# EFFICIENT ELECTRICITY TRANSFORMATION INTO HEAT

# WITH QUANTUM PLASMA GENERATOR

**Main advantages:**

1. There is no pollution of the environment from harmful gases and radiation emissions.

2. Use less energy to get a unit of output gigacalories or megawatt hours.

3. Possibility for reconstruction of previously built capacities for hot water and steam with Quantum heat sources and their further operation with improved energy efficiency, without harmful gas emissions.

**Field of technology**

The existence and development of life on our planet is due to ENERGY. Currently, the only sources of energy are fossil fuels, nuclear energy and, to a lesser extent, the use of solar and wind energy. The rapid development of economies and new technologies are beginning to require new energy sources with different characteristics and qualities. Fossil and nuclear resources, in addition to causing damage to nature and climate, are increasingly causing damage to people, and they are gradually depleting. Humanity is facing serious global consequences and catastrophes.

All these global problems place before us the obligation to look for new energy sources to replace the conventional ones used so far, to replace the existing fuel farms of the existing power plants and most importantly not to cause all these harmful consequences for NATURE AND PEOPLE!

Such a source is the receipt, use and application of quantum energy with the necessary parameters - completely safe for the environment and for humans.

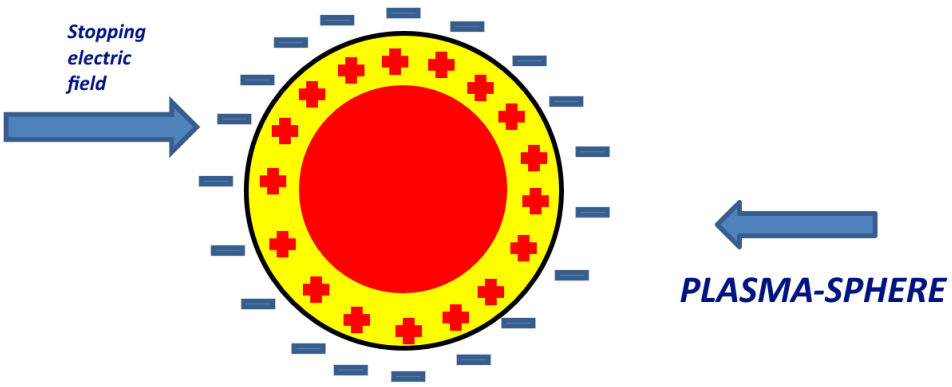
We offer a variant of a quantum generator for replacement of the fuel farms of the operating power plants and facilities.

**Technical essence of the utility model**

The task of the utility model is to create a method and a device to replace the main modules of combustion plants related to the generation of heat with quantum generators that transfer heat through the air.

The solution is achieved by heating air that comes into contact with a bulk plasma excited to various states to emit quantum energy. The most successful geometry, with the best heat transfer per unit energy, is the sphere. Therefore, let us conditionally call the object we create - **PLASMA SPHERE**.

Pyotr Kapitsa's experiments are dated as early as 1955, when he created various gas discharges in a quartz vessel filled with suitable gas such as helium, deuterium and even air by means of high-frequency generators. In these experiments, is created plasma, which has its own temperature, density, degree of ionization and many other parameters. The volume of the vessel was completely ionized, reaching a density of 1018 particles in 1 cm3. Plasma temperatures reach 1 million degrees Celsius. The quartz vessel does not melt because a double electric layer is created at the ultrahigh-frequency discharge boundary, which reflects the fast electrons. It is due to the presence of this double layer that the plasma is preserved.




When the geometry of the quartz chamber approaches a sphere - this kind of electric ring gives the contours of our PLASMA SPHERE.

**The field that repels fast electrons is a powerful spherical electric field. Of course, under certain conditions it can be overcome:**

1. **Electromagnetically - e.g. with the pulses of suitable radar magnetrons;**
2. **Electrically - by introducing on the periphery of the sphere of powerful pulses from high-power capacitor banks;**
3. **By mechanical means - with the supply from the outside of air jets of a certain intensity;**
4. **By increasing pressure in the working chamber, etc.**

**In this way, contact with the high plasma temperatures is enabled, whereby the air flow can be heated to different degrees and transfer this temperature outside the quartz chamber. In all cases, when an additional flow of air brought in from outside to come into contact with the high-temperature plasma occurs, ADDITIONAL IONIZATION occurs in the above-mentioned PLASMA SPHERE. Let's call this EXCITATION OF THE PLASMOSPHERE.**

The excitation is achieved in several ways that can work together if necessary:

1. By means of different pulses of radar magnetrons - designated as R1 R2 R3.

2. By means of electrical impulses supplied by a powerful capacitor bank.

3. By means of a controlled air stream - directed to the core of the plasma sphere.

4. By changing the pressure in the working chamber.

5. By controlling the power of the various magnetrons, etc.

Given the need to create an installation that will operate in a continuous 24 hour mode, going through different modes and states - we propose the creation of a Quantum Generator with a variable excitation algorithm and mode of operation with PLASMA-SPHERE.

Image 1.1 shows a block diagram of the generator. The actual generator is located in the executive part. An important part of it are the magnetrons as actuators and we must immediately say that they are 2 types: basic magnetrons M1 M2 M3 - operating at a frequency of 2.45 GHz - they are 3 in

number and are arranged in a circle every 120 degrees. And next to them are 3 more excitation magnetrons, R1 R2 R3 - operating at 9.4 GHz.

