

NOMURA LAB.

[Energy Harvesting by Nanotechnology]

Centre for Interdisciplinary Research on Micro-Nano Methods

Integrated Quantum Electronics, Phonon Engineering

Department of Electronic Engineering and Information Systems

<https://www.nlab.iis.u-tokyo.ac.jp/index-e.html>

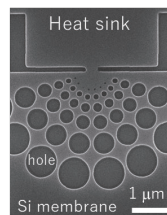
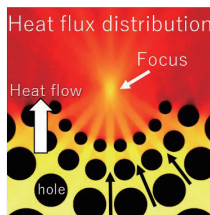
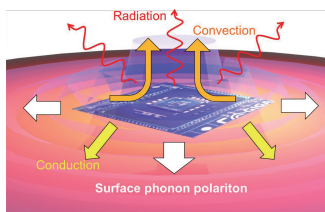
Thermal Conduction Nanoengineering and Thermoelectric Energy Harvesting

Coherent control of heat transfer in semiconductor nanostructures by phonon engineering

Thermal conduction can be controlled by nanoengineering. Our goal is to use nanofabrication technology to develop highly efficient silicon thermoelectric devices for **energy harvesting** and **thermoelectric applications**.

- ◆ Nanoscale heat transport
- ◆ Advanced thermal conduction control by phonon engineering
- ◆ Development of Si energy harvester and monitoring systems
- ◆ Phonon hybrid quantum science

Advanced thermal conduction control by phonon engineering



Development of energy harvesters and monitoring system by industry-university cooperation

Smart community by
autonomous sensor nodes

