

## POLLINATION OF SOLAR PANELS AND KEEPING THEM CLEAN

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### ABSTRACT

Dusting of the transparent working surface of the solar panel in the article, as a result, electricity consumption levels decrease and pollen purification is studied.

**Keywords:** Solar panels, cleaning products, energy, pollination, maintenance. F.I.K. - (efficiency) pollution-pollution, dust, installation of panels at the workplace, manipulator.

### INTRODUCTION

It is known that the level of operation of solar panels in a given Meyer according to the technical recommendation will depend on the magnitude of the flow of light falling perpendicular to their working surfaces. For this reason, the surface layer of solar panels is made of transparent material, through which the flow of light passing through them is converted into electricity using photoelements on the panel. If, for various reasons, the transparent working surface of the normally functioning solar panel is completely blocked, their electricity production will be lost. More precisely, depending on the degree of obstruction of the surface part of the solar panel, their the power output varies from. The fence from the Panel surface is complete as it is obtained, the current of light falling on the same surface provides electricity in relation to the degree of magnitude. It is seen from this that a small amount of blockage of the surface part of the solar panels also occurs in their f.i.k. leads to decline.

However, wiping and rinsing them by cleaning their surfaces from various impurities there are problems. From practical observations it became known that pasga the built-in panel usually gets dirty faster than the top-mounted panel, and sometimes even when there is a weak rain, the surface from such rain is relatively less cleaned. According to the results obtained in practice, it is possible to make them from the rain in these cases it is easier to get dirty than to clean. But, the down-mounted panels surface parts relative to high-mounted panels it is much easier to clean and wash constantly. Maintenance of low-lying panels the display also has a number of amenities. It should not be forgotten that in general maintenance, the sun the power

generated by the panels is from conventional electricity as dangerous for the ghost. As a rule, solar panels are much less regular maintenance requires service.

### LITERATURE REVIEW

Outdoor pollution of the solar panel can be explained as follows; From the atmosphere, soil on Earth, technological processes and other environments the separation is pollinated under the influence of various homogeneous small light particles, as a general so to speak, the ascent and flight of these particles into the air with the help of a breeze because they the surface of the solar panels installed on the use goes ham and the panel dirt the surface. Of course, this soiling is falling on the surface of the solar panel causes sunlight to be blocked to some extent. From this in addition, contamination, dirt, dust, tree leaves and even bird droppings of the surface of the solar panels block the sunlight. . Occasionally birds solar panels can be landed. Landing a large number of birds on the edges of the Panel leads to rapid contamination of the panel. Fine dust of the solar panel we briefly refer to the contamination of the surface from the particles and various waste as pollination in the text.

Experiments have shown that-in the same mukhit, from dust of solar panels of different types installed in one place the degree of contamination will be the same. Research and practical experiments The AS-100 W was carried by solar panels. One solar panel the technical recommendation is as follows:

№	Voltage	Current power	Capacity	Size
1	$U_{\max}=18,2 \text{ V}$	$I_{\max}=5,49 \text{ A}$	W=100 Watt	67 X 100 cm

It is made up of a system of 36 groups of photoelements with 5 rows. Over time, this dust cover barrier becomes more and more thick, and the useful work factor of the solar panel is f.i.k. completely drops. For this reason, for the normal operation of the solar panel, it is necessary to clean and wipe their working surfaces from various pollinations and impurities more often, as well as wash them if necessary.

### CONCLUSION

In the processes of using solar panels in our country conditions, their surface parts are fast pollination and consequent significant energy losses occur. Hence the sun in the process of using panels, it was practically justified that the need to clean the working surfaces of the panel more often is one of the pressing problems. a comparative analysis was made of the negative and positive aspects of cleaning the installation of solar panels on the working site, that is, high and at ground level – pas from pollination. Including uncomfortable situations when keeping the surface part of a high-mounted panel clean < BR> The power generated by solar panels in maintenance is also it is as

dangerous as conventional electricity. very low regular maintenance of solar panels requires display.

Only when installing them in a working place, shading on the panels and quickly it was considered that areas free from polluting areas should be selected. . causes of pollination of the surface of the solar panel, the decrease in the extraction of electricity from them levels, methods of cleaning, wiping and washing the dirty transparent surface from pollination under different weather conditions and for the use of a small number of solar panels, the convenience of their installation is considered. Based on the results obtained and the work studied, the solar panel surfaces were given maintenance USLS.

Especially– when it is inconvenient to carry out the cleaning of the surface of the solar panel installed on the height from various impurities, that is, it is dangerous to work at the height-it requires a special device that performs washing operations automatically. The number of panels is large in the case, when cleaning them, the application of automatic manipulators will work well.

