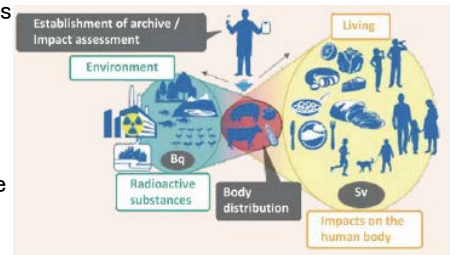


25 Activities of Nishizawa center space users

Masatoshi Suzuki (International Research Institute of Disaster Science, IRIDeS)

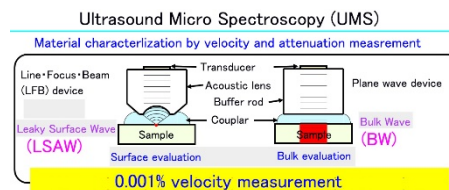
We are conducting an environmental radiation assessment to evaluate radiation doses and biological responses of wild Japanese macaques, which are the closest species to humans among wild animals in the affected areas of the Fukushima Daiichi Nuclear Power Plant accident. Nuclear disasters raise concerns about radiation exposure, but there is a lack of scientific knowledge due to the infrequency of such disasters. We have been continued our research to develop lessons learned from disaster-affected animals and to update the information on the concerns of residents and decommissioning workers.



Junichi Kushibiki

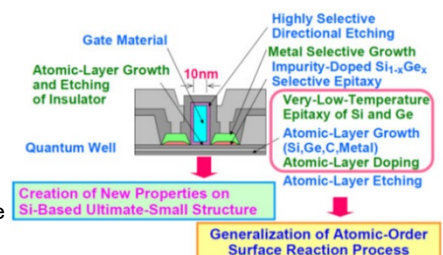
Characterization and quality control of bulk/film materials and device production processes concerned with bonded piezo substrate for SAW devices

1. Standardization of bonded piezo substrate by ultrasonic velocity
2. 3D homogenization of LT/LN film Thickness design for device structure.



Junichi Murota

For the fabrication of high-performance Si-based devices, the Atomically Controlled Processing for group IV semiconductor based on atomic-order surface reaction by Chemical Vapor Deposition (CVD) is investigated. The atomic-layer level mechanism of impurity-doped Si, $\text{Si}_{1-x}\text{Ge}_x$, and Ge epitaxial growth is described using a newly proposed modified Langmuir-type model, and the adsorption site density for reactive gases on the group IV semiconductor surface is under investigation.



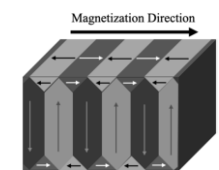
Shigeru Suzuki

In collaboration with research organizations inside and outside the university, we mote R & D to solve important issues and aims to return the achievements to the society.

1. In the electronics field, we are conducting R & D on evaluation and control of metal single crystals, which are promising substrates for next-generation power semiconductor thin films.
2. In the energy field, we are promoting R & D from a microscopic viewpoint on magnetic materials for designing functional devices such as high-performance actuators and sensors.
3. We are also engaged in the application of knowledge obtained through multiscale analysis for the utilization of various elements on the earth in the field of environment and resources.



Substrate crystal for thin power semiconductors



Micromagnetism for Function Characterization

Yasubumi Furuya:

1. Materials Processing and Energy Materials Engineering
2. Intelligent Materials Engineering and Smart Material Development
3. Development of Various Sensor and Actuator Materials & Devices
4. Non-Destructive Testing and Material Evaluation using Electromagnetism
5. Development of Magnetostrictive Alloys for Energy Harvesting, IoT-Compatible Sensor Devices
6. Green Energy Surplus Utilization Systems and Smart Agriculture Field Demonstrations
7. Research and Social Implementation of IoT-based Safe and Sustainable Technologies For Personal Infrastructure Spaces



Overview of the Demonstration Experiment Utilizing the Natural Energy Storage GEMCOS-IoT Control System at the Ayu Aquaculture Facility in the Akaishi River Basin, Shirakami Foothills, Ajigasawa Town, Aomori Prefecture