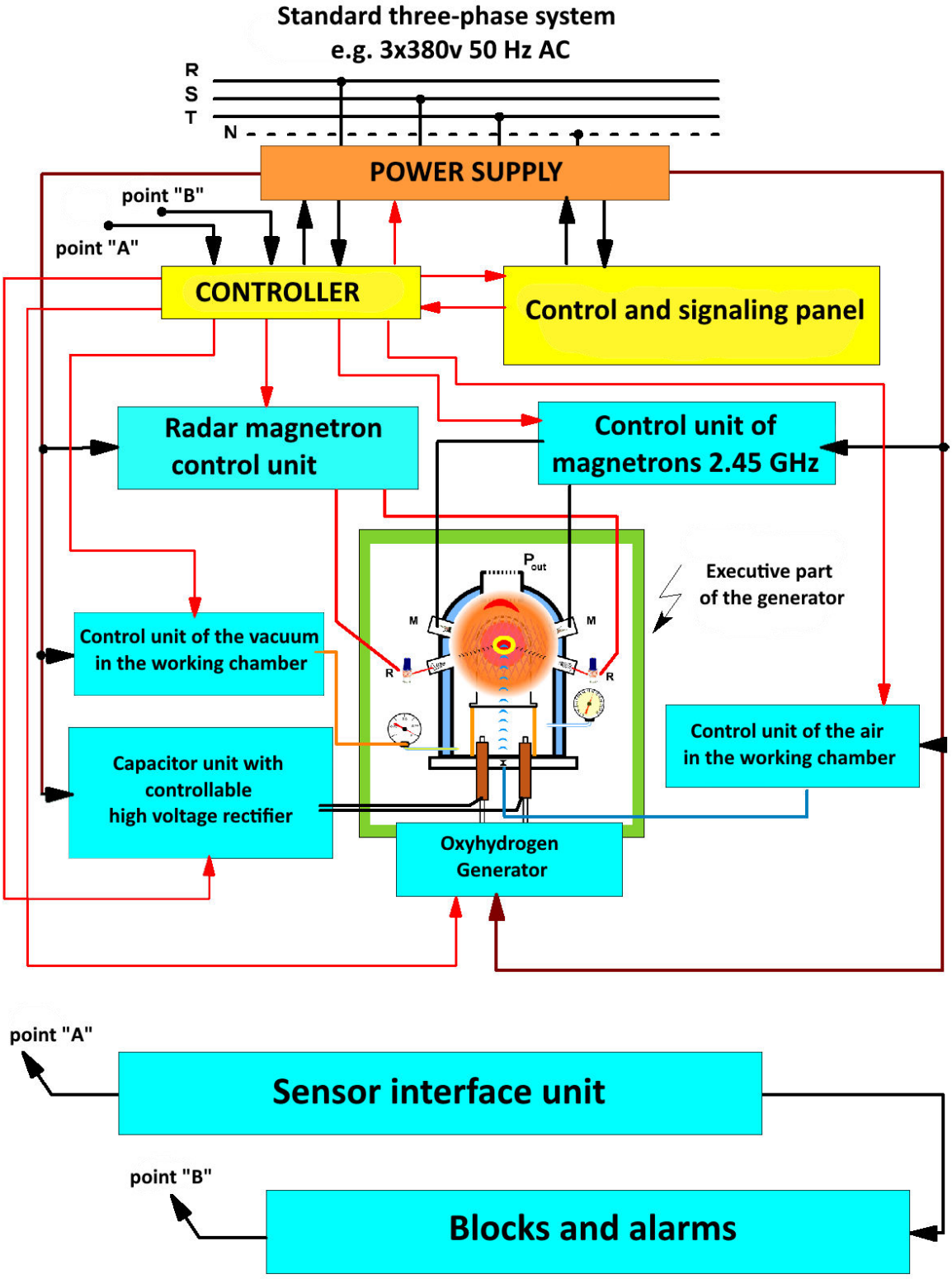



Image 1.1

All processes are controlled and managed through a controller, which is programmed by a control panel. The controller makes decisions according to information from a sensor unit that monitors a number

of temperatures, pressures, voltages, currents, power, etc. and of course depending on the power set by the user. Naturally, the controller can be managed and monitored remotely via a standard network interface, it contains memory for recording all events during operation.

The direct control of the magnetrons is performed by separate blocks.

The circuit also includes an oxyhydrogen generator with the main function to switch current pulses from a capacitor block composed of special high-power capacitors (100,000A, 22000V). Finally, let us mention the air and vacuum control units in the working chamber. These units control a vacuum pump and a compressor with the required parameters.

Once the required power has been supplied, the power generator must create a PLASMA SPHERE. For this purpose it is necessary to carry out a rapid initial ionization of air in a pre-built working chamber. Here's what it should look like:

