

# SAWANO LAB.

Crystal engineering  
and nano material electronics

Department of Informatics and Electronics

Crystal engineering, Semiconductor engineering



## Strained Si/Ge heterostructures and their applications to optoelectronic devices

Recent expansions of amounts of information and communication have been drastically enhancing power consumptions in computers from data centers to edge devices, imposing world-wide critical problems. We aim to reduce the power consumptions of semiconductor chips by means of introduction of SiGe with high mobility and light emitting capability into current Si technology.

- High mobility transistors and quantum devices using strained Ge channel 2D hole gas
- High efficiency light emitting devices and spin LED using strained SiGe/Ge quantum wells
- Light emitters and sensors using strained Ge micro bridge structures

