

Callisto: High Pressure Loading

Final Report

February 11, 2024

Callisto team

Abstract

The Callisto project was dedicated towards searching for signs of low energy nuclear reactions (LENRs) occurring within deuterium-loaded palladium.

Our investigation was quite broad, both in attempting to induce LENR, and for trying to detect it:

Loading: We have used very high pressure D₂ gas (up to 500,000 psi), as our primary way to load deuterium into palladium. In this way, we have reached stable, 100%, loading levels; i.e., stoichiometric PdD.

Stimulation: We employed a wide range of methods, including heating loaded PdD up to its melting temperature, irradiating it with ultrashort-pulse laser beams, and applying intense electric fields, in an attempt to stimulate nuclear reactions within the PdD.

Material: Many different forms of PdD have been investigated, ranging from single crystals and polycrystalline slugs, through wires, foils, and lithographically formed chips, to nanoparticles and large arrays of patterned nanostructures.

Detection: In an effort to perform ever more sensitive searches for LENR energy, we have employed best-in-class commercial calorimeters, as well as a variety of high-temperature thermal sensors. This drive culminated in the development of detectors, using either physical or magnetic archaeology, capable of detecting the energy from even single LENR events.

As of late 2023, Callisto has not found any evidence of low energy nuclear reactions occurring in PdD.

We have concluded that such LENRs almost certainly do not exist.

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