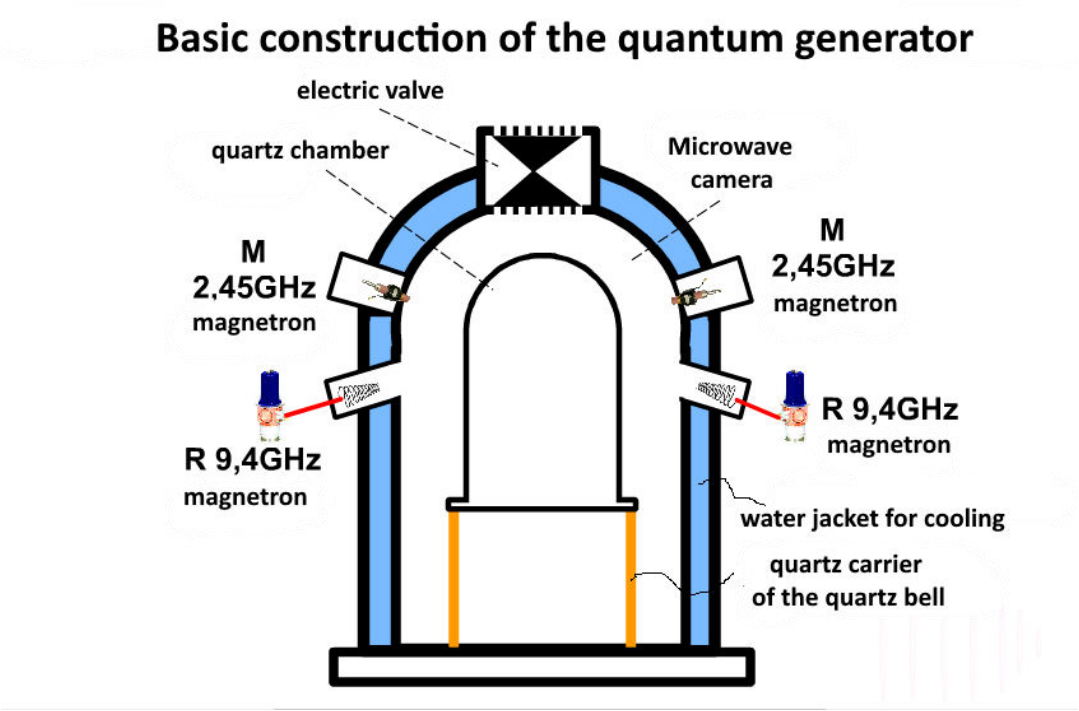



Image 2.1

It is a massive cylindrical structure in the body of which is built a cooling water jacket (marked in blue). At the upper end there is a special electric valve, which closes when it is necessary to vacuum the microwave chamber - occupying the main volume of the generator.

The central role is played by the quartz bell. The PLASMA SPHERE is created in it. A magnetron unit is built into the upper part of the housing to create different conditions for ionization and impact on the air in the working volume. The magnetrons are controlled by the main controller, depending on the parameters of the air in the working volume.

The easiest way to create PLASMA is to temporarily vacuum the chamber with a vacuum pump. Then the air is drawn to a state of -875mBr. The diagram of the generator is supplemented in the following image:

Image 2.2 (Image 2.2.1 is a top view - horizontal section of the generator).

