**Name:**

**ECEN 5060, Computational Semiconductor Physics, HW7**

Recall the general equations for TE transport properties:

Under what conditions one may enhance without reducing the Seebeck coefficient. You may find a specific form of relaxation time that can maximize this ratio. Assume that you can engineer any form of .

Apply your answer to Silicon and plot and the power factor to ratio , i.e. , versus temperature at ND=1021 cm-3 for two cases of (1) due to acoustic phonon and ionized impurity scatterings and (2) your optimized .