HELIORITE

How to boost LENR – a few suggestions for nickel hydrogen systems

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During 2015, the results in the experimental Lugano LENR report[1] have been investigated by Heliorite AB. More than two hundred technical and scientific papers have been studied in the project. A number of possible chemical and physical processes in the reactor have been simulated and evaluated. A nuclear transmutation model (DEAN) has been developed. If funding will be received, a public report presenting the model will be prepared.

A number of attempts to replicate the Lugano experiment have been made around the world. The difficulties to receive clear (sustained) positive results indicate the complexity of the reaction system. Too high reported temperatures and COP in the Lugano report should also be taken in account. Below are a few suggestions derived from the Heliorite project. Perhaps they can be of some help to experimenters focusing on nickel-hydrogen LENR systems.

[1] http://www.elforsk.se/Global/Omvärld_system/filer/LuganoReportSubmit.pdf

DISCLAIMER: The DEAN model is supported by simulations and independent experimental works, but the data it is based on is limited. Heliorite AB provides no guarantee that the statements made in the suggestions below are correct or that using the suggestions will lead to a working LENR process. Under no situation shall Heliorite AB or its representatives, including the author of this document, be held liable for any damages including, without limitation, direct, indirect or consequential damages, arising from the use of information given in this document. For all related laboratory works THE USER MUST ALLOCATE SUFFICIENT RESOURCES FOR SAFETY AND CONTROL.

WARNING! Hazardous radiation and ejected material can be produced in a run-away reaction. When deuterium is used, the risk for run-away reactions is raised. RUN EXPERIMENTS IN SAFE ENCLOSURES! USE LESS THAN ONE GRAM OF NICKEL! USE FILLER TO LOWER FUEL POWER DENSITY!

SUGGESTIONS

1. Load the nickel nanopowder with catalyst/promoter. Different options (to be evaluated).

2. Process the nickel nanopowder by alternating gaseous oxidizing and reducing (hydrogen) at elevated temperature. Influences catalytic activity and hydrogen loading.

3. Decrease fuel power density and stabilize fuel with a filler, e.g. calcium oxide.

4. Mix powders homogeneously before loading to reactor.

5. Evacuate gases from reactor at elevated temperature.

6. Hydrides as the source of hydrogen are not recommended for laboratory work.

7. Liquid phases should be avoided.

8. Load the nickel nanopowder with hydrogen gas in a pressure and temperature controlled stepwise process.

9. Use hydrogen in the form of protium mixed with deuterium. Experiments must determine the optimum deuterium level for a specific fuel. Increase with care and start from a low level (hydrogen gas contains naturally about 0.01 atomic % deuterium).

10. A high level of helium production can successively decrease the transmutation rate.

11. Metallic lithium can introduce problems in high-temperature reactors. It is highly corrosive, dissolves nickel and will bind in filler oxides and alumina reactor walls, replacing other cations. It can also be a source of helium.

12. Strong hydrogen fluxes to and from active sites seems important to increase the reaction rate. They can be produced by different external means, e.g. mechanical, magnetic, electric and particle beams. LENR can also produce hydrogen fluxes.

13. Magnetic fields could affect the size and geometry of nickel microstructures formed in diffusion processes and possibly stabilize surface area and reduce sintering.

14. The trigger power level can influence the nuclear reaction paths.

15. Thin nickel layers/structures on/in high-temperature-resistant high-surface-area carriers (based on suitable oxides) can form a stable fuel and be an alternative to nickel powder.