

Thermo-Electric Converter

Key words: Seebeck effect, Thermo-Electric Effect, Useful Energy, Heat energy



Equipment List:

1. Pasco TD 8550 Thermo-Electric Converter
2. Cup of ice water
3. Cup of near-boiling water (don't get it from the vending machines, it's not warm enough)
4. Empty cup

How to assemble and operate:

- Place one leg of the TEC into the boiling water and the other in the cup of ice water, and observe the fan spinning
- Combine half the ice water with half the boiling water in the empty cup and put the rest of the boiling water in the cup of ice water
- Place the legs of the TEC into both cups of combined water and observe the fan not spinning

Description/Theory:

This demonstration demonstrates the Thermo-Electric effect and the conversion from heat energy into electrical energy and then into mechanical energy. It also demonstrates “useful energy”: the total heat energy is approximately the same in both scenarios, but only in the first one can we actually extract work from it

Comments/Notes:

Ice can be gotten from the ice machine near the stairs on the second floor on the corner of building 14 and 15 of NB4.