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# IMPROVING THE REMOTE CLIMATE CONTROL SYSTEM BASED ON SOLAR COLLECTORS

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## ABSTRACT

Experiments have shown that the new controller required in practice the function of automatic storage of the CDcard module, both in the laboratory and in industry and the economy. Another project parameter is the remote control system, which we used to exchange data via the simplest mobile Bluetooth module. This solution is the first step in remote control technology. In the future, the extension of the distance opened a wide way to further improve management control.

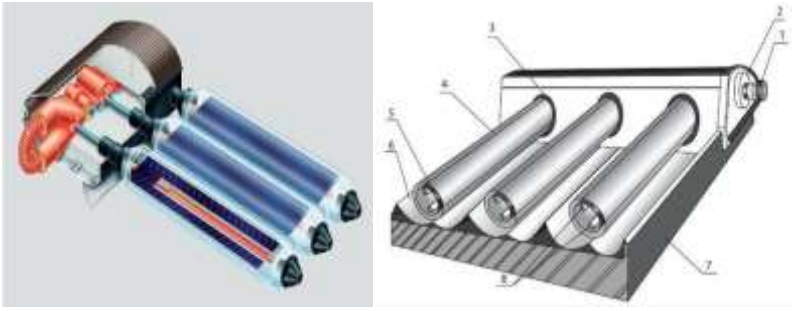
**Keywords:** Controller, Solar Collector, CDcard, Distance Extension, Photoelectric Property, Control Sensor.

## INTRODUCTION

Solar collectors have special controllers to constantly monitor its basic parameters temperature, water level and other indicators. These controllers can perform additional functions in addition to control. Suppose the water level falls below the desired level, the controller detects this and starts a special engine. The engine in turn pumps water into the collector tank and the controller stops the engine when it reaches the required level. we can control the maximum level and the minimum level through the controller [1]. This means that the controller not only monitors the solar collector, but also controls it on a regular basis. in addition, in cold weather, when the sun, light hours are low, or at night the water temperature seems to be close to zero on the Celsius scale, the controller turns on a special electric heater. This method works in emergencies

## REFERENCES AND METHODOLOGY

consists of parts consisting of an absorber, a transparent layer and a layer of heat protection. The absorbing surface is connected to the heat transfer system. It is coated with a black color or a special compound that is needed to increase efficiency. The transparent surface is usually made of tempered glass or polycarbonate mixed glass with low metal content.



a) b)

Figure 1. a) General view of the vacuum solar collector; b).

scheme of vacuum solar collector; 1 Connect; 2 - Silicon layer; 3 - EPDM layer; 4 - Vacuum tube made of impact-resistant glass; 5 - Aluminum absorbing surface with high selective layer; 6 - Kozguli reflector, 7 - Collector outer shell; 8 - Heat on the absorbing surfaceU-shaped tube designed to receive.50% of the elements used to design the controllers of the solar collector are delivered through imports, the rest is done in the manufacturing process. the shortage of hot water in the region, and the possibility of increasing and privatizing high-quality, low-cost heat sources for the population through the introduction of additional heating systems in winter [2].

## RESULTS AND DISCUSSION

Advantages of the expected solar collector control controllers over practical controllers:
1) Possibility of recycling in case of failure,
2) Ease of use of Work Software and Control Panel,
3) Possibility to add additional projects,
4) Possibility to add additional programs
5) Ability to connect to a computer,
6) The ability to extract the performance in the form of a diagram,
7) Remote control, data acquisition, data transmission capability,
8) The microcontroller in the project can be used for other purposes

It can be installed in residential areas, public and private organizations, public places and other places where a heat source is needed. 10-15 people can be employed in production. The startup project can provide 5-6 new jobs [3].Existing controllers of solar collector Import price unit is available from 700,000 to 1,000,000 soums per unit The controller unit, which is planned as a local startup project, is expected to be from 500,000 to 700,000 soums.
optimization of the solar collector collector (reduction, prolongation of service life, ease of use) Increase the maximum heat index of the solar collector from 70 C to 100 C.

