AGP-3

Results of the long-time testing of the new variant of the analog of thermogenerator of Rossi

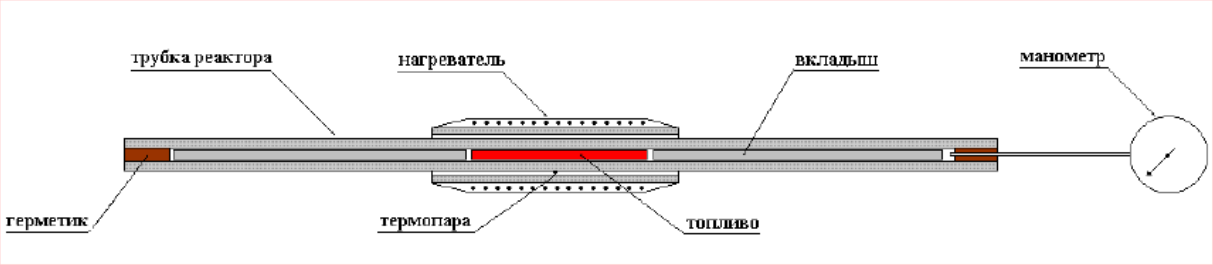
By Alexander Georgevich Parkhomov.

The experiments with the devices similar with Rossi's thermogenerator- about which I spoke at the previous seminars have shown that the mixtures of nickel and aluminum hydride heated in a hermetically closed ceramic tube to temperatures over 1100 C effectively produce heat, significantly more than the used energy.

But the working time of these reactors is too short to produce measurable isotopic changes and also to show that the release of the excess heat is caused by cold nuclear transmutations.

For achieving longer continuous work durations we had to change much the construction of the reactor. First of all we had to renounce to the calorimetry used based on the measurement of the quantity of evaporated water because it is difficult to make all day addition of water.

The construction of the reactor for long time work.



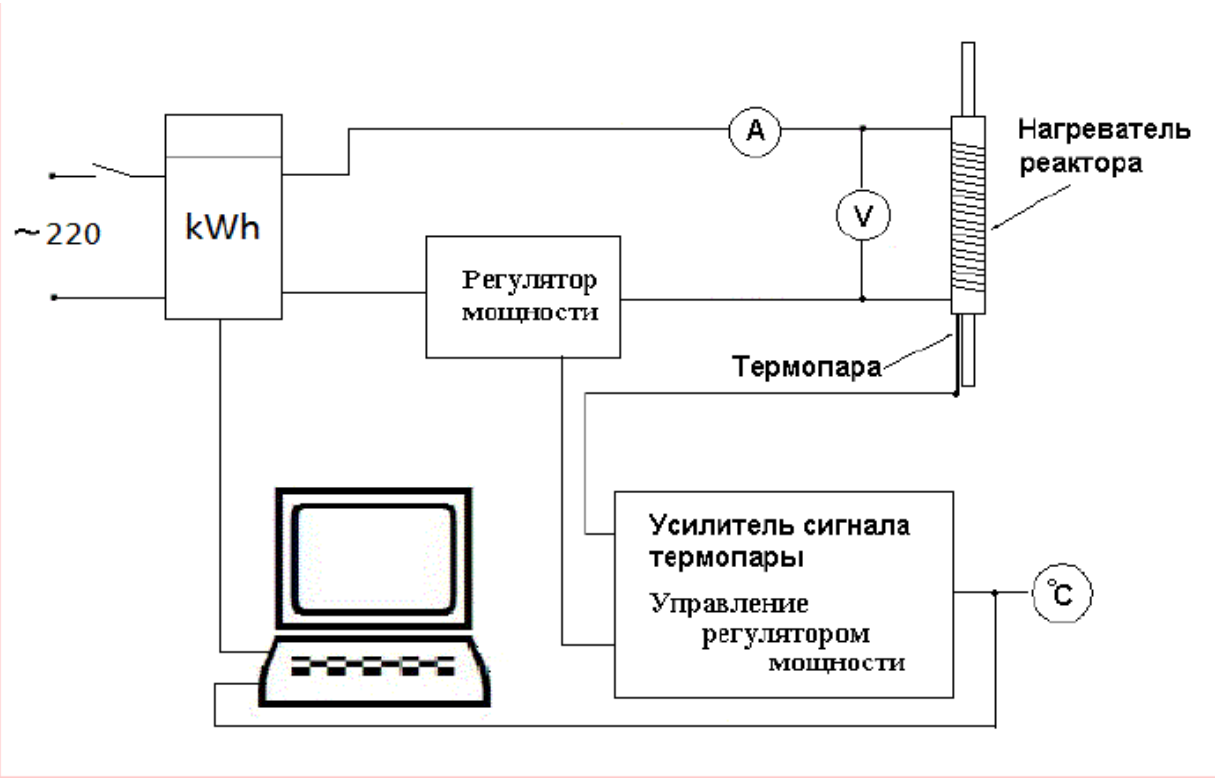
The tube of the reactor aimed for long time work is 29 cm long and so only its central part is heated. Due to low thermal conductivity of the ceramic he ends of the tube are not very warm (at 1200 C in the center the ends are not warmer that 50C; this allows the use of epoxy adhesive for closing the tube.

