



Seminar

of the Department of complex matter F7

Thursday, 11. 4. 2019 at 13h

Seminar room F7

SOLID STATE GENERATORS AND ENERGY HARVESTERS FOR WASTE HEAT RECOVERY AND THERMAL ENERGY HARVESTING

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Solid state thermal to electrical energy converters are capable of transforming low grade heat directly into electricity for waste heat recovery and thermal energy harvesting. Direct solid state heat engines, such as thermoelectric modules and thermionic converters for spatial temperature gradients, are compared with pyroelectric energy harvesters and thermomagnetic generators for transient changes in temperature. Temperature and size limitations along with the maturity of the technologies are discussed based on energy density and temperature range for the different generator technologies. Despite the low energy conversion efficiency with solid state generators, electric power density ranges from 4 nW/mm² to 324 mW/mm².

References:

Zabek, D., and F. Morini. "Solid State Generators and Energy Harvesters for Waste Heat Recovery and Thermal Energy Harvesting." *Thermal Science and Engineering Progress* (2018).

The lecture will be held in English.

Cordially invited to attend.

