Harvesting Energy through Thermo Electrics: Optimizing Nanostructures for Power Generation and Cooling

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Project Abstract

In this project we intend to develop theoretical and experimental research in order to convert the waste heat into electrical energy through thermoelectric materials. This work is expected to contribute to the efforts done so far to develop alternative energy technologies and reduce the human dependence on fossil fuels. Such a work would also reduce greenhouse emission.

The accomplishment of the present project will certainly allow the establishment of approaches for tailoring the electronic and thermal transport properties to optimize heterostructures with thermoelectric conversion efficiency much higher than those that are currently in use.