Research Plan on Quality Factor

* is the electron relaxation time
* is the Seebeck effective mass
* is the conductivity effective mass
* is the effective mobility from Hall measurement
* is the DOS weighted mobility
* is the lattice thermal conductivity

The goal is to maximize the quality factor , or quality factor as a function of temperature .

1. Obtain effective mobility as a function of temperature from Hall measurements.
2. Estimate from Pisarenko plot, which can be generated from (a) Seebeck vs. T and (b) carrier concentration vs. T (from Hall measurements)
3. Estimate from speed of sound, which is a function of elastic constants and density.