

ENERGY CATALYZER OF ROSSI (E-CAT) – COLD THERMONUCLEAR FUSION?!

OPERATING PRINCIPLE OF ANDREA ROSSI'S HEAT GENERATOR (E-CAT) FROM THE VIEWPOINT NEUTRON SCIENCES (NS)

(“Foundations of Neutron Sciences”, <http://neutronscience.com.ua/books/>)

Dear Vasilii!

Unfortunately, we could not find copyright or patent drawings of Andrea Rossi, which is surprising for the inventions displayed for public viewing and research. Therefore, for the study we had to take a primitive copy of Rossi's reactor presented on January 27, 2015 at a seminar on the subject of low-energy nuclear reactions (LENR), which took place in the premises of the All-Russian Research Institute for Nuclear Power Plant Operation. At this seminar PhD in Physics and Mathematics Alexander Parkhomov presented the results of his own experiments with LENR, in which a primitive copy of Rossi's reactor was able to generate 2.5 times more energy than it had consumed (click through <http://universe-tss.su/main/nauka/17693-v-rossii-povtorili-eksperiment-andrea-rossi.html>, [article in russian](#))

Figure 1 shows the scheme of the experiment conducted by Alexander Parkhomov and Figure 2 demonstrates a pilot LENR reactor of A. Parkhomov.

