connection assembly 106, and the hydrogen bottle or cylinder 107, thereby restraining radiations through the overall radiation life, allowing said radiations to be transformed into thermal energy.

On the outside of the lead armored construction, the copper reactor cooling water, circulates through a steel outer pipe assembly 105, and this conveyed to thermal energy using devices.

The above disclosed prototype can also be used as a heating module which, in a series and/or parallel coupling relationship with other like modules, will provide a basic core desired size and power heating systems.

A practical embodiment of the inventive apparatus, installed on October 16, 2007, is at present perfectly operating 24 hours per day, and provides an amount of heat sufficient to heat the factory of the Company EON of via Carlo Ragazzi 18, at Bondeno (Province of Ferrara).

For better understanding the invention, the main components of the above mentioned apparatus have been schematically shown in Table 2.

The above mentioned apparatus, which has not been yet publicly disclosed, has demonstrated that, for a proper operation, the hydrogen injection must be carried out under a variable pressure.

The electric resistance temperature controlling thermostat has been designed to switch off said electric resistance after 3-4 hours of operation, thereby providing self-supplied system, continuously emitting thermal energy in an amount larger than that initially generated by said electric resistance, which

mode of operation is actually achieved by an exothermal reaction.

As it will be shown in a detailed manner in the following Table 1, it is possible to calculate that, supposing a full transformation, a mole, that is 58 g nickel, generate the same amount of energy obtained by burning about 30,000 tons of oil.

Figures 2-5 show data measured on January 30, 2008 which basically demonstrate that the invention actually provides a true nuclear cold fusion.

The photo of figure 2 ,(obtained by a 1.400 x electronic microscope) shows the nickel powder on a 1.400 x scale, as withdrawn from the apparatus: in particular said photo clearly shows the flake granules, greatly promoting an absorption of the hydrogen atoms by the nickel nuclei.

The two arrows in the figure show the two positions of the powder sample thereon the electronic microscope tests for detecting the powder atomic composition have been carried out.

The two graphs of figures 3 and 4 have been made by the electronic microscope of Dipartimento di Fisica dell'Università di Bologna, under the supervision of Prof. Sergio Focardi, on January 30, 2008, and are related to the powder atomic composition at the two above points of figure 2.

In particular, said graphs clearly show that zinc is formed, whereas zinc was not present in the nickel powder originally loaded into the apparatus said zinc being actually generated by a fusion of a nickel atom and two hydrogen atoms.

This demonstrates that, in addition to fusion,