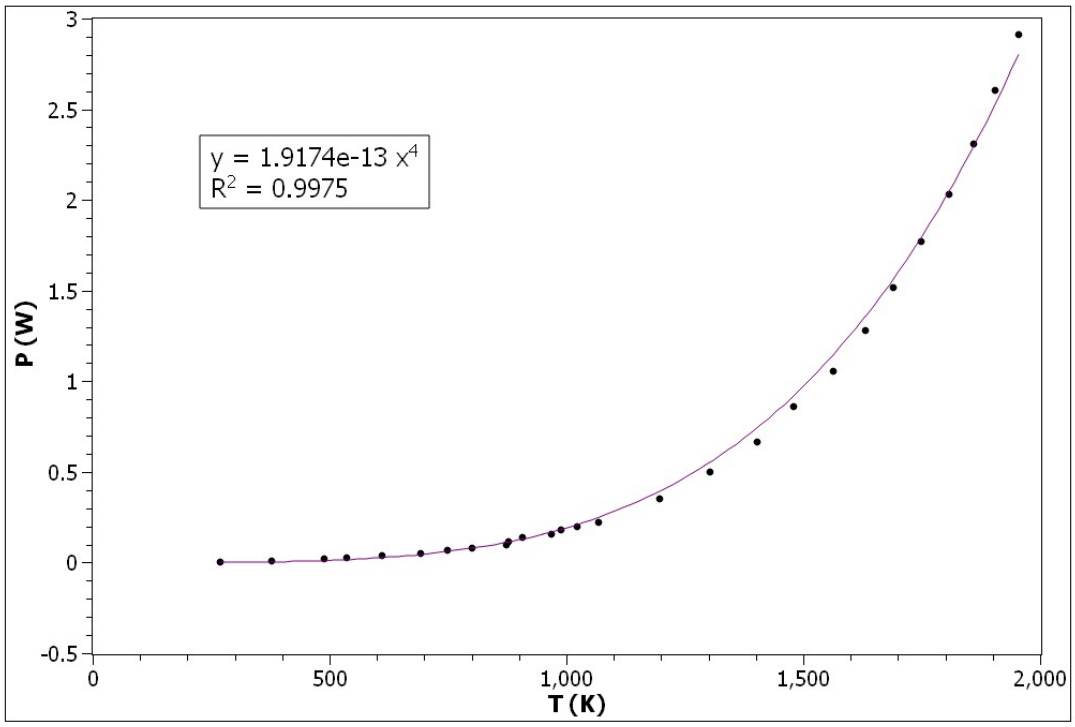
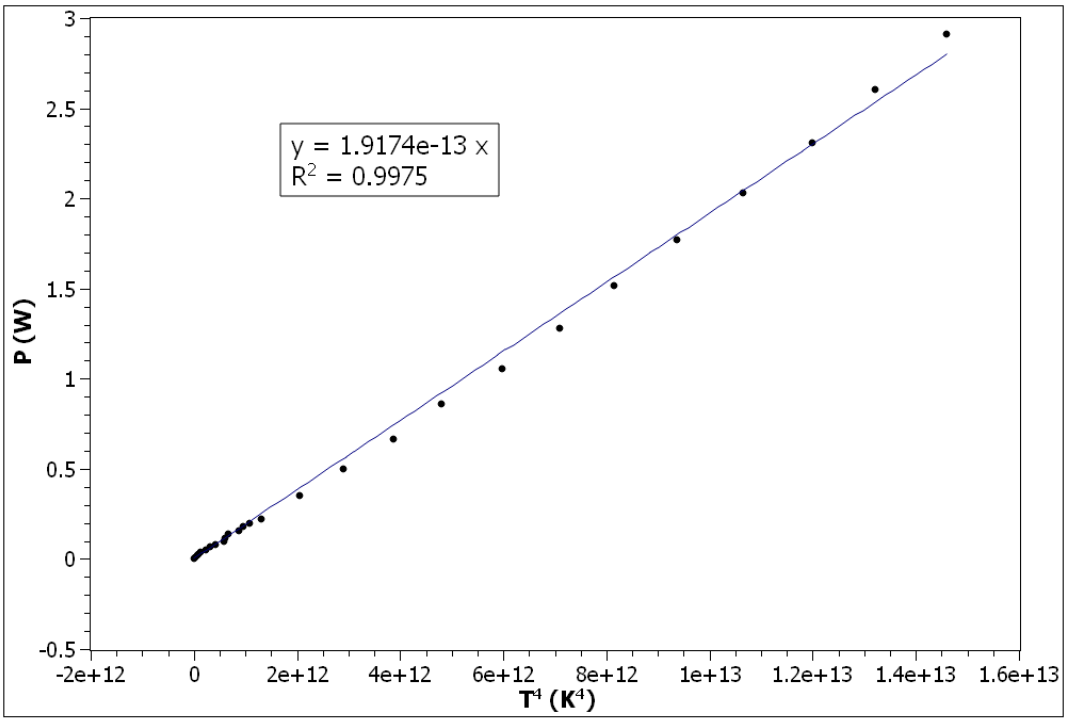
V (V)	I (mA)	R (Ω)	P (W)	T (K)	T^4 (K^4)
0.1	29.3	3.41	0.0029	269.97	5.31E+09
0.2	47.0	4.26	0.0094	376.90	2.02E+10
0.3	58.2	5.15	0.0175	487.98	5.67E+10
0.4	72.0	5.56	0.0288	536.55	8.29E+10
0.5	81.0	6.17	0.0405	610.24	1.39E+11
0.6	87.3	6.87	0.0524	692.27	2.30E+11
0.7	95.0	7.37	0.0665	749.42	3.15E+11
0.8	**102.4**	**7.81**	**0.0819**	**800.00**	**4.10E+11**
0.9	106.4	8.46	0.0958	872.58	5.80E+11
1.0	117.5	8.51	0.1175	878.37	5.95E+11
1.1	125.5	8.76	0.1381	906.58	6.75E+11
1.2	128.6	9.33	0.1543	968.77	8.81E+11
1.3	136.5	9.52	0.1775	989.73	9.60E+11
1.4	142.6	9.82	0.1996	1021.53	1.09E+12
1.5	146.4	10.25	0.2196	1067.48	1.30E+12
2.0	174.4	11.47	0.3488	1196.20	2.05E+12
2.5	199.8	12.51	0.4995	1303.57	2.89E+12
3.0	222.4	13.49	0.6672	1401.88	3.86E+12
3.5	245.2	14.27	0.8582	1479.51	4.79E+12
4.0	264.2	15.14	1.0568	1563.81	5.98E+12
4.5	284.0	15.85	1.2780	1631.44	7.08E+12
5.0	303.8	16.46	1.5190	1689.56	8.15E+12
5.5	321.7	17.10	1.7694	1749.41	9.37E+12
6.0	338.7	17.71	2.0322	1806.72	1.07E+13
6.5	355.1	18.30	2.3082	1860.86	1.20E+13
7.0	372.3	18.80	2.6061	1906.09	1.32E+13
7.5	387.8	19.34	2.9085	1954.59	1.46E+13



V (V)	I (mA)	R (Ω)	P (W)	T (K)	T^4 (K^4)
0.1	29.3	$(3.41\pm3.41)\times10^{0}$	$(2.93\pm2.93)\times10^{-3}$	$(2.70\pm4.43)\times10^{2}$	$(0.53\pm3.48)\times10^{10}$
0.2	47.0	$(4.26\pm2.13)\times10^{0}$	$(9.40\pm4.70)\times10^{-3}$	$(3.77\pm2.75)\times10^{2}$	$(2.02\pm5.88)\times10^{10}$
0.3	58.2	$(5.15\pm1.72)\times10^{0}$	$(1.75\pm0.58)\times10^{-2}$	$(4.88\pm2.24)\times10^{2}$	$(0.57\pm1.04)\times10^{11}$
0.4	72.0	$(5.56\pm1.39)\times10^{0}$	$(2.88\pm0.72)\times10^{-2}$	$(5.37\pm1.87)\times10^{2}$	$(0.83\pm1.16)\times10^{11}$
0.5	81.0	$(6.17\pm1.23)\times10^{0}$	$(4.05\pm0.81)\times10^{-2}$	$(6.10\pm1.72)\times10^{2}$	$(1.39\pm1.57)\times10^{11}$