For heating we have used resistor Х23Ю5Т (Kanthal A1) that is working up to 1400 C.

The fuel mixture (640 mg Ni + 60 mg $LiAlH_4$ is in a container of thin stainless steel. For displacing the air from the tube we have used ceramic filling/liners.

The manometer with a limit of measurement of 25 bars is connected with the reactor with a thin tube of stainless steel.

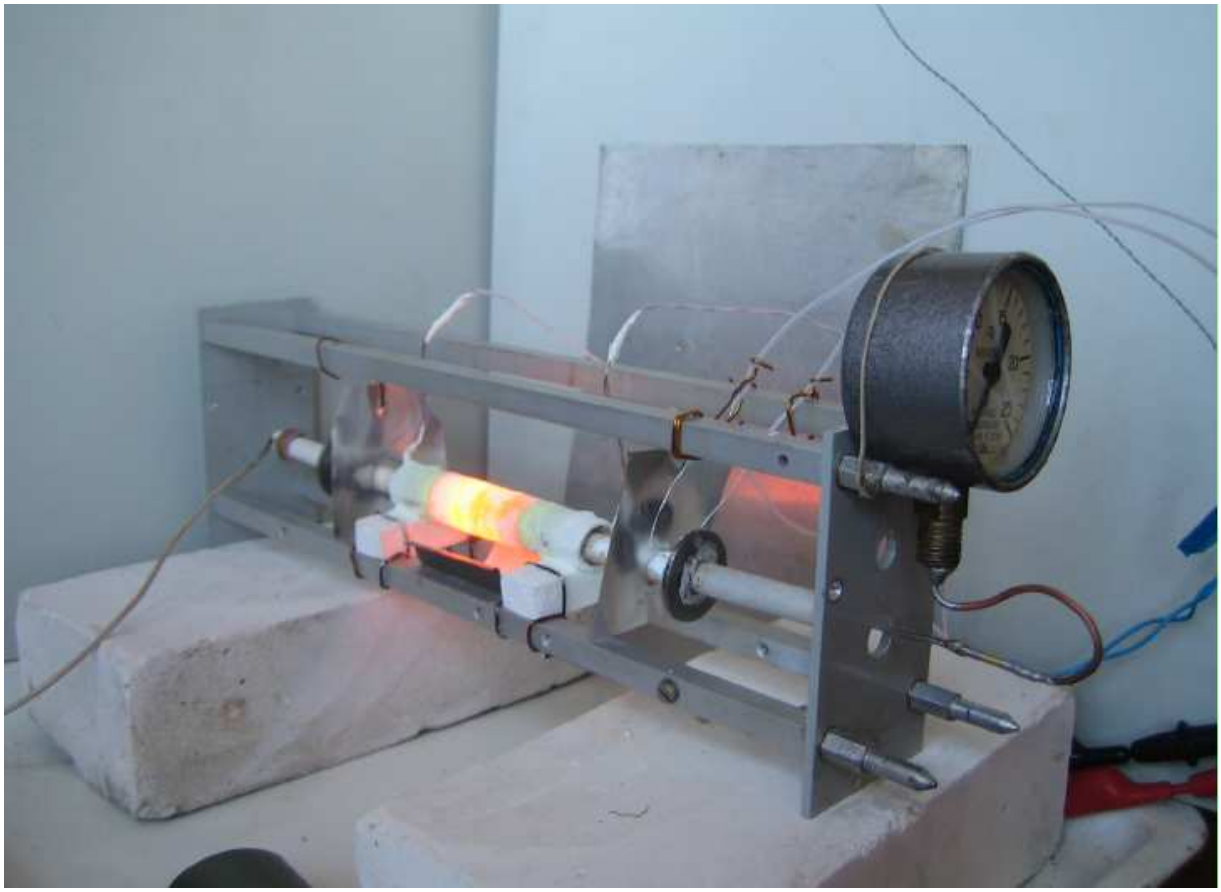
Power and control

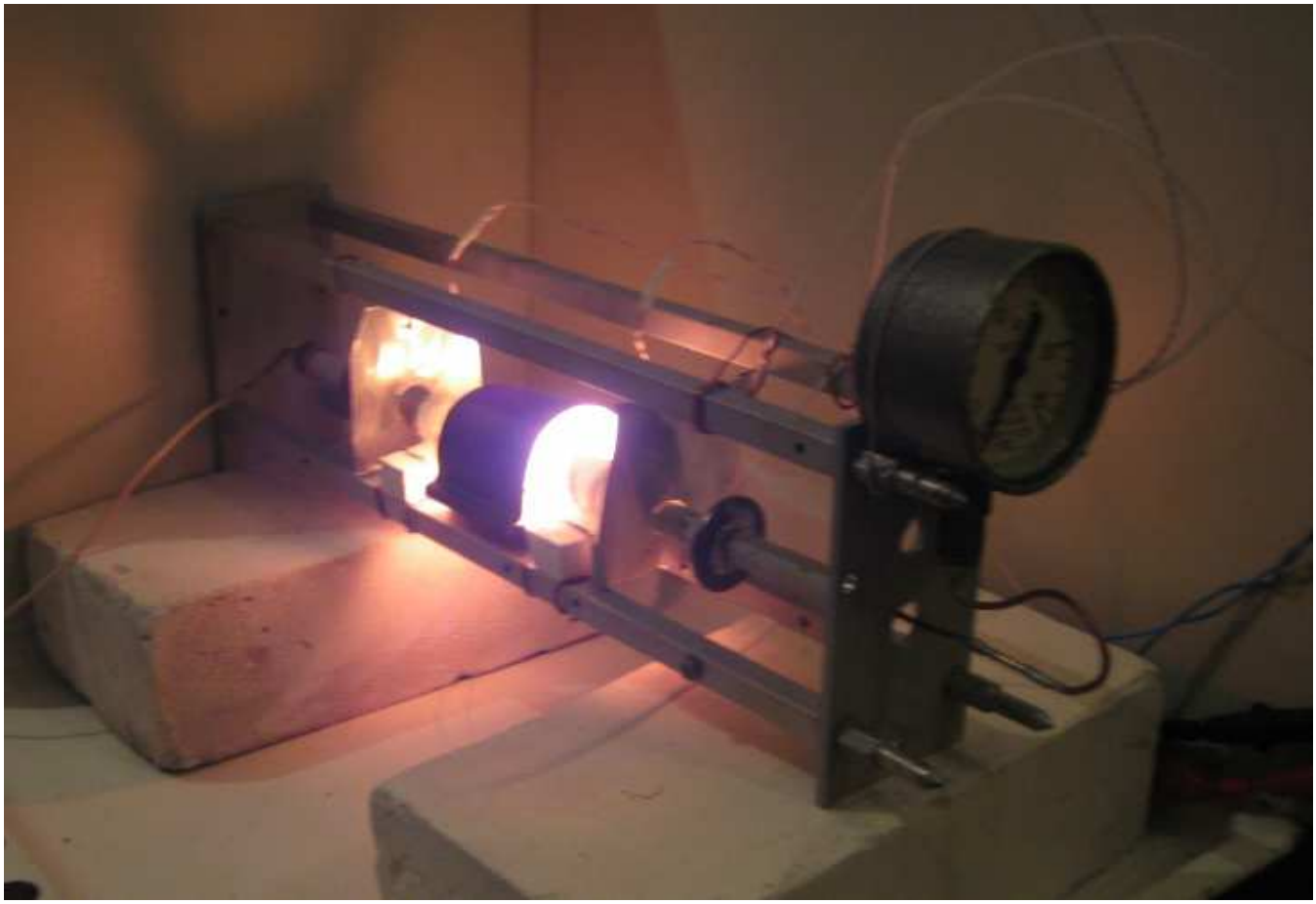


Thermocouple output is adjusted so as to maintain the desired temperature.