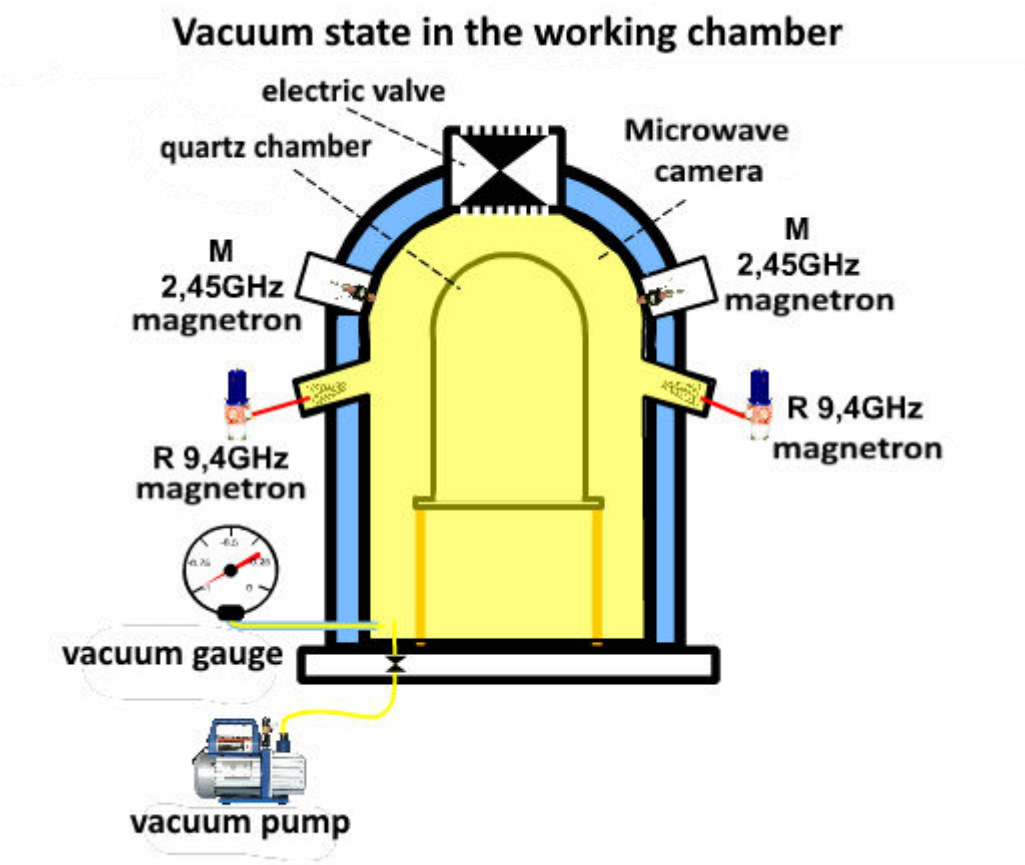



Image 2.2

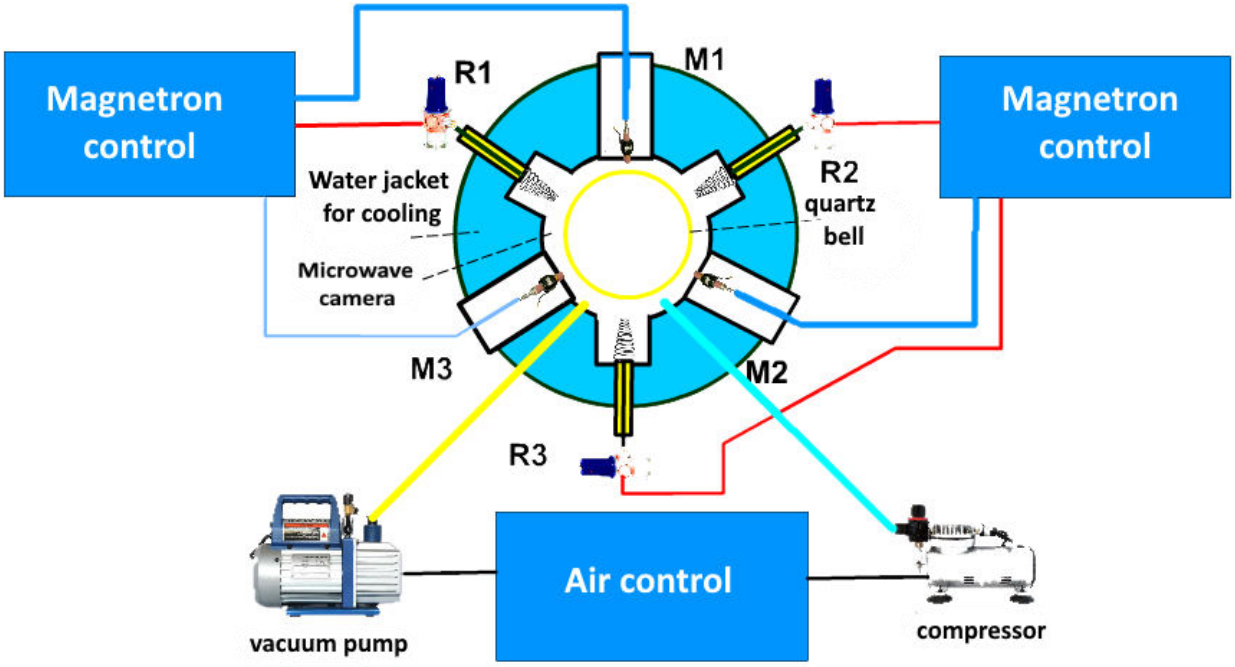



Image 2.2.1

The quartz bell turns into a PLASMA SPHERE.
But first we come to the following image:

