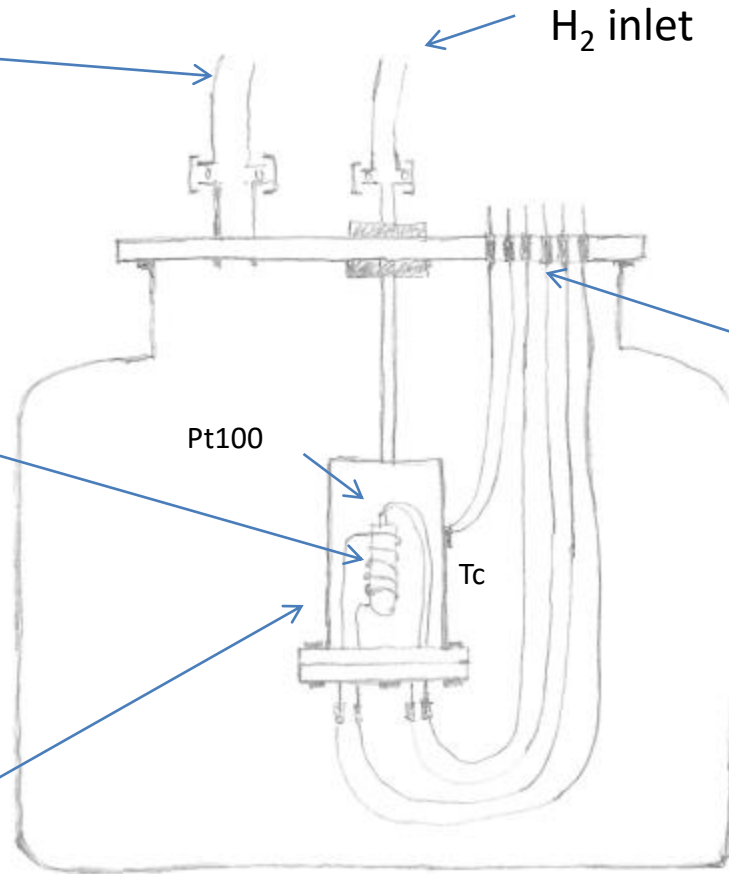


Vacuum isolated high efficiency reactor

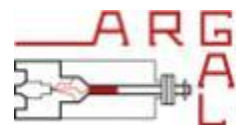
To vacuum pump H₂ inlet



Ceramic crucible 1.5 cm³

Feedthroughs to Tc for chamber temperature, to Pt100 for internal temperature, to heater