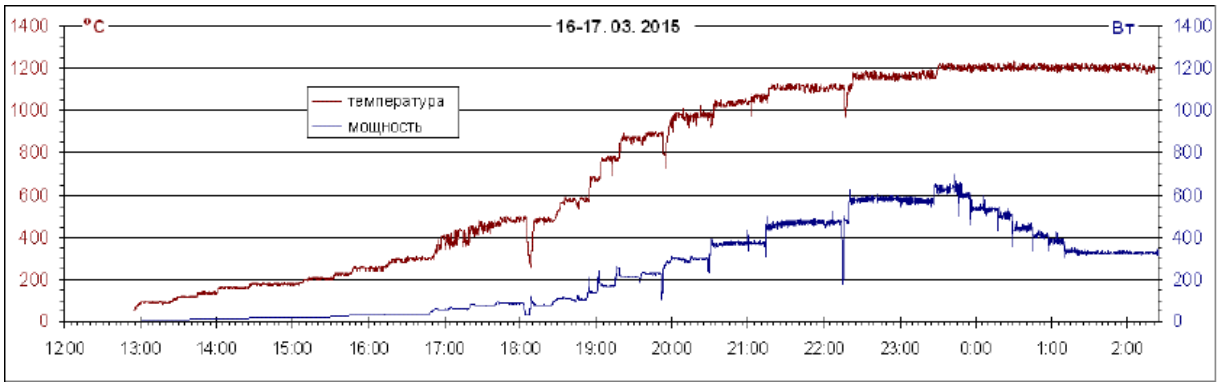
Ras stroke power and pace eratura reactor recorded by the computer.

Reactor during testing



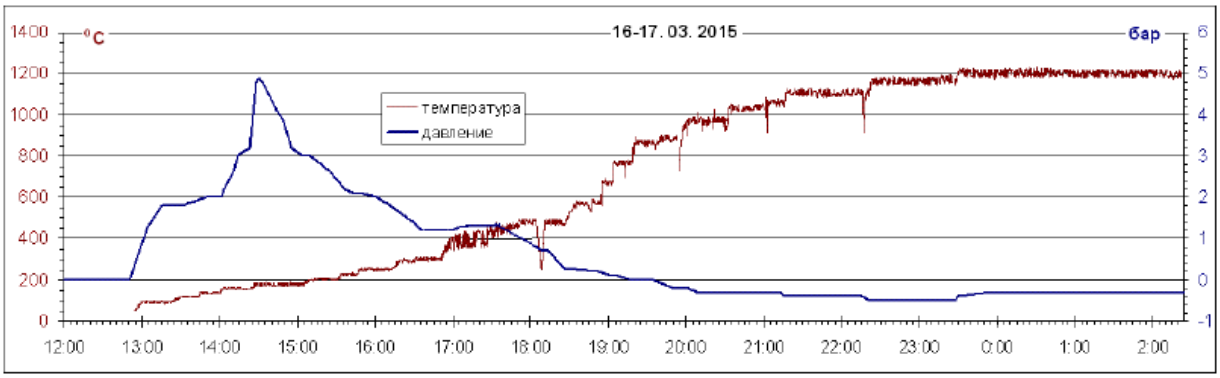


Heating of reactor to working temperature.