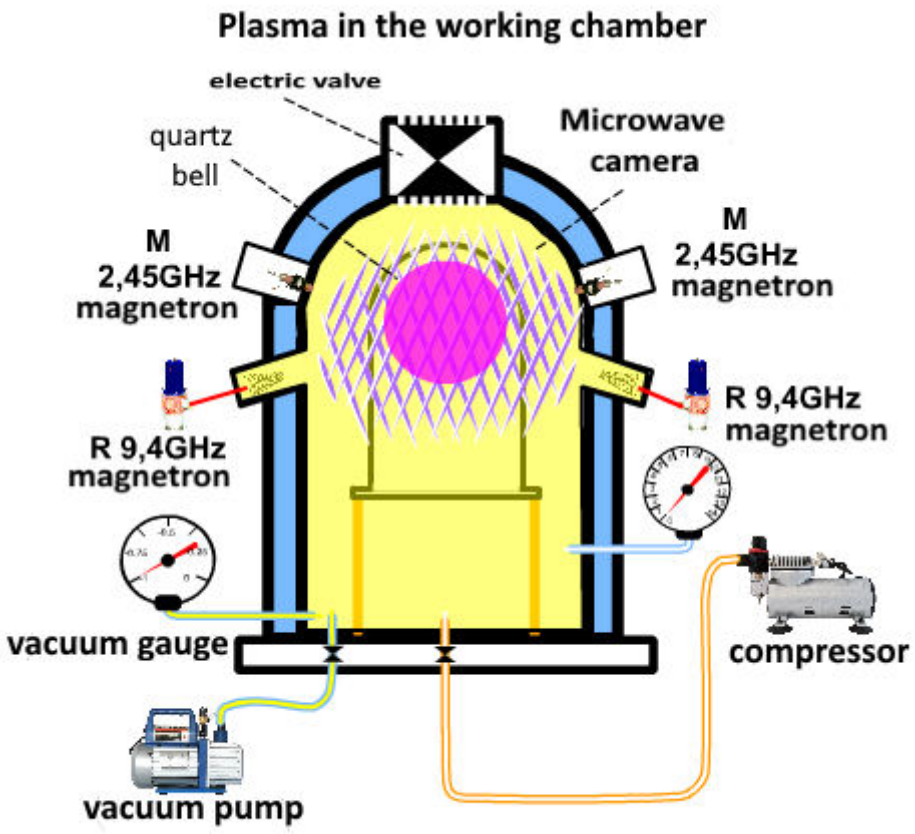



Image 2.3

**And this is a view from above.**

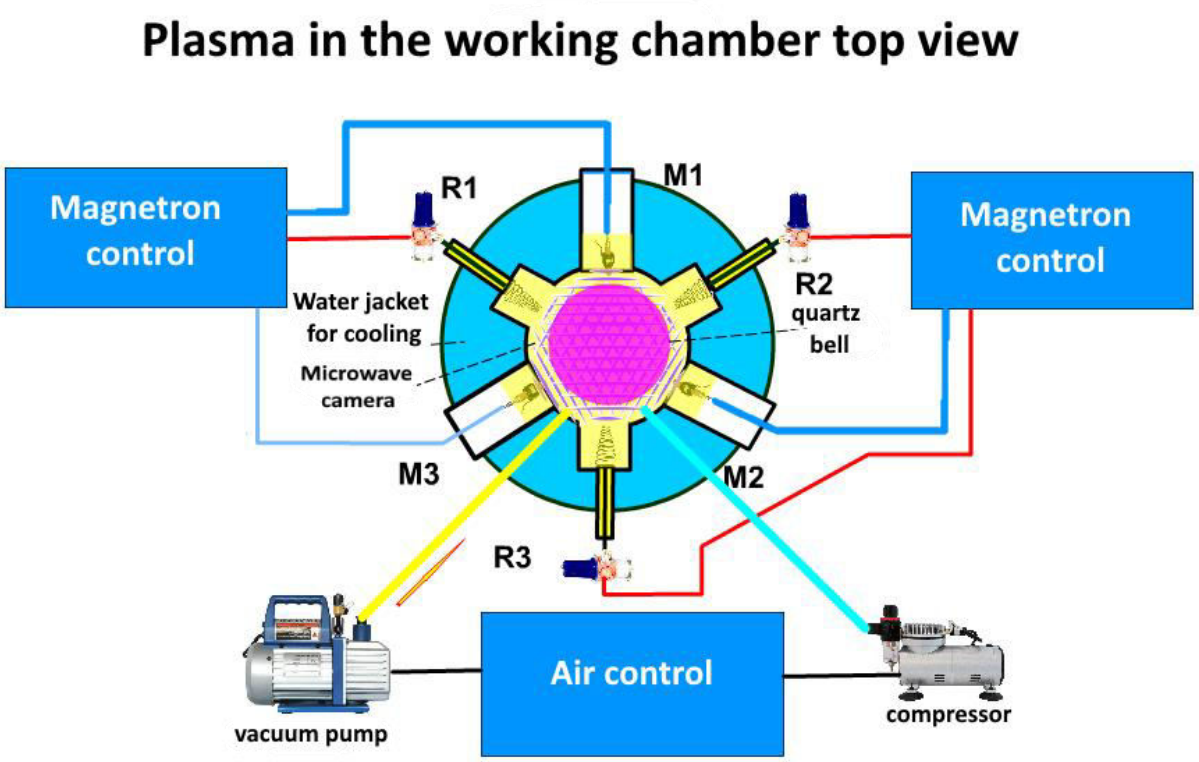



Image 2.3.1

There is a need for some further clarification here. This creates a very fast balance between the wave energy of the base magnetrons M1 M2 M3 and the PLASMA SPHERE, which is a natural resonator for the incoming microwaves. The M1M2M3 magnetrons are powered in a special way - frequency and

phase dependent. In the general case, a standard three-phase power supply network (with a frequency of 50-60Hz) can be used and each of them is powered by a separate phase, electrically dephased through 120 degrees. And since the M1M2M3 magnetrons themselves are located at 120 degrees geometrically in space, the field they create rotates in time with the supplied frequency, for example 50Hz. In fact, a special converter power supply unit controlled by the central controller will change the frequency depending on the necessary friction between the outer layers of the PLASMA SPHERE and the quartz chamber. This creates the following extremely important working conditions:

1. Dense and homogeneous microwave electromagnetic field
2. More efficient use of electron energy from the outer layer of the PLASMA SPHERE
3. Better temperature balance of the work process, etc.

