British Journal of Global Ecology and Sustainable Development
Volume-16, May, 2023
ISSN (E): 2754-9291

INCREASE THE USEFUL WORK COEFFICIENT OF PHOTOELEMENTS BY ACTIVE COOLING

Umarov Shukrulloxon Sherali o'g'li,
Madrahimov Davlatjon Abdulxay o'g'li,
Azamov Islombek Rustamxo'ja o'g'li
Xudoberganov Mirjalol Ortiqali o'g'li
TDTU Qo'qon filiali o'qituvchilari
Мобиль рақами: +998936409539
Электрон почта : Umarov.shukrulloxon@mail.ru

Abstract

Several ways to increase the useful working coefficient of photoelements were studied and it was found that cooling us in conditions is the most effective method. Given that the factors that reduce the useful working coefficient of photoelements are dust and temperature, cooling the photoelements with water and washing the dust accumulated on the surface of the solar panel through manashu water has worked highly.

In desert areas, a certain portion of the water supplied by autonomous energy is used to cool fquyosh panels and wash their dust, thereby achieving energy efficiency.

The results of the experiments are shown in the tables below. The experiment was carried out on the AS 100 P solar panel.

By selecting two homogeneous solar panels and cooling the panel with one turning the water behind the other in a natural environment, the results showed that the panel cooled with water was 10% higher than the non-cooled panel.

This saw an increase in the temperature of the water developed by the cooling of the panel.

If we use this proposal in mini cafes, it is also possible to meet the demand for hot water, covering the electricity that the cafes want.

The following tables and graphs analyze the results and studies conducted.

1-jadval. Results from Table

Solar Panel Type	O'lchanayotgan parametrlar	Time of experience	Results obtained
AS 100 P Before cooling .	Harorat t[°C]	10:00	55
		11:00	56
		12:00	57
	Kuchlanish [was] *U*	10:00	19.9
		11:00	19.9
		12:00	19.85
	Tok kuchi I [a]	10:00	5.72
		11:00	5.72

		12:00	5.73
	Quvvat [vatt]S_{max}	10:00	113.8
		11:00	113.8
		12:00	113.7
AS 100 P After the cooling .	Harorat t[°C]	10:00	25
		11:00	26
		12:00	25
	Kuchlanish [was] U	10:00	21.9
		11:00	21.9
		12:00	22
	Tok kuchi I [a]	10:00	5.71
		11:00	5.74
		12:00	5.71
	Quvvat [vatt]S_{max}	10:00	125
		11:00	125.7
		12:00	125.6

The cooling was carried out through two different shapes of cooling channels at the rear of the module. A small percentage of the nanoscience in cooling water has been shown to increase the temperature difference of the module surface. For a concentration of 0.1% weight. Nano liquid and liquid flow was 0.006 kg/s, with temperature drops of about 4.5°C compared to water cooling. A strong influence of the flow channel shape on the cooling intensity was observed. The efficiency of the cooling of nanotubes has been proven to be largely dependent on the nanosyscular composition and local flow mode. Sardarabadi and others. [40] The 40 W-powered polycrystal photoelement used copper pipes to cool the modulus from the rear. The cooling liquid was a two nano liquid containing particles of water and silicon. The particle content was 1.0% and 3.0% of the weight, respectively.

The maximum liquid stream was 0.011 kg / s. Nanosuality with a weight of 3.0% was shown. the particle increases the efficiency by about 1.5% compared to cooling the water. The approximate surface of the 40 W photoelement module is 0.35 m2.

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