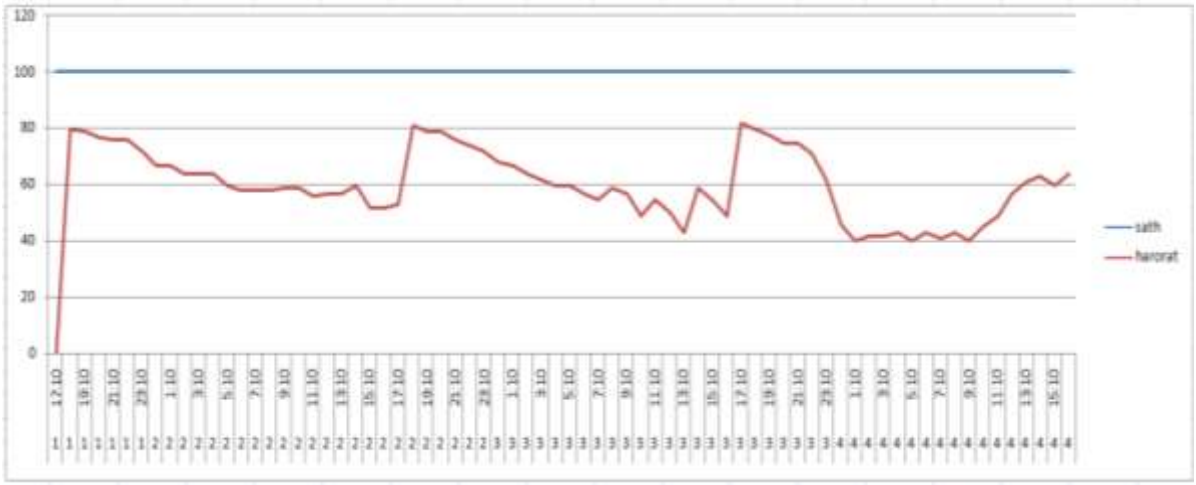


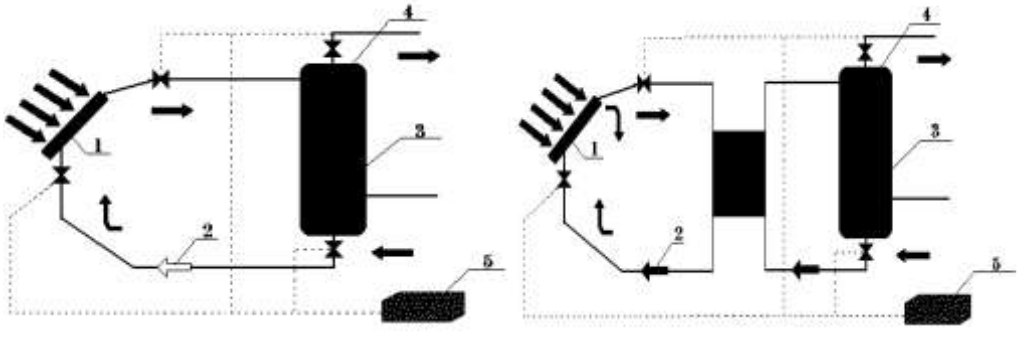

Figure 2. Daily results in the project of solar collector controllers

In the project controllers, the daily results of the cake show that the temperature indicator shows the maximum value of the liquid for the time of the vertical rise of the daily sun.

In the standard solution to increase the efficiency of the collector, copper is used as the absorbing surface, because its thermal conductivity is very high, and sometimes aluminum is also used as the absorbing surface. although the thermal conductivity is twice as low as that of copper, the power reserve of aluminum metal is high. Hence, this metal has the property of storing the energy coming from the heat transfer.

The difference between solar collector controllers

In the simplest types of this device, the water circulation occurs naturally due to the temperature differences between the collector and above the tank accumulator. In a slightly more complex type, it will have a small portion filled with water or antifreeze. in this part a pump is connected for the circulation of the heat carrier, which can also be installed from the tank to the collector or inside the building [3]




a) b)

Figure 5. a) Device diagram of a single-circuit collector; b) Device diagram of a two-loop collector

1- Solar collector; 2 - Pump; 3- Bak-battery; 4 Control sensor; 5 Control and management device; 6- Heat exchanger. the disadvantage of this device is that the presence of additional energy consumption for the operation of the fan leads to an increase in the cost of this system. however, if the ambient temperature does not exceed 17°C, the air circulating bilaterally from the plate

absorbing surface will operate efficiently without excessive heat loss. The main advantages of air collectors are their simplicity and reliability. if used carefully, it can last 10 to 20 years. In addition, the exchange of the heat carrier element is not observed because the air does not freeze.

## CONCLUSION

as technology advances around the world, the opportunities created encourage us to take a fresh look at electronics. Thus, a number of technical parameters were tested during the redesign of the existing solar collector controllers. as a result, a number of technical parameters have been improved during the management controls project software restructuring process. For example, before designing such equipment, it was important to maintain the necessary parameters during the testing process. now the function of automatic storage of the CDcard module in the new controller was required in practice, both in laboratory conditions and in industrial and economic fields. Another project parameter is the remote control system, in which we used the data sharing function via the simplest mobile Bluetooth module. Such a solution is the first steps in remote control technology. further extension of the distance opened a wide way for further improvement of management control. Because the most important thing was to put the project program into working condition and successfully test it.

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