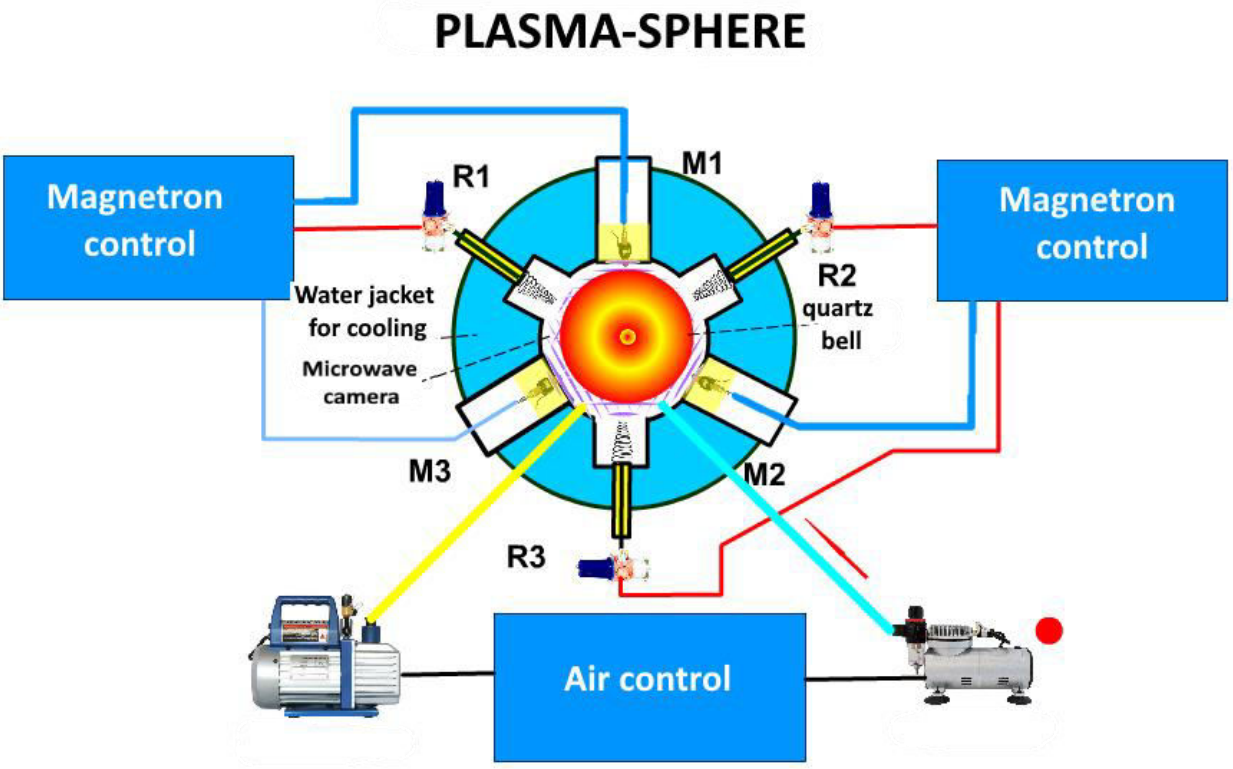



Image 2.4

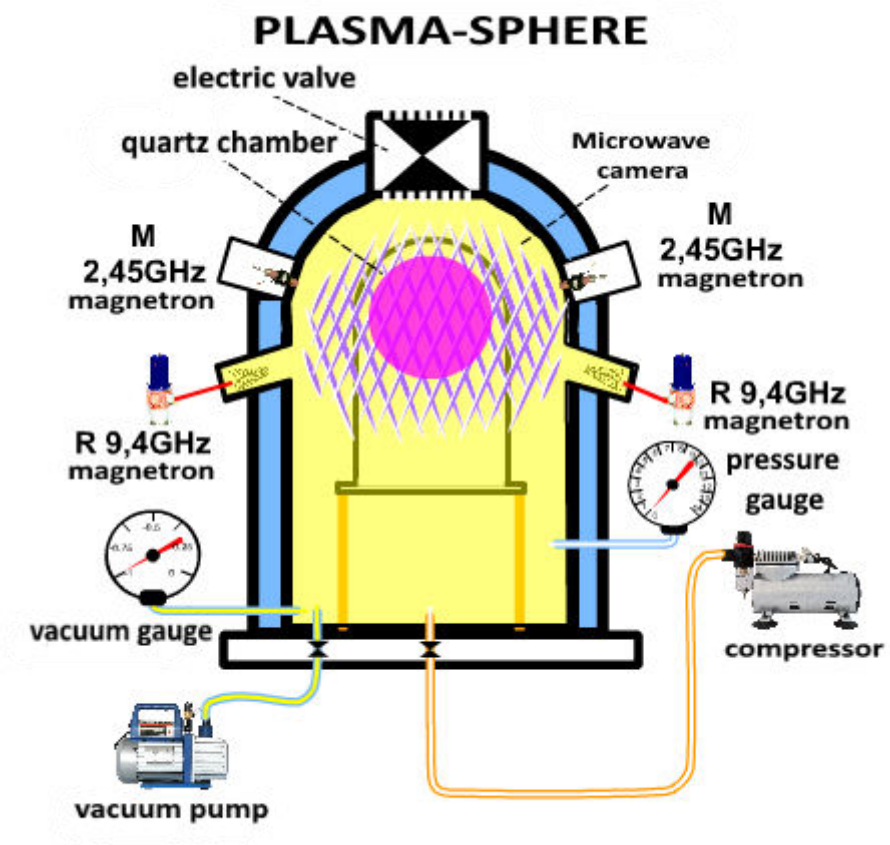



Image 2.4.1

In this state, the PLASMA SPHERE becomes hotter as the free electrons in the outermost layer of lightning meet the air particles and begin to exchange energy in the form of heat. In some isolated cases, some quantum electrons enter the game, and they give 100% of their energy to the air. It is necessary to bring the PLASMA SPHERE in the mode of additional excitation, which will involve additional quantum electrons in the events. This can happen in several ways, occurring individually or together. We will focus on the 3 most important of them:

1. By attacking the PLASMA SPHERE with a series of radar magnetron strikes in one central region (dynamic change of the contact between the waves of the pulsed magnetrons and the PLASMA SPHERE core) with the R9,4 GHz magnetrons.