The temperature of 1200C at the surface of the working tube was attained in 12 hours of stepwise increase of power of the electrical heater up to 630W. After this the power necessary to maintain the temperature of 1200C decreases in 1 hour to 330W

Measuring pressure during the heating process



The increase of pressure starts around 100 C. Maximum pressure of app. 5 bar was attained at 189C after this pressure starts to fall and at 900C is smaller than atmospheric. Greatest decrease (0.5 bar) at 1150 C then starts to increase slowly to atmospheric.

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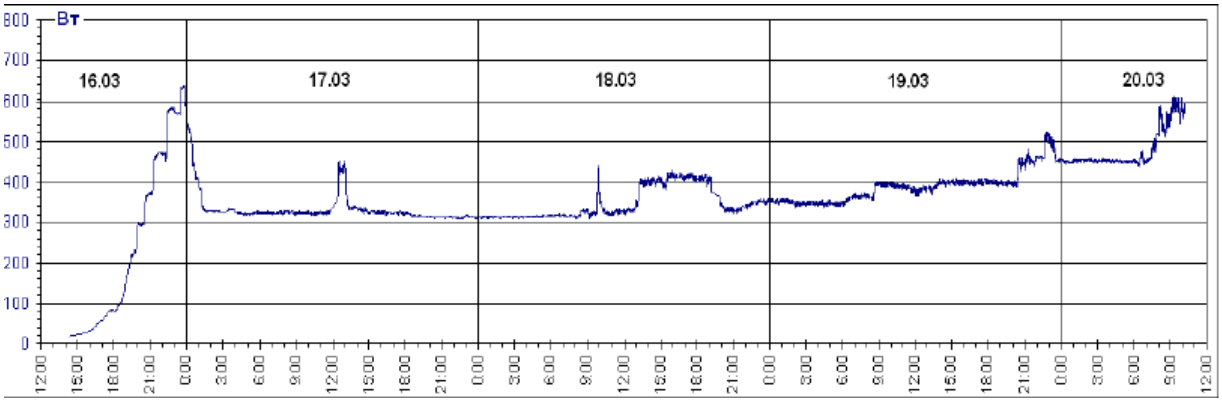
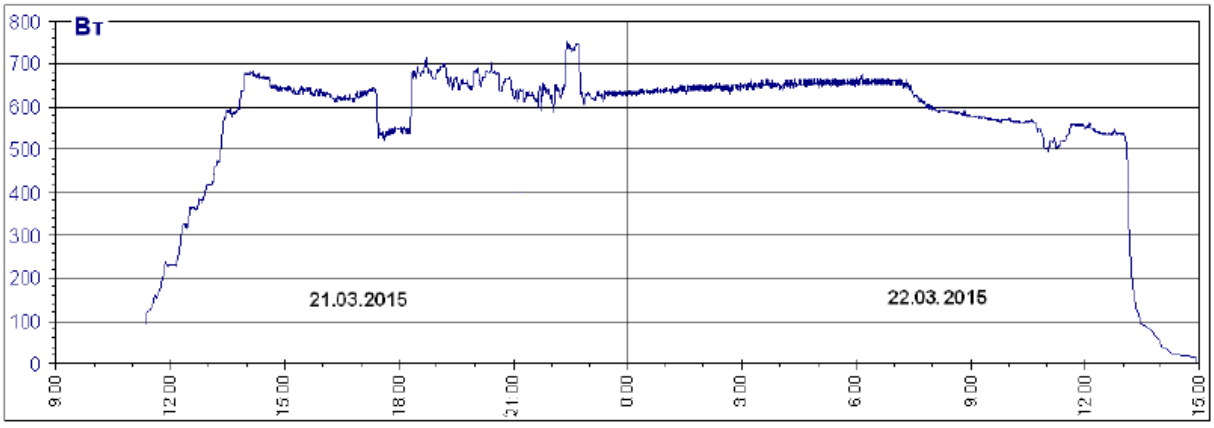
The power of heating during almost 4 days till the burning out of the heater



