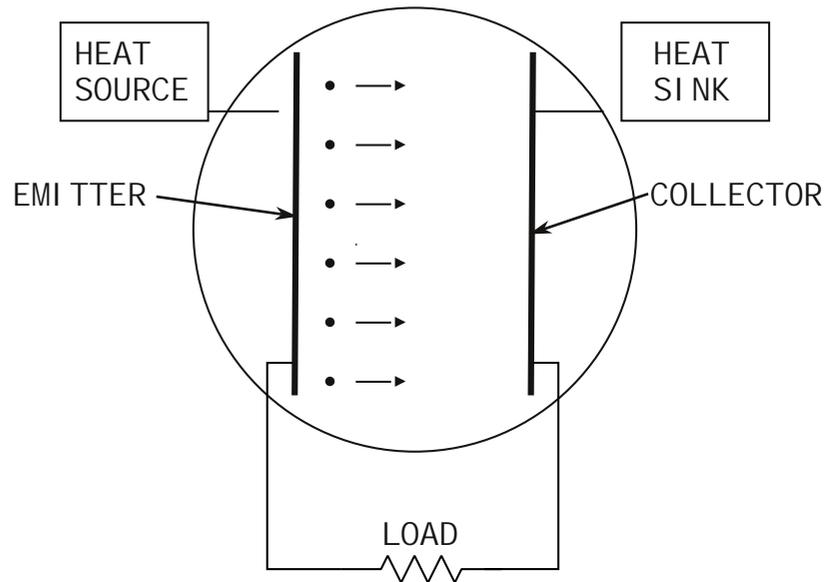
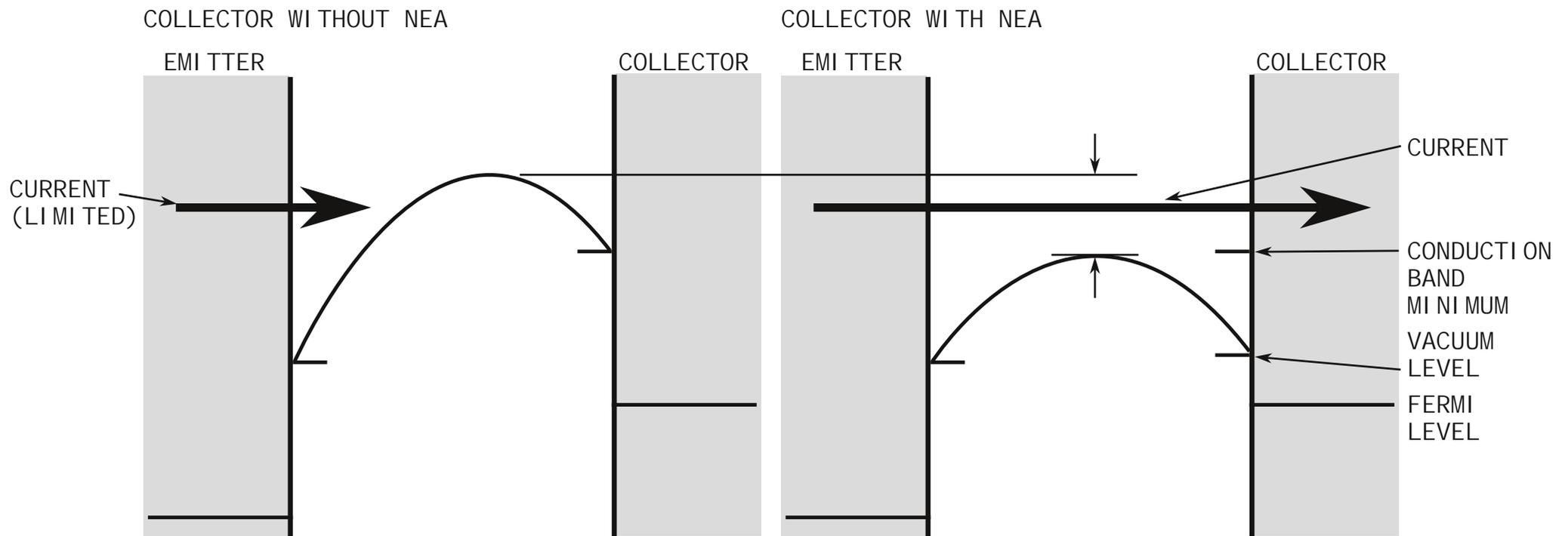


