

Experiment 5. Creating PCM capsules and examining their effectiveness in the server cabinet

It has been determined that the paraffin wax mixture created in Experiment 2.3 can reduce the server cabinet to the desired temperatures. Therefore, it was decided that this material should be used for cooling the server cabinet.

Plastic bags with compartments were used to create the PCM capsules. The paraffin wax mixture was filled into the bag and fixed on the inner surface of the server cabinet.



Plastic bag with compartment filled with paraffin wax

All cells of the plastic bags with compartments are filled with paraffin wax and all 5 surfaces of the server cabinet are covered with these PCM capsules.



Fixing PCM filled capsules to the server cabinet

As you can see in the picture above, only 1 cell is filled, this process has been done for testing purposes only. Then all the cells were filled with PCM and the inner surface of the server cabinet was coated with them.

Thermal tests will be carried out to examine the performance of the product. The ambient temperature will increase with the light bulb placed inside the cabinet. The effect of paraffin wax on ambient temperature will be examined.