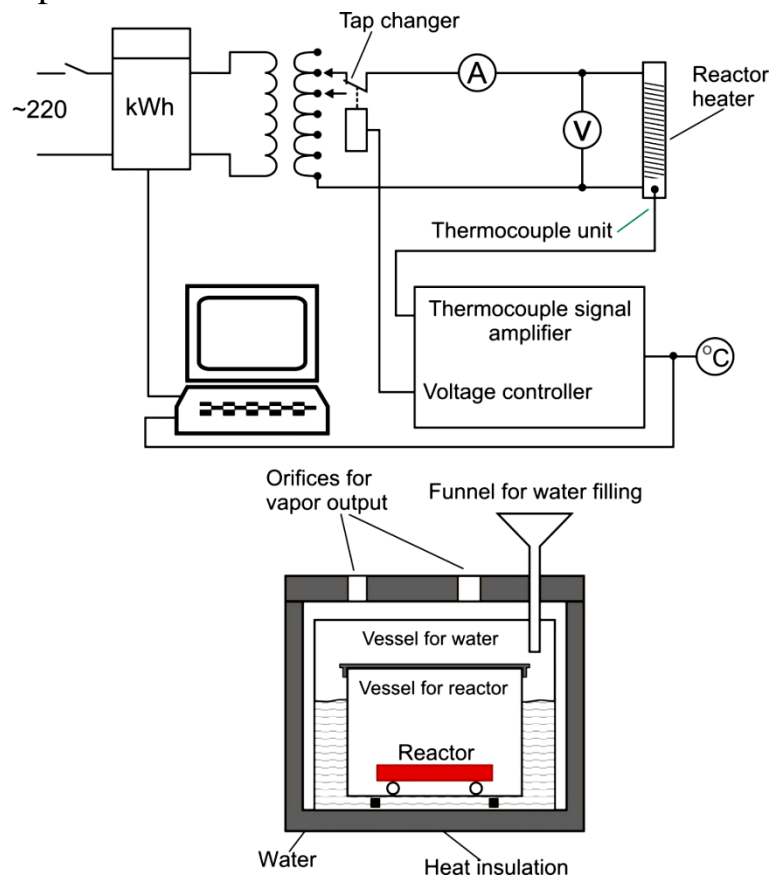


Fig.1. Scheme of the experiment conducted by Alexander Parkhomov

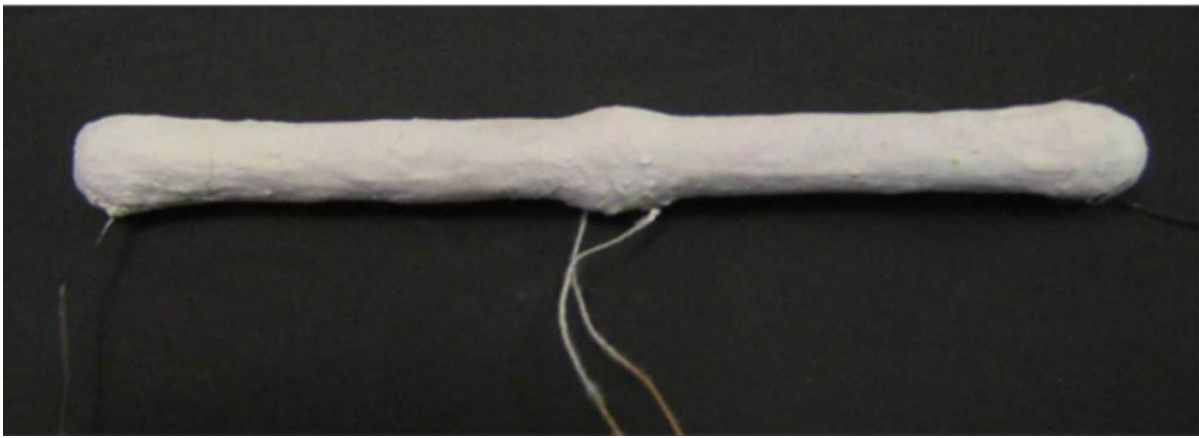
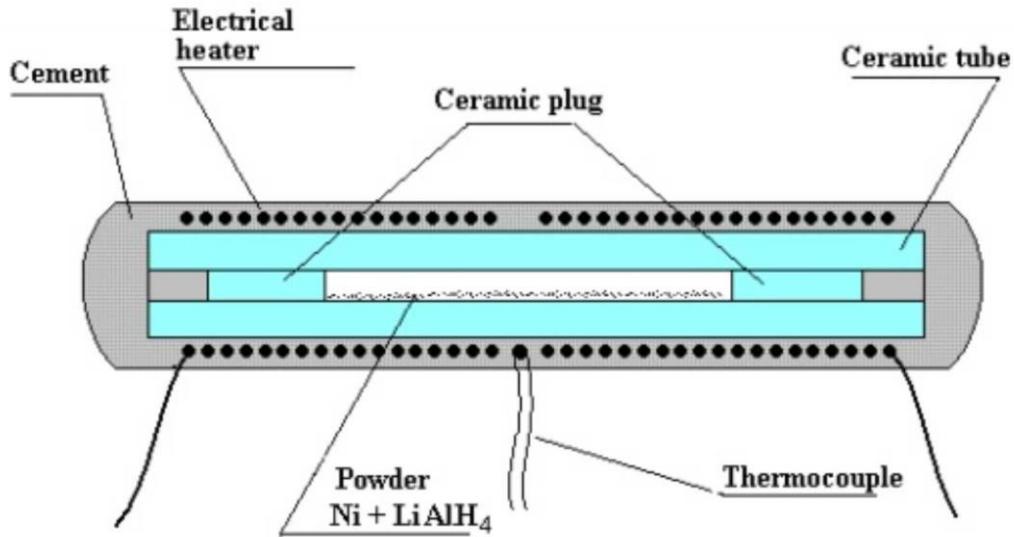


Fig.2. Pilot LENR reactor of A. Parkhomov.

Let us have a look at the ‘heart’ of the unit – ceramic tube with powder Ni +10% Li[Al H₄]. Pay attention to two factors:

1. If the powder includes only pure Ni, there will not be any processes.
2. The process will take place only in the presence of the compound Li [Al H₄] (or the like) decomposing into individual molecules at sufficiently low temperatures, considerably lower than the heating of the ceramic tube in the operating state. It does not seem possible to track this heating process accurately.

Initiate the unit start-up and turn on reactor heating with powders.

What comes out of the heated spiral of the heater according to Neutron Sciences (NS)?

