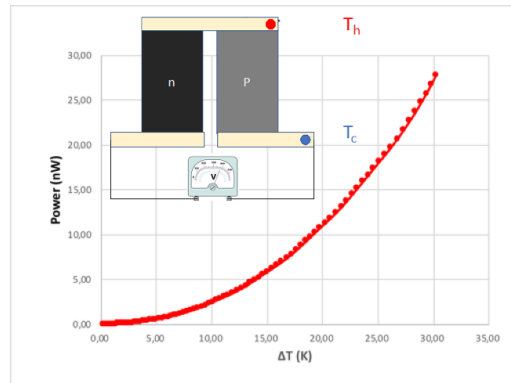


Thermal Energy Harvesting through Thermoelectric Materials

Energy is available in many different forms. Low-grade heat is an abundant form of energy that is generally wasted due to the absence of useful technologies for their harvesting. Thermoelectric (TE) materials can be used for harvesting the waste thermal energy and convert into electrical energy. They are solid-state devices with no moving parts, capable of converting a thermal gradient directly into electrical energy. This field attracted a growing interest due the potential use in body-near wearable technologies, among others.



A simple TEG developed in the research group and the power vs temperature difference b/w the ends.

In this bachelor thesis project, the student(s) will participate in the preparation of TE films on substrates and evaluate their transport properties as a function of materials composition and the temperature gradient created through the materials. This thesis project consists of developing a power conversion system to step up nW level power generated through home-made TE materials and devices to μ W and mW levels. It involves both system design and experimental implementation.

Contact:

- Muhammet Toprak (toprak@kth.se); Tillämpad Fysik