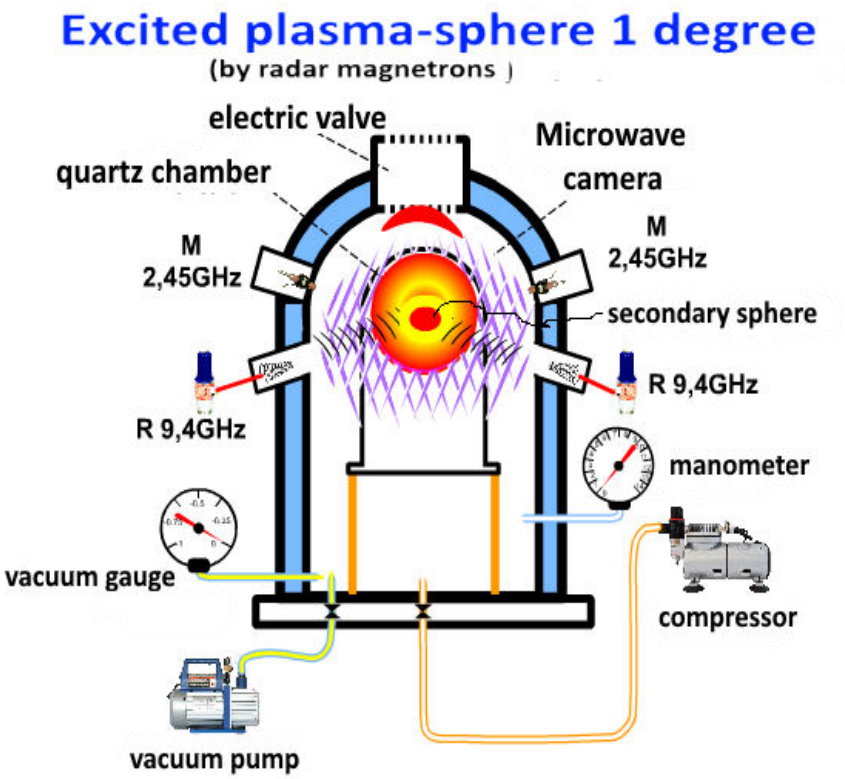



Image 2.5

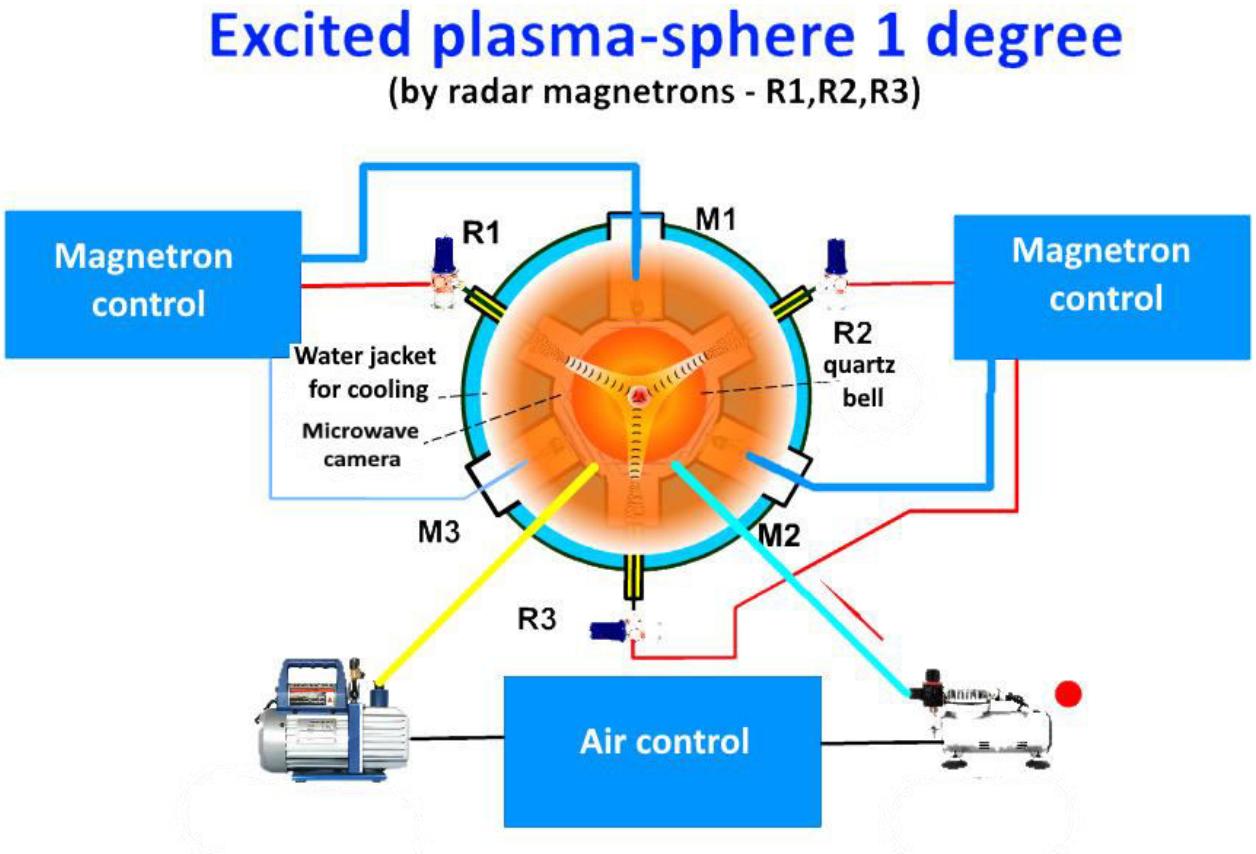



Image 2.5.1

2. Without stopping the previous excitation, we can introduce additional electrons into the process from the outside by supplying powerful electrical impulses from a pre-charged capacitor bank. Practice has shown that if 2 tungsten electrodes are introduced, for example, to touch the PLASMA SPHERE - a large electrical pulse with parameters such as 2ms, 100 000A, 15 000V can be passed through them. Electrical

excitation is a fact, but the PLASMA SPHERE quickly wears out the tungsten electrodes and the process stops. That is why we apply gas electrodes here with the help of the known oxyhydrogen gas. Thus, the electrical impulse passes through the self-igniting gas - supplied under pressure at the required speed and the gas itself becomes a switch.

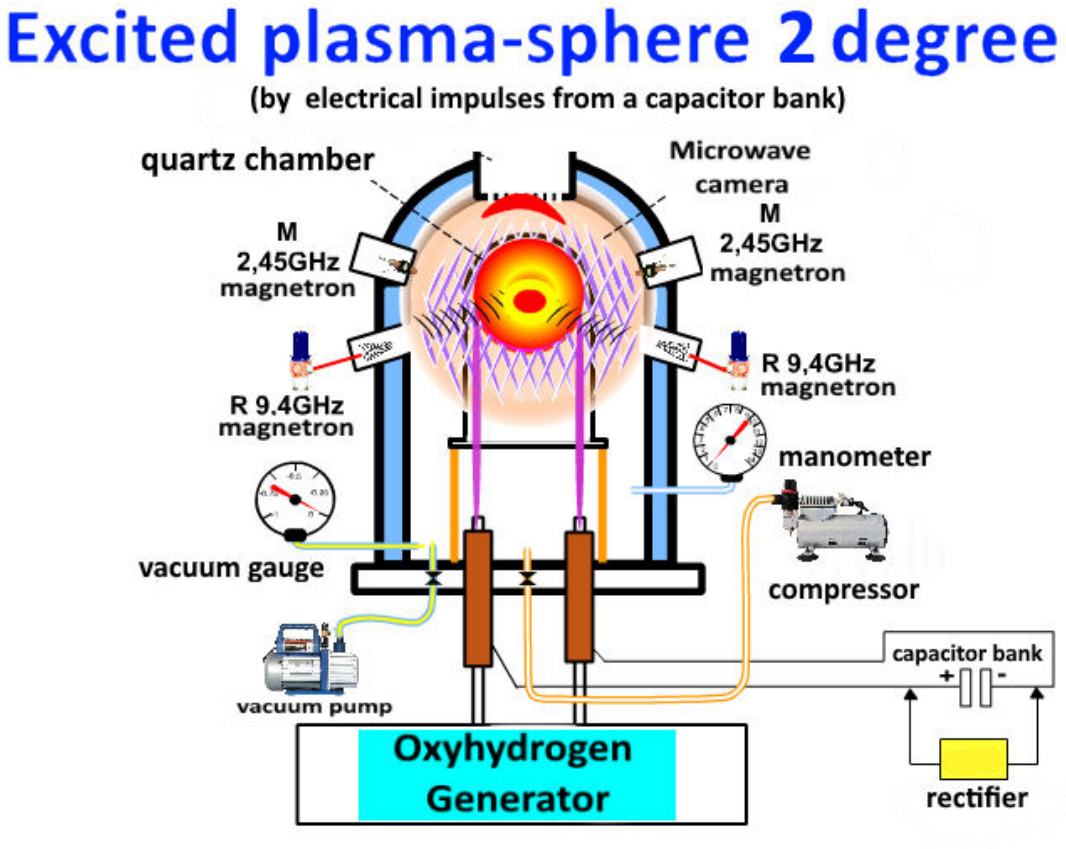



Image 2.6

The electric impulse attracts many additional quantum electrons and leads to a powerful eruption of the PLASMOSPHERE, which makes a qualitative big jump in the heat exchange with the air passing through the working chamber at normal pressure of the working environment. And as a cover for everything we come to another possibility - INCREASING THE PRESSURE IN THE CHAMBER.