SS inner chamber
100 cc



High efficiency reactor set up



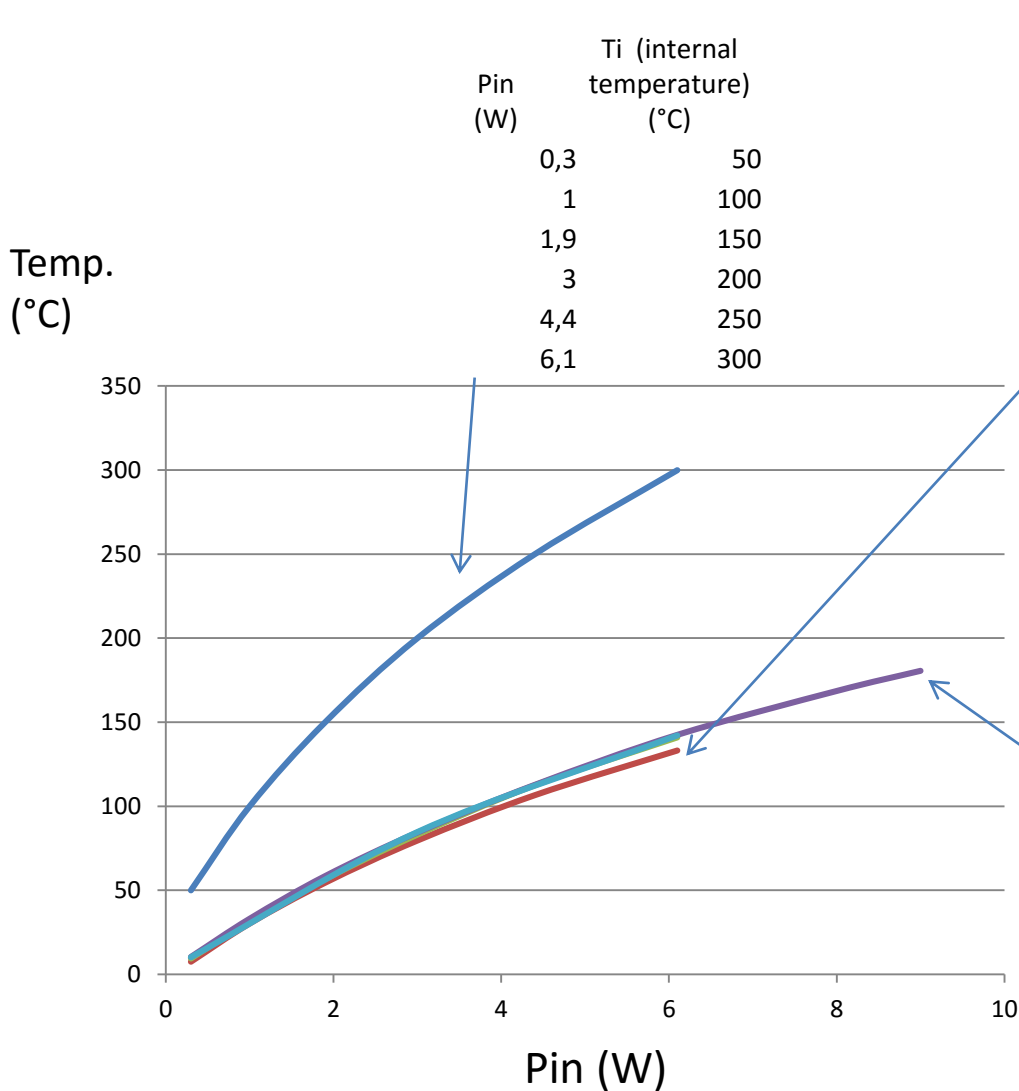
High efficiency
all metal reactor

Double reactor
closure

Vacuum isolated
reactor container



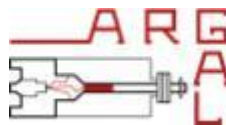
Calibration with He plus H2 and D2 test data



Pin (W)	Tc cal (°C)	Ta cal (°C)	Tc-Ta cal (°C)
0,3	37	29,5	7,5
1	60,5	30,3	30,2
1,9	84,5	30	54,5
3	109	29,4	79,6
4,4	136,4	29,8	106,6
6,1	164	30,8	133,2

Pin (W)	Tc H2 (°C)	Ta H2 (°C)	Tc-Ta H2 (°C)
0,3	39	29,6	9,4
1	61,5	29,8	31,7
1,9	86	29,4	56,6
3	111,5	28,4	83,1
4,4	140	27,5	112,5
6,1	170	29	141

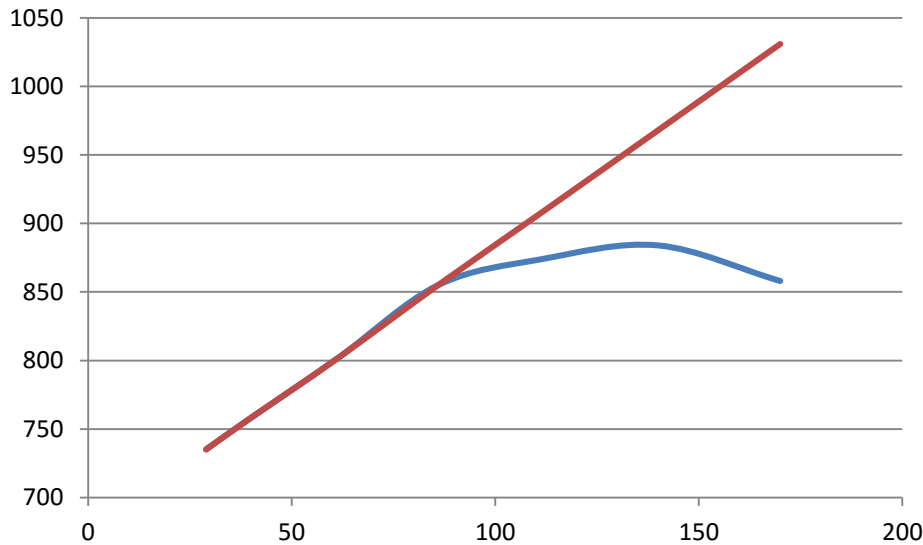
Pin (W)	Tc D2 (°C)	Ta D2 (°C)	Tc-Ta D2 (°C)
0,3	37,5	27,2	10,3
1	61,3	28,3	33
1,9	86,5	28,1	58,4
3	113,5	29,2	84,3
4,4	141,5	28,8	112,7
6,1	170,53	28,04	142,49



Hydrogen absorption

(powder containing Pd)

Pressure (mbar)



Pin (W)	Tc (°C)	Pressure mbar
0	29	735
0,3	39	756
1	61,5	802
1,9	86	855
3	111,5	874
4,4	140	884
6,1	170	858

Tc (°C)

Trend of the H2 pressure in the reactor (blue line) compared with constant volume gas law (red line)