#### REFERENCES:

1. Phillip Hurley “Build Your Own Solar Panel” Generate Electricity from the Sun. 2006  
2000-2006 Good Idea Creative Services all rights reserver. Wheelock VT USA  
Copyright ©2007 Phillip Hurley and Good Ide ISBN-10: 0-9710125-2-0 ISBN-13:  
978-0-9710125-2-3
2. Solar II How to Design, Build and Set Up Photovoltaic Components and Solar Electric Systems by Phillip Hurley
3. Султанов Рузимаджон Анваржон Угли Рекомендации по выработке электроэнергии и компенсации потерянной энергии с помощью системы охлаждения электродвигателей // Вестник науки и образования. 2019. №19-3 (73). URL: <https://cyberleninka.ru/article/n/rekomendatsii-po-vyrobotte-elektroenergii-i-kompensatsii-poteryanno-energii-s-pomoschyu-sistemy-ohlazhdeniya-elektrodvigatelay> (дата обращения: 01.12.2023).
4. Usmonov Shukurillo Yulbarovich, Sultunov Ruzimatjohn Anvarjohn O‘G‘Li, Kuchkarova Dilnoza Toptieвна Research potential of energy saving pump unit and hydraulic network // Проблемы Науки. 2019. №12-1 (145). URL: <https://cyberleninka.ru/article/n/research-potential-of-energy-saving-pump-unit-and-hydraulic-network> (дата обращения: 01.12.2023).
5. Usmonov S. Y. Analysis of Working Modes of Well Pumping Equipment Electr //Central Asian Journal of Theoretical and Applied Science. – 2022. – Т. 3. – №. 11. – С. 119-125.

6. Yulbarsovich U. S., Nurillaevich M. N. FREQUENCY CONTROL OF POWER EQUIPMENT DURING SECONDARY STEAM GENERATION IN THE PRODUCTION UNIT //PRINCIPAL ISSUES OF SCIENTIFIC RESEARCH AND MODERN EDUCATION. – 2022. – Т. 1. – №. 6.
7. Yulbarsovich U. S. et al. MEASUREMENT AND CONTROL OF THE LOAD OF ENERGY DEVICES //Galaxy International Interdisciplinary Research Journal. – 2023. – Т. 11. – №. 4. – С. 663-666.
8. Yu U. S., Sulstonov R. A. NONLINEAR FEEDBACK CONTROL IN INTELLIGENT AC MOTOR CONTROL //Advancing in research, practice and education. – 2022. – Т. 9. – С. 188.
9. Усмонов Ш. Ю., Султонов Р. А. У., Кучкарова Д. Т. СИНТЕЗ АЛГОРИТМОВ ИНТЕЛЛЕКТУАЛЬНОЙ СИСТЕМЫ УПРАВЛЕНИЯ МНОГОСВЯЗНЫМИ ЭЛЕКТРОПРИВОДАМИ //Universum: технические науки. – 2022. – №. 1-3 (94). – С. 50-53.
10. Усмонов Ш. Ю., Кучкарова Д. Т., Султонов Р. А. Автоматические системы управления машин и агрегатов шелкомотания на основе энергосберегающего электропривода //Universum: технические науки. – 2021. – №. 12-6 (93). – С. 37-41.
11. Sulstonov R. A., Shermatov B. A. IMPROVING PRODUCT QUALITY BY REDUCING THE ENERGY CONSUMPTION OF ELECTRIC DRIVES IN THE SILK INDUSTRY //Экономика и социум. – 2021. – №. 11-1 (90). – С. 538-544.
12. Mukaramovich A. N., Yulbarsovich U. S. CALCULATION OF THE SPEED CONTROL RANGE OF AN INTELLIGENT ASYNCHRONOUS ELECTRIC DRIVE DURING REWINDING RAW SILK //ЭЛЕКТРИКА. – 2011. – №. 4. – С. 26-28.
13. Арипов Н. М., Усмонов Ш. Ю. Разработка энергосберегающего частотно-регулируемого асинхронного электропривода с вентиляторной нагрузкой //Электрика. – 2011. – №. 4. – С. 26-28.
14. Усмонов Ш. Ю. Частотно-регулируемый асинхронный электропривод с экстремальным управлением для вентиляторной нагрузки //Advances in Science and Technology Сборник статей X международной научнопрактической конференции, Москва:«Научно-издательский центр «Актуальность. РФ. – 2017. – С. 36-38.