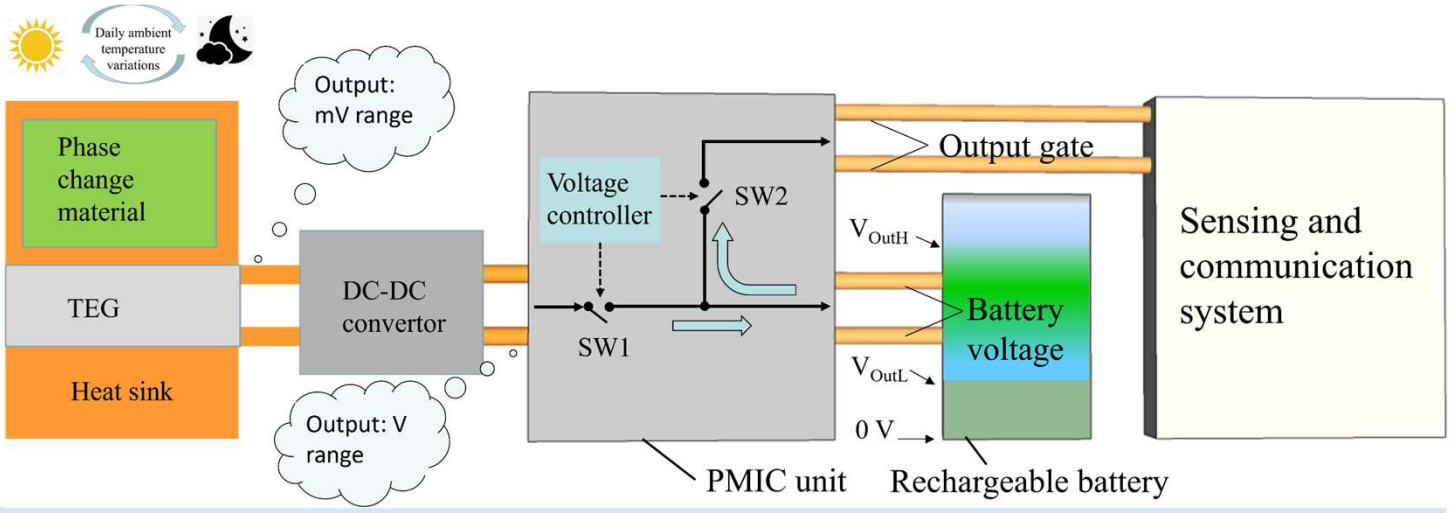
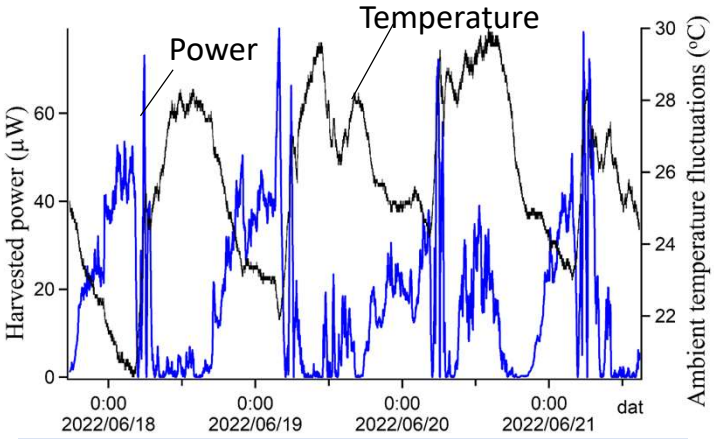
Tohoku University Micro System Integration Center

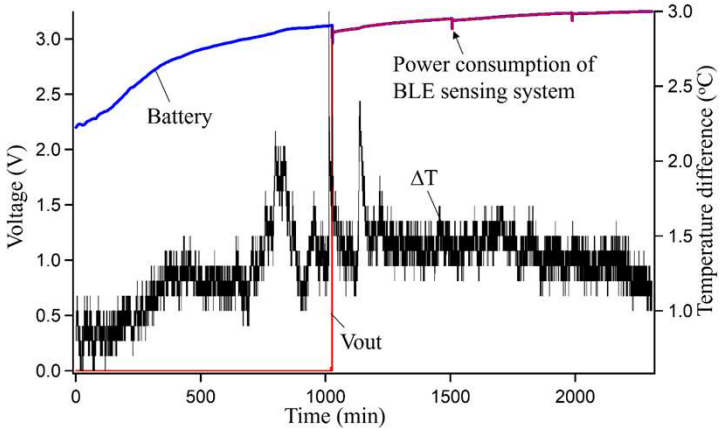
Temperature-Fluctuation-Harvested Thermoelectric Module



Daily ambient temperature fluctuation energy harvesting at anytime and anywhere



Daily ambient temperature has been successfully converted into electricity. The maximum output power reaches 70 μW and the average power is approximately 20 μW.



The output gate of self-powered module has been connected successfully to BLE sensing system which can work continually under time interval of 2 hours.

Self-powered module

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. *Energy reports*, **6**, 2022-2029, 2020.

. *International journal of energy research*, **45**, 15557-15568, 2021.

. *Applied Energy*, **311**, 118679, 2022.

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