0.6	87.3	$(6.87\pm1.15)\times10^{0}$	$(5.24\pm0.87)\times10^{-2}$	$(6.92\pm1.66)\times10^{2}$	$(2.30\pm2.21)\times10^{11}$
0.7	95.0	$(7.37\pm1.05)\times10^{0}$	$(6.65\pm0.95)\times10^{-2}$	$(7.49\pm1.60)\times10^{2}$	$(3.15\pm2.70)\times10^{11}$
0.8	**102.4**	$\mathbf{(7.81\pm0.98)\times10^{0}}$	$\mathbf{(8.19\pm1.02)\times10^{-2}}$	$\mathbf{(8.00\pm0.00)\times10^{2}}$	$\mathbf{(4.10\pm0.00)\times10^{11}}$
0.9	106.4	$(8.46\pm0.94)\times10^{0}$	$(9.58\pm1.06)\times10^{-2}$	$(8.73\pm1.58)\times10^{2}$	$(5.80\pm4.19)\times10^{11}$
1.0	117.5	$(8.51\pm0.85)\times10^{0}$	$(1.17\pm0.12)\times10^{-1}$	$(8.78\pm1.52)\times10^{2}$	$(5.95\pm4.11)\times10^{11}$
1.1	125.5	$(8.76\pm0.80)\times10^{0}$	$(1.38\pm0.13)\times10^{-1}$	$(9.07\pm1.50)\times10^{2}$	$(6.75\pm4.46)\times10^{11}$
1.2	128.6	$(9.33\pm0.78)\times10^{0}$	$(1.54\pm0.13)\times10^{-1}$	$(9.69\pm1.53)\times10^{2}$	$(8.81\pm5.56)\times10^{11}$
1.3	136.5	$(9.52\pm0.73)\times10^{0}$	$(1.77\pm0.14)\times10^{-1}$	$(9.90\pm1.52)\times10^{2}$	$(9.60\pm5.89)\times10^{11}$
1.4	142.6	$(9.82\pm0.70)\times10^{0}$	$(2.00\pm0.14)\times10^{-1}$	$(1.02\pm0.15)\times10^{3}$	$(1.09\pm0.65)\times10^{12}$
1.5	146.4	$(1.02\pm0.07)\times10^{1}$	$(2.20\pm0.15)\times10^{-1}$	$(1.07\pm0.16)\times10^{3}$	$(1.30\pm0.75)\times10^{12}$
2.0	174.4	$(1.15\pm0.06)\times10^{1}$	$(3.49\pm0.17)\times10^{-1}$	$(1.20\pm0.16)\times10^{3}$	$(2.05\pm1.10)\times10^{12}$
2.5	199.8	$(1.25\pm0.05)\times10^{1}$	$(5.00\pm0.20)\times10^{-1}$	$(1.30\pm0.17)\times10^{3}$	$(2.89\pm1.48)\times10^{12}$
3.0	222.4	$(1.35\pm0.04)\times10^{1}$	$(6.67\pm0.22)\times10^{-1}$	$(1.40\pm0.17)\times10^{3}$	$(3.86\pm1.92)\times10^{12}$
3.5	245.2	$(1.43\pm0.04)\times10^{1}$	$(8.58\pm0.25)\times10^{-1}$	$(1.48\pm0.18)\times10^{3}$	$(4.79\pm2.33)\times10^{12}$
4.0	264.2	$(1.51\pm0.04)\times10^{1}$	$(1.06\pm0.03)\times10^{0}$	$(1.56\pm0.19)\times10^{3}$	$(5.98\pm2.85)\times10^{12}$