At about 800°C magnetic fields of the current disappear, and according to NS, electric current begins to dissipate from the helix into the environment in the form of electrical heat energy carriers (e⁻-particles) with α⁻-particles in front and γ⁻-packages in the rear part. Stumbling on a thick ceramic tube with the crystalline lattice, having an atmosphere inside, the electrons (e⁻-particles) begin thermal ionization of gases of the lattice atmosphere by raising the intracellular pressure. This results in the extrusion of the inner gas atmosphere of the crystalline lattice in the powder mixture area, and there appears our atmospheric air (81% O₂ and 19% N₂) in the form of thermal electric ions O₂ and N₂. These ions are beginning to loosen the powder mixture, and thus lose some e⁻-particles that are attaching to the group of Ni and Li[Al H₄] molecules contributing to their chaotic movement. Further pumping of a powder mixture with electrons leads to the molecular ruptures of their groups and gasification, i.e., to the transfer to heat ions.

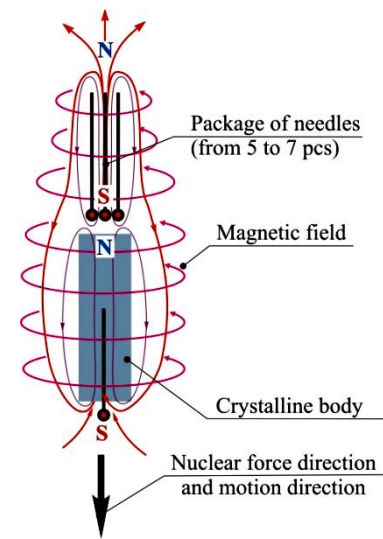
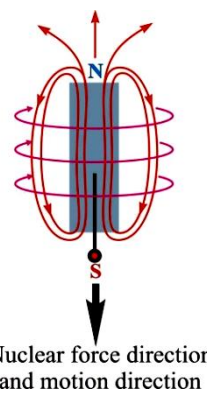
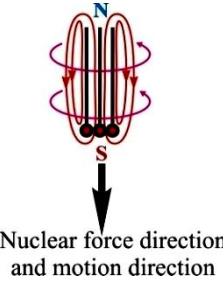
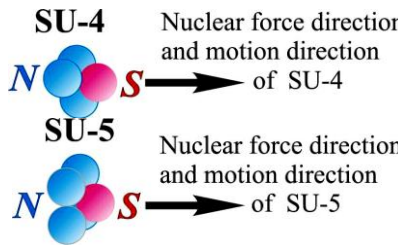
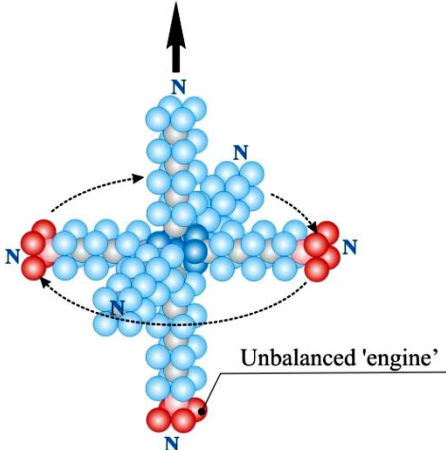
<p>ELECTRIC – “electron”, e^- – particle (when fractured – α^- – particle and γ^- – particle)</p>	<p>Cathode carrier-transformer</p>	 <p>Package of needles (from 5 to 7 pcs)</p> <p>Magnetic field</p> <p>Crystalline body</p> <p>Nuclear force direction and motion direction</p>
<p>DURING FRACTURE OF ELECTRON</p>	<p>α^- –particle (a needle with crystalline body)</p>	 <p>Nuclear force direction and motion direction</p>
	<p>γ^- –particle (a package of 5-7 needles or a package of light)</p>	 <p>Nuclear force direction and motion direction</p>
<p>CHEMICAL ELEMENT – “GAS”</p>	<p>There is one unbalanced ‘engine’ (SU –structural unit consisting of 4 or 5 neutrons)</p> <p>SU-4 Nuclear force direction and motion direction of SU-4</p> <p>SU-5 Nuclear force direction and motion direction of SU-5</p> 	<p>Nuclear force direction and motion direction</p>  <p>Unbalanced ‘engine’</p>

Fig.3.

