

Positive Result of a Laser-Induced LENR Experiment

Daggett, David L.
President, Phonon Energy, Inc
Email: David.L.Daggett@gmail.com



After 3 years and 37 tests of laser-induced Low Energy Nuclear Reaction (LENR) experiments, a single apparent excess heat result was observed. Other experiments were performed, duplicating the Martin Fleischman Memorial Project (MFMP) “Glow Stick” device, but no observable excess heat was recorded in those experiments.

Somewhat similar to the work of D. Letts, D. Cravens and P. Hagelstein[1], using laser excitation to initiate LENR excess heat, Phonon Energy Inc. developed a larger test fixture (figure 1) that used an infrared laser to stimulate heated nickel powder (Hunter Chemical Grade AH50) that was conditioned under vacuum and pressurized 99.995% pure hydrogen gas.

We theorize that the specially tuned laser generates plasmons between antennae, and other surface protrusions, near the surface of a fine Nickel (Ni) metal powder fuel. A secondary reaction is then thought to occur on the surface of the nickel fuel between the densely packed hydrogen atoms and the Nickel atoms within the metal lattice. Although the exact nuclear process is still unproven, we postulate that the well known Widom-Larson[2] theory may have been at work.

In a heated, high-pressure Ni-H₂ reaction chamber, an integrated excitation laser was used at increasing step-levels of power as part of a test procedure. After some 4.5 hours of testing, four temperature sensors within the Ni powder recorded a sudden ramp up of temperature at a rate of approximately 19.5 deg. C per hour while constant background heater and laser power settings were held. The test chamber’s background heater was continued to be maintained at a constant power setting while the laser was then switched off. However, the rate of temperature rise continued for some 45 minutes until the test was terminated (Figure 2).



Figure 1. LENR setup

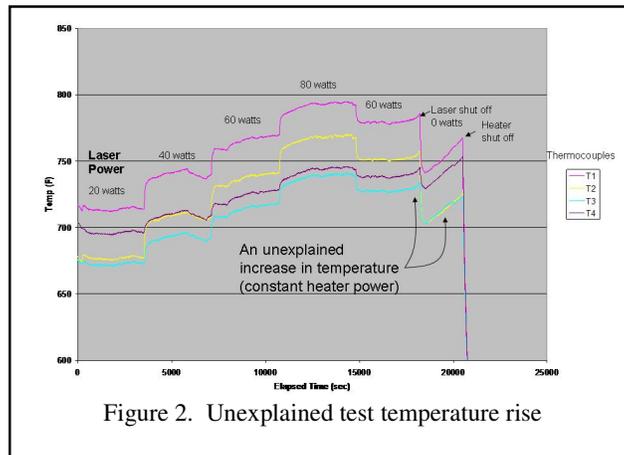


Figure 2. Unexplained test temperature rise

The test was replicated several times using identical methods and materials, but no excess heat was observed in any of the follow-on experiments. Present and future testing has been discontinued.

[1] D. Letts, D. Cravens, P. Hagelstein, “Dual laser stimulation of optical phonons in palladium deuteride”, 2009

[2] Y. Srivastava, A. Widom, L. Larsen “A Primer for Electro-Weak Induced Low Energy Nuclear Reactions”, 2008