

Callisto Electrochemical Loading Research Final Report:
No Evidence of Anomalous Heat Effect in Electrochemically
Loaded Palladium Deuteride after Extensive Exploration

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Executive Summary

Callisto Electrochemical Research's mission was to investigate the reported excess heat production in electrochemically loaded palladium deuteride, originating with the Fleischmann-Pons Cold Fusion experiment (later referred to as 'Low Energy Nuclear Reaction', LENR). We performed numerous calorimetry experiments with over 500 samples, amounting to over 200,000 hours of total calorimetry time, most of them replications of excess heat experiments reported in the literature. The scale of this effort was of a similar magnitude as all known LENR efforts combined. We found no evidence of LENR.

We advanced the field of LENR by meticulously cataloging issues that can lead to the false identification of excess heat events. A careful analysis of the literature shows that most, if not all, reported excess heat events can be traced back to these issues.

Beyond the field of LENR, we advanced the understanding of electrochemically loaded metal hydrides using density functional theory. We also obtained higher hydrogen loadings than state of the art by deploying novel loading enhancers, in particular arsenic(III) salts.

We recommend that future endeavors redirect their resources to other high-risk, high-reward energy topics to address the climate crisis.

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