Thus, with a dense powder we have strongly fluctuating system consisting of thermal ions with small movements, while with poorly compressed powder –there is chaotic motion of the latter. Hydrogen and its small consumption is associated with the replacement of the gas atmosphere, the powder loosener. To get powerful chaotic motion of thermal ions of Ni, Li, Al is necessary only for one purpose – to break this e^- -particles into the α^- -particles and γ^- -particles. Recall that the α^- -particles are composed of dozens of tiny gas chemical elements and have a speed of $0.1 \div 0.3$ “ C ” (the speed of light), while under mechanical collisions they easily decompose into small individual needles, dramatically multiplying the amount of energy carriers – this is called nuclear decay of atoms in Modern Physics (*MP*). The same thing happens with the γ^- -particles. Hence, there appears the so-called “excess energy” – it is the “energy” of the electric current transferred into the nuclear decay of atoms (chemical elements according to NS) in the absence of decay of atoms of the powder.

Why don't e^- -particles decompose into separate energy carriers, but α^- - and γ^- -particles do this?

The α^- - and γ^- -particles in the composition of the e^- -particle have a strong common hybrid magnetic field (see *Fig.3*), which performs the holding function as well and prevents the decay of e^- -particles into the components.

Hence the **conclusion** follows: the entire activity of the reactor is aimed at creating conditions in the powder to break electrons into halves and to destruct the hybrid magnetic field and then to break easily individual α^- - and γ^- -particles into the needles of light, i.e. obtain “nuclear decay” multiplying the amount of energy carriers.

According to NS, from one electron (e^- - particle) of a complex energy carrier it is possible to get $60 \div 100$ simple energy carriers in the form of needles of light, they are also molecular magnet needles, of the destroyed chemical elements.

This is, figuratively speaking, “a new phenomenon” in science in terms of understanding that under certain conditions electricity can be converted into “nuclear decay” of the atoms according to MP (the disintegration of the chemical elements according to NS).

Special attention should be paid to the fact that the electron, according to NS, is structured from many small chemical elements, energy carriers, whereas in Modern Physics (MP) it is an elementary particle that is not capable of nuclear decay, because it is not an atomic nucleus.

It is obvious that this phenomenon can be explained only in terms of the NS, but never with the MP positions.

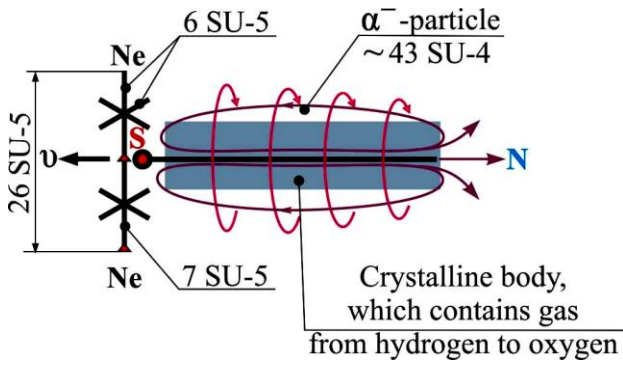
According to NS, during transfer of electric current to the decomposition of the chemical elements there will be no β^+ -radiation, α^- -radiation will be negligible, since α^- -particles will generally be broken down into the needles of light among the chaotically moving heavy ions of *Ni*, and γ^- -radiation will be presented most strongly, and it will be soft radiation, because γ^- -packages will have been disintegrated already into its component parts, and the needles of light heat energy carriers.

Andrea Rossi's Heat Generator (E-Cat) has no cold thermonuclear fusion (compound) assumed by MP, but there is an opposite process – decay of electrons from the external electric urban network.

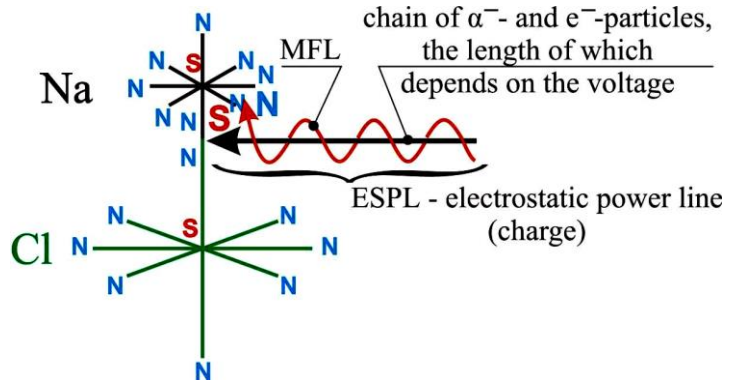
The transformation of one chemical element to another takes place only in the gaseous state. For example, Nickel (Ni) boiling point equal to 2732 °C (3005 K, 4949 °F), and in Rossi's reactor the temperature does not exceed 1300°C.