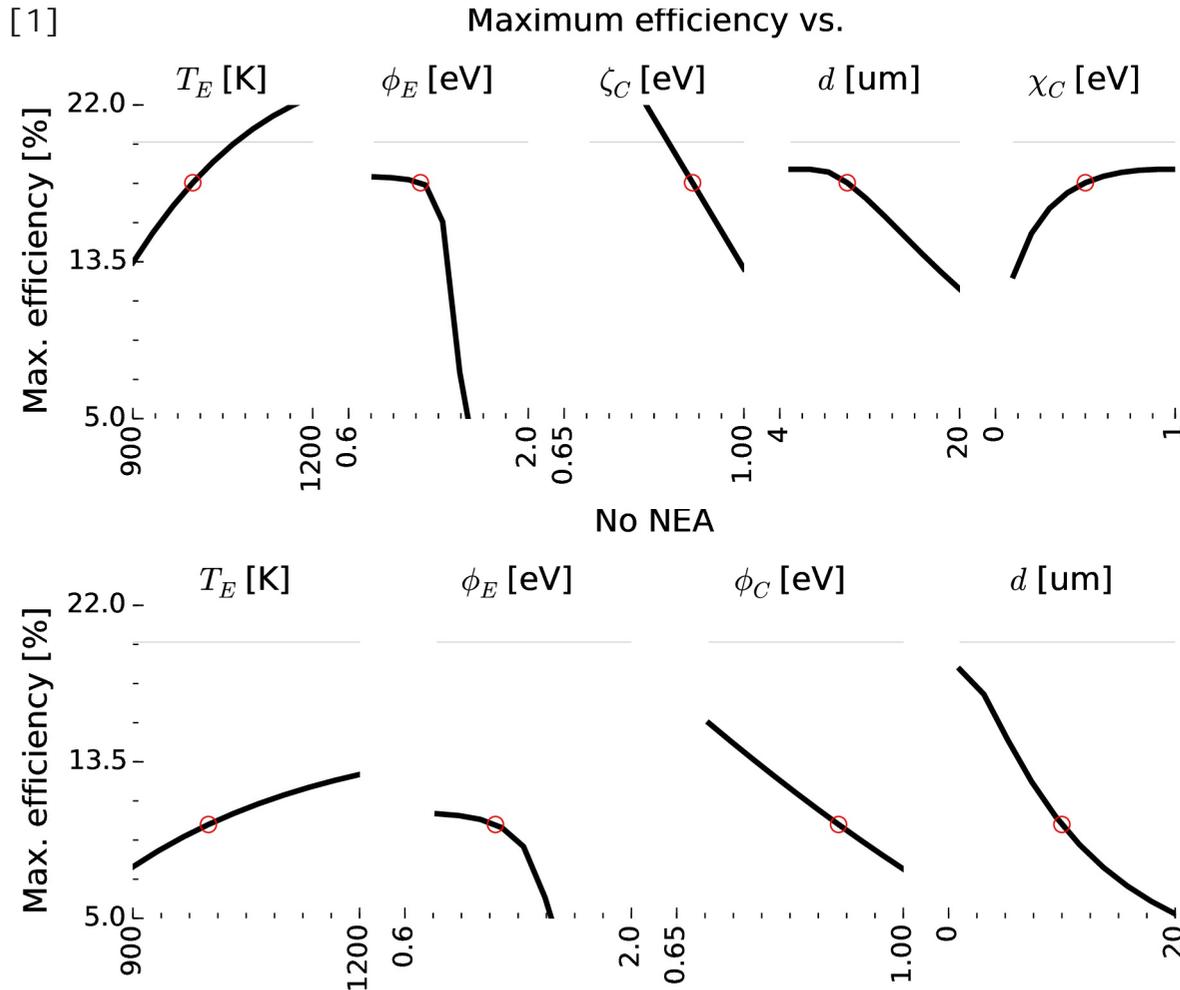
Thermoelectron engine



- No moving parts
- No conductive thermal transport



Phosphorus doped diamond

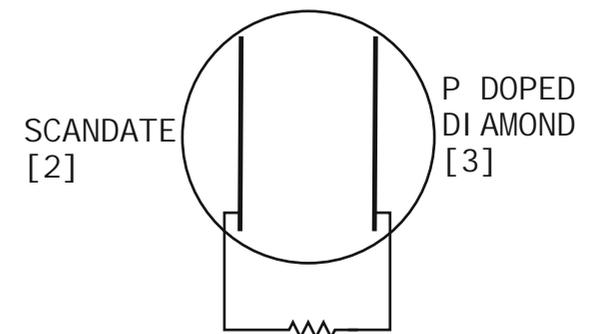


= EMITTER =
 MATERIAL = SCANDATE
 TEMP = 1000K
 BARRIER = 1.16 eV [2]
 RICHARD. = $7.8 \text{ A cm}^{-2} \text{ K}^{-2}$ [2]
 EMISS. = 0.5

= COLLECTOR =
 MATERIAL = DIAMOND
 TEMP = 300K
 BARRIER = 0.9 eV [3]
 NEA = 0.5 eV
 RICHARD. = $1\text{e-}5 \text{ A cm}^{-2} \text{ K}^{-2}$ [3]
 EMISS. = 0.5

INTEREL. DIST. = 10 μm

OUTPUT POWER* = 1.17W cm^{-2}



[1] Smith, JAP 114 (2013)
 [2] Gaertner et.al., Applied Surface Science 111, 11-17 (1997)
 [3] Koeck et.al. Diam. and Rel. Mat., 18, 789-791 (2009)

Development needs

- Prototype device.
- Low energy electron absorption data for PDD.
- Theoretical understanding of Richardson's constant.
- Model to account for back emission.