

# **Study of a Calorimetry Apparatus utilizing Radiation based Heat Transfer**

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## **Abstract**

The paper will discuss a radiation based heat transfer approach of a calorimetry device. In this study, the calorimeter was placed in a vacuum to mitigate heat transfer via conduction/convection to the environment. This radiation-only calorimetry devices was used to investigate metal hydride formations and to compare the expected thermodynamic output to actual results. The design, instrumentation and calculation methods of this device will be discussed. As a complementary study, COMSOL Multiphysics<sup>®</sup> models were used to investigate accuracy of the system. Results from this COMSOL comparison will also be presented.