For almost 3 days the power necessary to maintain the temperature of the reactor tube at 1200C was in the limits of 300-400W. Before the burning out, the power started to increase and at burning out it was at 600W

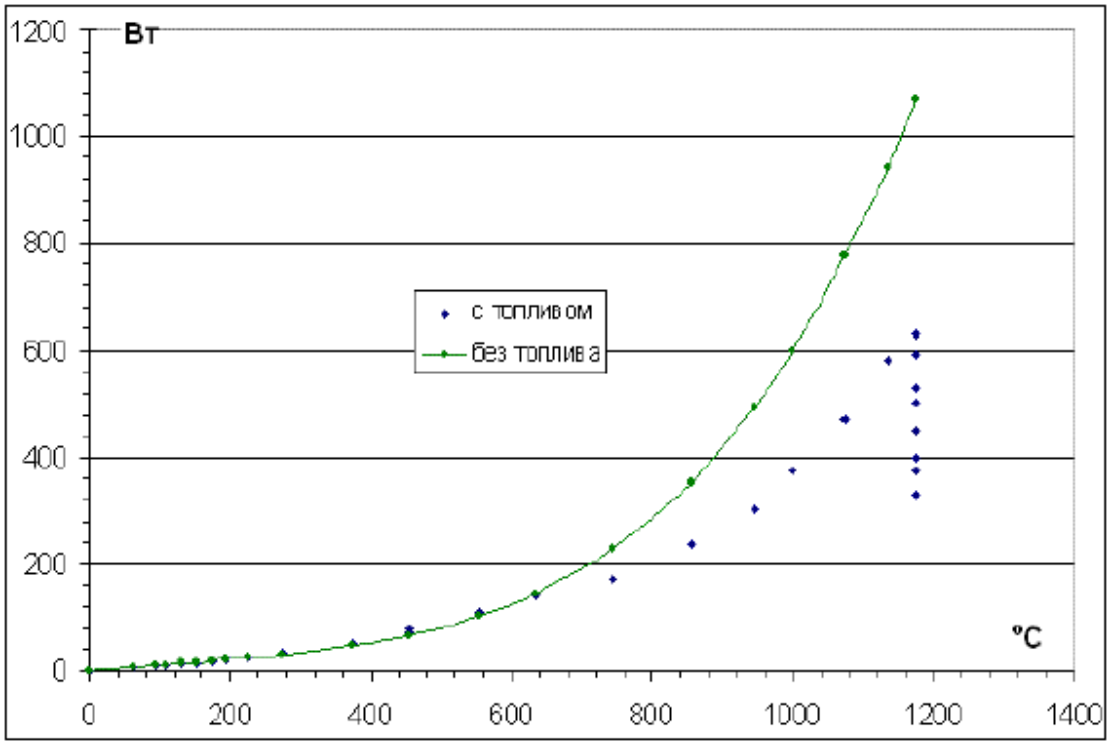
The burning out was caused by stepwise oxidation of the resistor.

Working of the reactor with the new heater



The temperature of 1200C was maintained with using the power of heater of 500-700W.

The power necessary for maintaining the given temperature.



At temperatures over 700 C the reactor with fuel consumes less electrical energy than that necessary for the reactor with no fuel. This shows the presence of a heat source besides the electrical heater.

For heating to the temperature of 1200 C the power necessary for reactor with no fuel is 1100 W, for reactors with fuel first we need 650W and after an hour 300- 330 W.