When the pressure increases within reasonable limits (by reasonable we mean these limits of pressure change within which the PLASMA SPHERE will not go out and the processes will stop or the temperatures resting on the walls of the quartz chamber will not exceed 1560 C˚, at which quartz begins to soften and melt) - for example up to 8 atmospheres. These atmospheres are achieved with a simple compressor tailored to the required air flow. What is special is that we direct a strong air stream in the center of the quartz chamber. This further mixes all levels of the PLASMA SPHERE and forces many air particles to touch the hot central part of the sphere. The air jets in the chamber, their direction and parameters in general, strongly influence the operating modes.

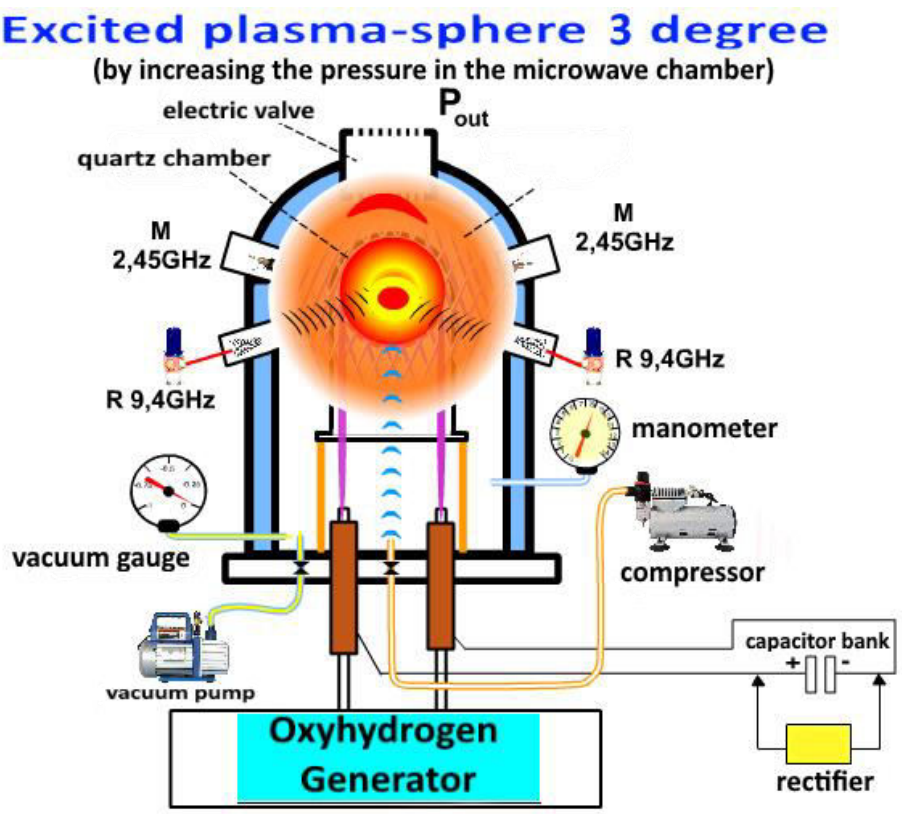



Image 2.7

The outgoing air flow transfers the heat energy in the direction we decide - for example to the inlet of a hot water boiler, or to the corresponding turbines of a power plant, etc. In the diagram below this is clearly shown. We will only add that we can put the warm air in the so-called bypass and at the outlet, for example, of the hot water boiler, and the exhaust air, which still has not cooled down, is fed back into the quantum generator and only reheated. All this is possible simply because the air throughout the tract remains virtually unpolluted (a fact of great environmental importance).

Applications:

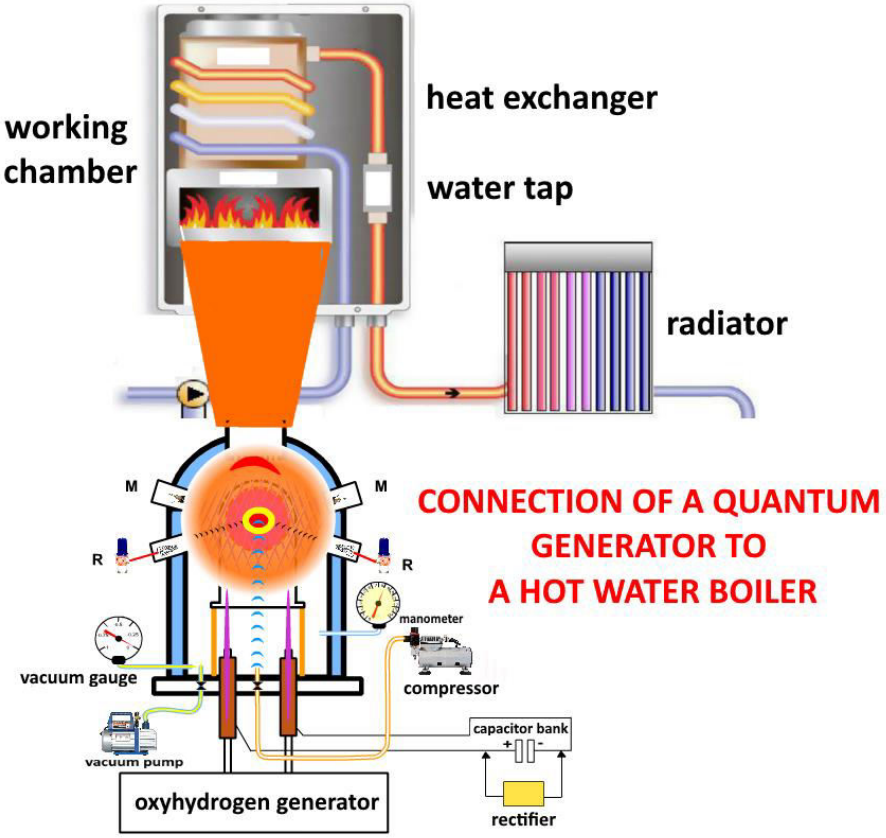



Image 2.8

Dr. Eng. Marin Beloev

Eng. Georgi Georgiev

Eng. Evgeni Beev