed onto the surface of the sample using compressed air. This method is FR gives the opportunity to get thick. One of the simplest methods is to immerse the sample in FR method. FR drying process. Drying FR in a thermal chamber or by means of infrared rays there are methods. Drying is carried out at 80-100°C, and in some cases at 120-140°C. Take a photo using a photo template. A photo template is a sample that you need to download the shape on it is in the form of a reflection (for negative FR) or itself (for positive FR). Overlaying and irradiating the photo-template with the sample is usually done on the same machine will be held. Superimposing a photo template with a sample is a privileged, responsible process, it is the action that determines the accuracy of the FLU. The overlap process is under the microscope will be held. After this process, this pair is illuminated, mainly by contact method is used. The light passing through the FR layer is partially absorbed

and the photosensitive part of the FR activates. After the photoresist is activated by illumination, it is activated (i.e. light falling places) are absorbed by chemical method. As a result, the desired shape is formed. This the process is called "opening". "Opening" is done by immersion or pulverization method. This control in the process is carried out under a microscope and the accuracy of the given form importance is given. The accuracy of the "opening" process depends on the temperature of the "opening reagent". depends on concentration and lighting time. Forming in metal and dielectric layers. Forming in a thin layer first, a mask is created using FR, then a shape is created using FLU. One of the main steps in this process is chemical etching to form the shape. During chemical etching, only areas not protected by FR should be etched. But in some cases, erosion can go not only inside, but also to the side. And this can cause partial distortion of the shape and decrease in accuracy. This is the process mainly depends on the adhesion properties of the selected photoresist. Forming a silicon oxide (SiO2) layer. For the absorption of FR obtained on SiO2 mainly chemical solutions are used. For example, 88-91% of 40% ammonium fluoride (NH4F) 9-12% volume solution is prepared from volume and concentrated 48% HF. Erosion speed can be 0.04-0.5 μm/minute depending on the conditions of the process. For controlled absorption of very thin layers, 15 ml of 48% HF, 10 ml of 70% HNO3, 300 ml of H2O is taken and the absorption rate is 0.012 μm/min. Erosion of aluminum-based layers. Decomposing derived layers based on Aℓ acidic and alkaline solutions are used for Orthophosphorus as the main absorber acid is obtained. As an example, we give the following composition, 80-95 mlH3PO4 Q 5 ml When using HNO3 Q (1-20 ml) H2O at 40 oC, the rate of aluminum dissolution is 0.2 will be μm/minute.

1) the child's desire for knowledge increases;
2) he is jealous of his partner's knowledge;
3) is proud of his knowledge;
4) strives not to lag behind others;
5) when reading together, the child's speech grows, memory is strengthened;
6) flirt with each other;
7) learn to respect each other;
8) learns to debate;
9) compete with each other;
10) discuss their rights and duties.

CONCLUSION

Education in this way organization to improve the behavior of children, taking moral standards It helps them to get as a result of teaching their experiences and

traditions to young people, intellectual, moral, resulted from the teaching of divine knowledge. Because when writing was invented, writing, reading in early schools established to learn to read, write a teacher was needed. The creator of education and upbringing, to their perfection the first teacher who leads and teaches morals is also a teacher.

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