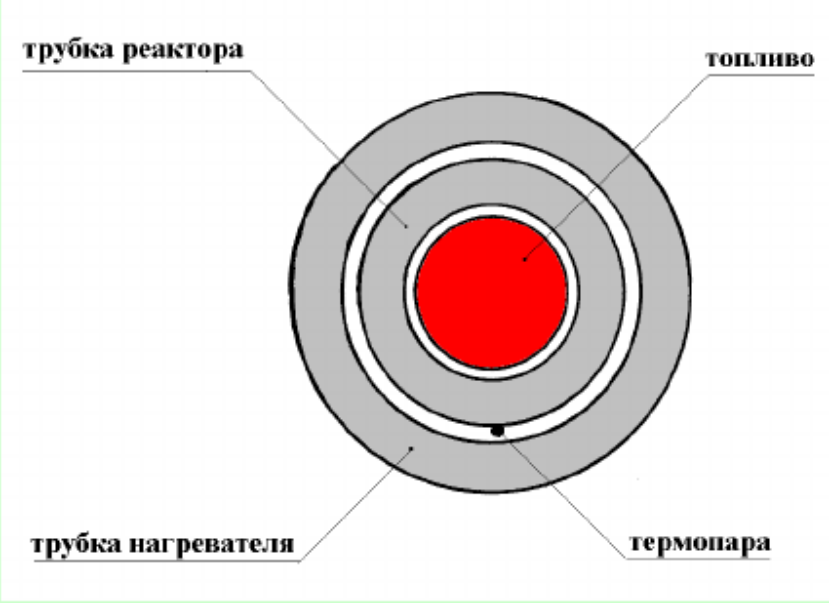
From this we can evaluate that the excess heat is 800W. The thermal coefficient COP is 1100/330= 3.3

But this is only a rough estimate not considering the differences between processes of thermogenearion with and without fuel.

With no internal heat sources the temperatures outside and inside are the same and the temperature measured by the thermocouple is equal with the temperature of the surface of the heater.

When the reactor is working with fuel it start a thermal flux from inside to outside and a gradient of temperatures appears.

For this reason the temperature measured by the thermocouple is higher than the temperature of the surface of the heater.

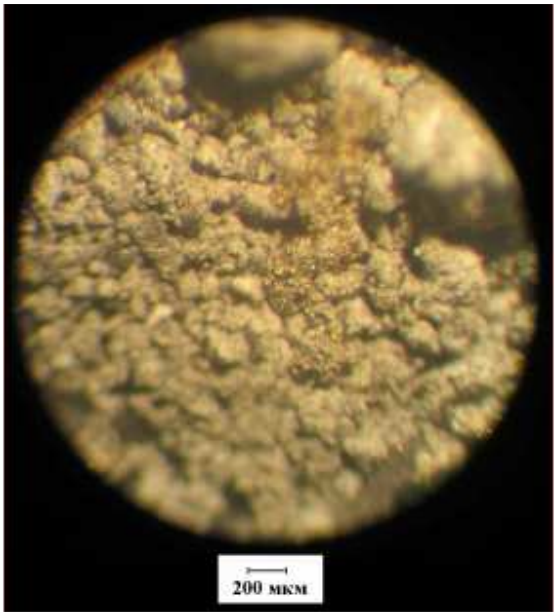


At the temperature of 1200 C, near to the thermocouple the temperature of the surface of the heater. Thus, the reactor is producing only the heat necessary for attaining the temperature of 1070 C with no fuel, that is 800W and not 1100.
Taking this in consideration, the thermal coefficient COP+800/330= 2.4.

Container with fuel after extraction from the tube of reactor.
On each side are the ceramic inserts.

Fuel after extraction of the container. 

Image of the used fuel at optical microscope.



CONCLUSIONS

1. The apparatus worked continuously for more than 3 days, producing more than twice as much as the applied electrical energy. 50 kWh or 18MJ were produced in excess of the electrical energy expended. This amount of energy could be obtained by burning 350g of petroleum products.

2. The reactor chamber pressure during slow burning was relatively low (in this experiment up to 5 bar)

3. The used fuel had the appearance of soft droplets of golden color mixed with grey powder.

4. The resultant used fuel mixture was sent for analysis of atomic and isotopic composition. But the results, unfortunately, have not yet been received.