

INTRODUCTION (by Luciano Saporito) TO:

Report number 014

Role of Lithium in LENR

The synergy Lithium – Iron (written by Ugo Abundo)

In this last major report, Ugo Abundo identifies, through the analysis of the most recent scientific literature on LENR (works of *F.Celani, U.Mastromatteo, L.Holmlid, G.Miley, P.Soininen, A.Rossi, Y.Iwamura*), the opportunity to proceed in our experimentation (Open Power) with the addition of Li, with the dual purpose:

- **creating structural defects in the iron, to accommodate the clusters of ultra-dense hydrogen**
- **providing an alternative nuclear fuel to the scheme Deuterium-Tritium (radioactive) or Deuterium-Deuterium (high activation energy).**

Even in an area seemingly separate from the energy production by LENR, namely in the field of stabilization of radioactive elements in the waste from nuclear power plants, these principles seem to have a decisive role in the transmutations for radioactivity abatement.

In the report are cited the experimental results demonstrating the crystals of the alkali metals (particularly lithium) form stable clusters of " Rydberg matter", i.e., sets of atoms in which the peripheral electron orbits of hydrogen atoms are close to the ionization level and give the atom a polar character, responsible for a substantial aggregation in an ultra-dense phase.

The most interesting fact in this context is that the clusters of ultra-dense hydrogen can be formed in the entire volume of the lithium with crystal defects.

Our experimental line in Open Power (relating which a patent application was filed on March 9, 2015), **patent application:**

“Apparato e metodo per la produzione di energia mediante elettrocompressione pulsata di elementi leggeri in matrici composite ceramico-metalliche nano strutturate”,

("Apparatus and method for the production of energy by means of pulsed electro compression of light elements in ceramic-metallic nanostructured composite matrices ")

accepts all these fundamental concepts and introduces, in natural continuation of, **the highly impulsive electrical stress, and the mixture (at the cathode) of nano powders of several metals**, including *lithium* in quantities not restricted to just the doping, the *iron*, and *boron* based dielectrics.

The following new effects are thus expected:

- **electric compression of ionized hydrogen to permeate the matrix**
- **energy localization at the grain interfaces, to overcome the critical thresholds of ignition**
- **availability of lithium as nuclear fuel (proton-Li, alternative to D-D and D-T)**
- **participation of boron to neutron-proton dynamics**
- **thermoelectric effects between Li-Ni and Ni-Fe**
- **migration of ionized hydrogen driven by the electric field, directed towards the dense accumulation in the cathodic region**
- **promotion of magnetic effects related to the impulsive electric field.**

The objective of this research and experimentation is therefore dual, namely: both in *energy production* and *stabilization of radioactive materials*.

Luciano Saporito