P.S.

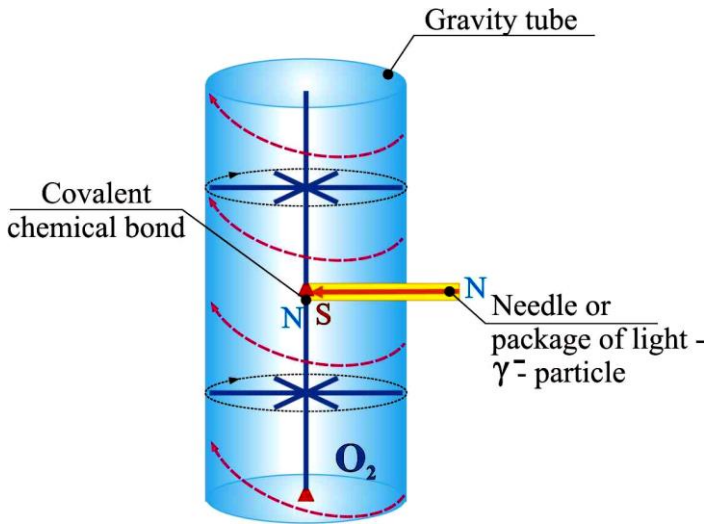
TYPES OF THERMAL IONS



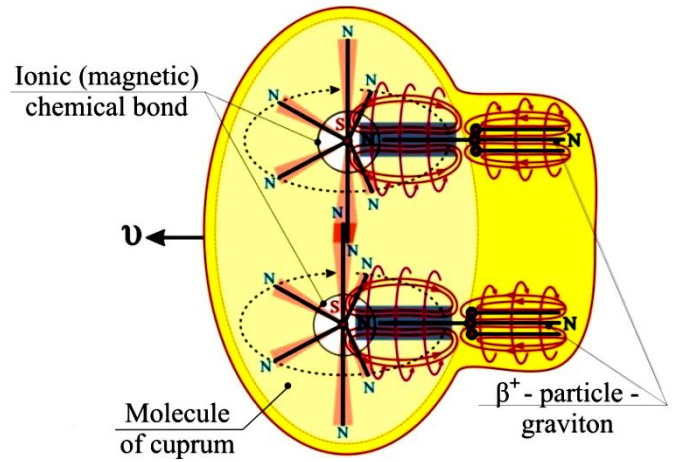
a) α^- -ion



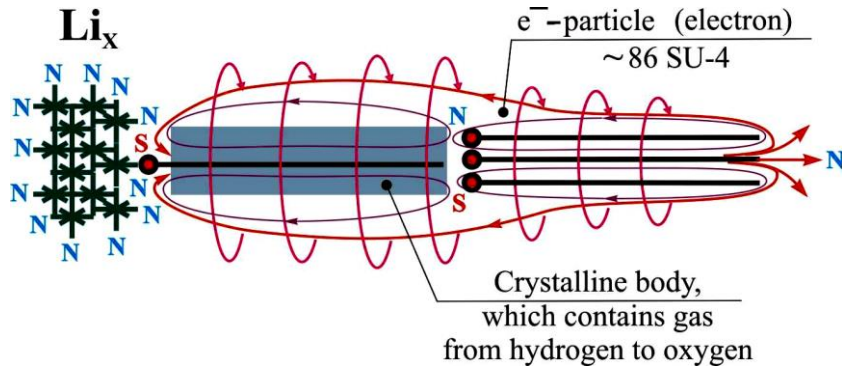
b) electrostatic ion



c) γ^- -ion



d) β^+ -ion



e) e^- -ion