4.5	284.0	$(1.58\pm0.04)\times10^{1}$	$(1.28\pm0.03)\times10^{0}$	$(1.63\pm0.19)\times10^{3}$	$(7.08\pm3.33)\times10^{12}$
5.0	303.8	$(1.65\pm0.03)\times10^{1}$	$(1.52\pm0.03)\times10^{0}$	$(1.69\pm0.20)\times10^{3}$	$(8.15\pm3.79)\times10^{12}$
5.5	321.7	$(1.71\pm0.03)\times10^{1}$	$(1.77\pm0.03)\times10^{0}$	$(1.75\pm0.20)\times10^{3}$	$(9.37\pm4.31)\times10^{12}$
6.0	338.7	$(1.77\pm0.03)\times10^{1}$	$(2.03\pm0.03)\times10^{0}$	$(1.81\pm0.21)\times10^{3}$	$(1.07\pm0.49)\times10^{13}$
6.5	355.1	$(1.83\pm0.03)\times10^{1}$	$(2.31\pm0.04)\times10^{0}$	$(1.86\pm0.21)\times10^{3}$	$(1.20\pm0.54)\times10^{13}$
7.0	372.3	$(1.88\pm0.03)\times10^{1}$	$(2.61\pm0.04)\times10^{0}$	$(1.91\pm0.21)\times10^{3}$	$(1.32\pm0.59)\times10^{13}$
7.5	387.8	$(1.93\pm0.03)\times10^{1}$	$(2.91\pm0.04)\times10^{0}$	$(1.95\pm0.22)\times10^{3}$	$(1.46\pm0.65)\times10^{13}$



```
import numpy as np
from uncertainties import ufloat
from uncertainties import unumpy as unp
from scipy.optimize import curve_fit

file = np.loadtxt("Data.csv", delimiter = ",", skiprows=1, usecols=(0,1,4))

alpha = 5.21e-3
beta = 7.2e-7
TG = 800    # K


n = len(file)

Ta = [file[i,2] for i in range(n)]
V = [ufloat(file[i,0],0.1) for i in range(n)]       # V
I = [ufloat(file[i,1],0.1) for i in range(n)]       # mA

R = [(V[i]/I[i])*1000 for i in range(n)]   # ohm
P = [(V[i]*I[i])/1000 for i in range(n)]   # W

R0 = R[7] / (1 + (alpha*TG) + (beta*TG*TG))

T = [(-1*alpha + unp.sqrt(alpha**2 - (4 * beta * (1 - (R[i]/R0)))))/(2*beta) for i in range(n)]

T4 = [T[i]**4 for i in range(n)]

T4_Ta4 = [T4[i] - Ta[i]**4 for i in range(n)]

def linear(x, p):
    return p * x

popt1, pcov1 = curve_fit(linear, [T4[i].n for i in range(n)], [P[i].n for i in range(n)])
popt2, pcov2 = curve_fit(linear, [T4_Ta4[i].n for i in range(n)], [P[i].n for i in range(n)])

# Error between slope of [P vs T^4] and [P vs (T^4-Ta^4)]
error = (popt2-popt1)/popt2 * 100
```