

REVOLUTIONARY FUSION REACTOR

For more than 20 years, various researchers have been experimenting with processes in which interactions between elementary particles lead to the release of energy in the form of heat. Such processes can already be initiated at relatively low temperatures.

For modern science, the realization of cold fusion would be the equivalent of the philosopher's stone for the ancient alchemists, or rather the tool thanks to which they claimed to be able to transform poor metals into gold and silver. Nowadays, the real challenge is to fuse two atoms and get a bigger one, thus realizing nuclear fusion.

Atomic nuclei usually only fuse at temperatures of several million degrees Celsius, such as inside the sun. A certain proportion of the mass is converted into energy and released as heat. At room temperature, however, atomic nuclei repel each other and fusion is not possible. Nuclear fusion requires heat and extreme pressure. Andrea Rossi, inventor of the Energy Catalyzer (E-cat) claims to have succeeded and promises, thanks to his device, to wipe out all the energy problems of humanity in one fell swoop.

Rossi demonstrated his E-cat to scientists from the Royal Institute of Technology in Stockholm and the University of Bologna a few years ago.

Although they were not allowed to disassemble the reactor, they were allowed to carry out their own measurements. Their final report confirms that Rossi's reactor appears to have ‘produced energy in significantly greater quantities than would have been possible from any other conventional source.’ And much more energy than is achievable with any known chemical reaction.

With the launch of the E-cat, “cold fusion” is currently experiencing a renaissance. In scientific circles one speaks of Low Energy Nuclear Reactions – i.e. nuclear reactions that take place at comparatively low temperatures. The E-Cat generates large amounts of thermal energy by fusing small amounts of hydrogen and nickel powder with the addition of a catalyst.

E-Cat uses the so-called ‘Rossi effect’, in which helium is ultimately formed with the help of nickel in a long reaction chain from lithium and hydrogen – at (comparatively) low temperatures of 1,300. In this process, which Rossi called transmutation, excess heat is released.

About 50g of nickel are enough to generate a constant amount of energy of 10kW for six months. Around 1% of annual nickel production would be sufficient to meet the energy needs of the entire world population.

Such high efficiency come from the nuclear forces involved in the fusion process, which can release far more energy than chemical reactions.

The difference to conventional nuclear power is that E-Cat reactors are completely environmentally friendly, requiring neither the use of radioactive materials nor producing radioactive nuclear waste. Small amounts of resulting gamma rays can be easily shielded. In addition, the operation of the E-cat does not release any carbon dioxide or other environmentally harmful greenhouse gases.

The E-Cat will change the world – how we live, how we live together and how we treat our environment. For the nearest future, the E-Cat may be our last chance to find our way back to the harmony between man and nature. The unlimited availability of inexpensive energy opens up possibilities that we don't even dare to dream of today. E-Cat is a symbol of a better future.