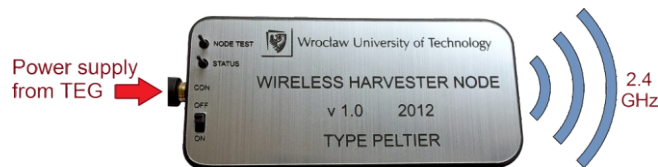


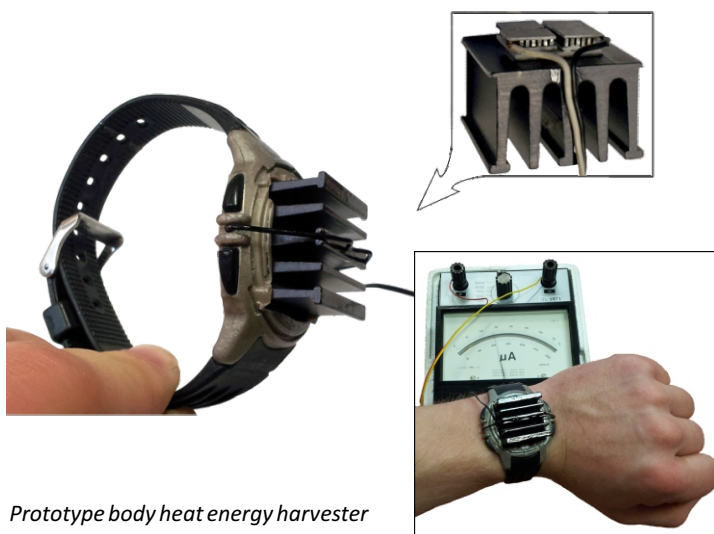
THERMAL ENERGY HARVESTING

Wireless Harvester Node

- can be powered by a low-temperature heat source, using TEGs
- may be equipped with various sensors, depending on the target application
- wirelessly sends the data from the harvester and/or sensors to a computer with dedicated software
- the acquisition system can simultaneously collect the data from several WHNs.



Wireless Harvester Node for thermoelectric modules



Prototype body heat energy harvester

Energy harvesting from body heat

Our most recent investigations are connected with energy harvesting from the human body. Micro-Peltier modules examined in our laboratory may be easily embedded in:

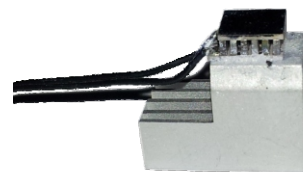
- clothes,
- jewellery,
- wearable electronics.

A prototype energy harvester in the form of a wristwatch was designed in our laboratory:

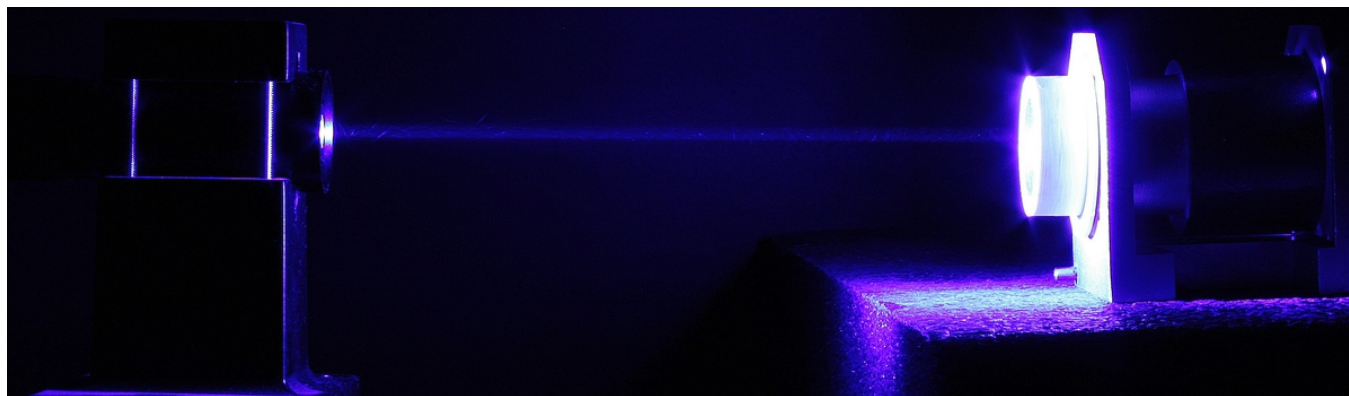
- it generates up to several hundred millivolts,
- it can supply low-power electronic systems through a voltage booster.

Power transmission via blue laser and TEGs

Our investigations have proved that laser beam can effectively transport energy over long distances. In the tests, a 1000 mW blue laser was used to heat a single micro-Peltier module from various distances. The energy generated by the module was sufficient to power the Wireless Harvester Node. Currently, we are testing the system for simultaneous power and data transmission, with additional optical sensor.



Micro-Peltier module (attached to a heat sink) for blue laser power transmission tests



Power transmission with the use of a 1000 mW blue laser and a Micro-Peltier module

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