

Building & Testing a High Temperature Seebeck Calorimeter

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A high temperature Seebeck calorimeter capable of operating at 200-300C was built and tested. The testing used a glow discharge tube containing plated palladium on the side walls and a Molybdenum central anode. Running with deuterium gas and high voltages demonstrated excess thermal power at levels of 5-10 watts but no excess power was observed when natural abundance hydrogen was used. In addition to the normal Seebeck measurements, excess power was also observed using back-off power measurements of the enclosure heater containing the Seebeck. A resistive control heater was used to verify the system.