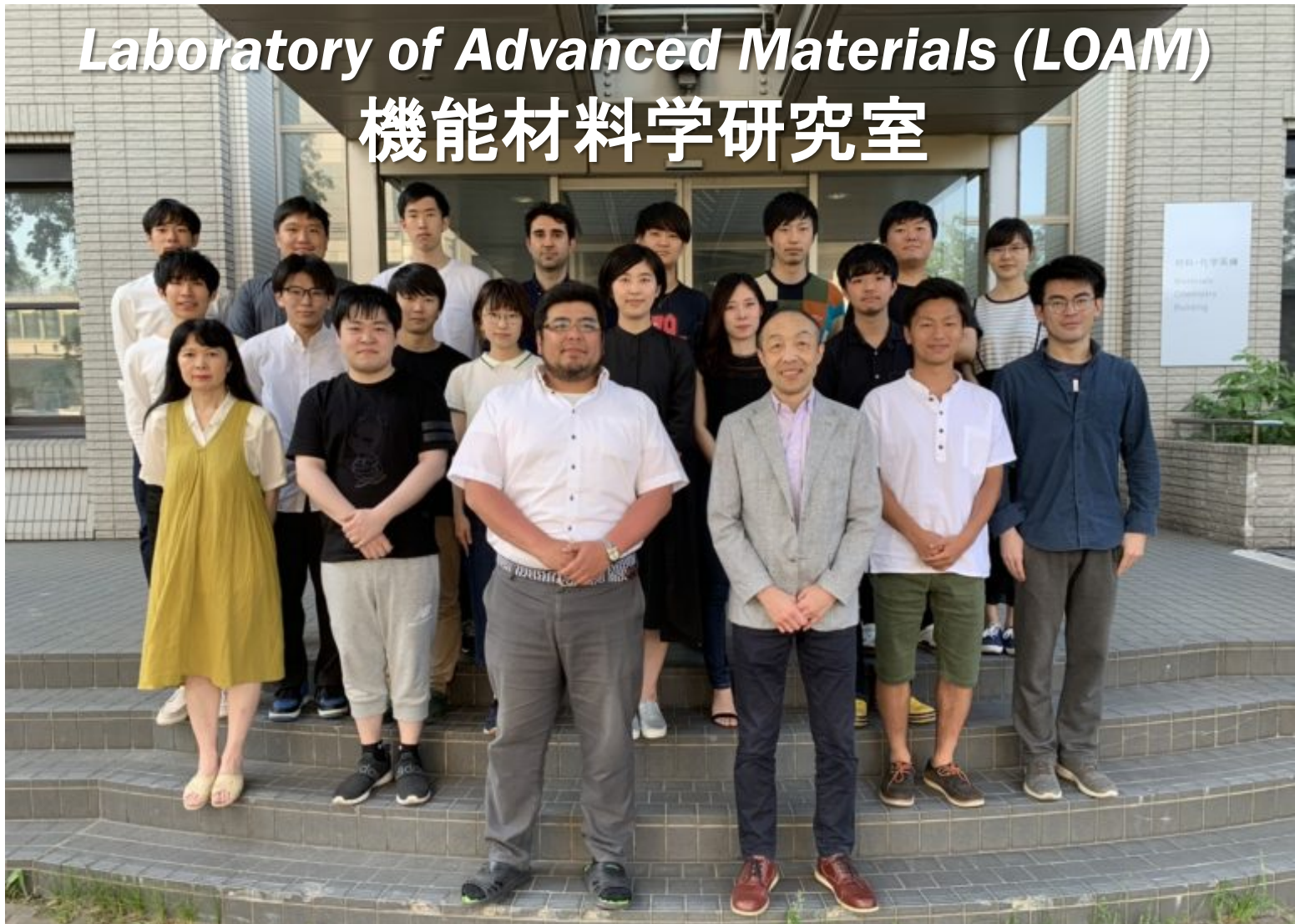


# *Laboratory of Advanced Materials (LOAM)*

## 機能材料学研究室



Prof. **N. Hashimoto**    Assoc. Prof. **S. Isobe**    Assis Prof. **H. Oka**    Sec. K. Kobayashi

DC 7, MC 12, B4 5 (including 6 foreign students)    + Internship students

# ***Laboratory of Advanced Materials (LOAM)***

## Faculties

Prof. **N. Hashimoto**



Assoc. Prof. **S. Isobe**



Assis Prof. **H. Oka**



DOP: Tokyo  
Degree: Dr. Eng. (Hokkaido Univ)  
Class: Materials Physics, Metallic  
Materials, Advanced Energy Materials, etc.  
Room: MC633  
Research Interests: Structure Materials  
for Energy Reactor, Microstructural  
Analysis, Irradiation Damage, etc.

DOP : Hyogo  
Degree: Ph.D. (Hiroshima Univ)  
Class: Solid Materials Properties, etc.  
Room: MC630  
Research Interests: Hydrogen Storage  
Materials, etc.

DOP : Kanagawa  
Degree: Dr. Eng. (Hokkaido Univ)  
Class: Materials Engineering Experiments  
Room: MC619  
Research Interests: Fuel Cladding Tube  
Materials for High Flux Reactor, Structure  
Materials for Energy Environment, etc.

# R&D of Structure Materials under Irradiation

- ✓ In-situ Irradiation Experiment by means of HVEM and Ion Accelerator

**Effect of H and He on Microstructural Development**

**Relationship between Microstructure and Mechanical Properties**

**Corrosion Behavior in SiC for Fuel Cladding Tube**

- ✓ Modeling and Simulation of Irradiation Effect

**Formation of Dislocation Loop in Fe-based Alloys under Irradiation**

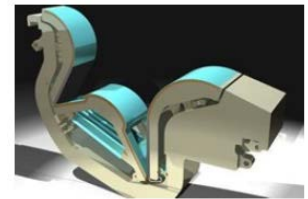
**Effect of Impurities on Vacancy Migration Energy – DFT**

**Effect of H on Tensile Property in Fe-based Alloys – MD**

- ✓ Development of Fusion Reactor Components

**Fe-based Composite Materials with High Thermal Conductivity**

**Microstructural Analysis of Carbon Nanotube under Irradiation**



## Study of Hydrogen Storage Materials

- ✓ Hydrogen Related Materials

**Hydrogen Storage**

**Hydrogen Safety (Removal, Sensor)**

- ✓ Hydrogen Reaction

**In-situ Observation of Hydrogenation and Dehydrogenation**

**Thermal Analysis on Kinetics and Thermodynamics**

**Theoretical Approach on Hydrogen Reaction by DFT**



## ***Ideal Student*** *(and Professors)* ***as LOAMers***

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- ✓ Can **Talk** in the Appropriate Language
- ✓ Can **Behave** as an Adult
- ✓ Can **Listen** to the Others
- ✓ Can **Express** his/her opinion
- ✓ Can **Take Action** by himself/herself
- ✓ Can **Work Together**
- ✓ Can **Support** the Others
- ✓ Can **Be Interested** in Various
- ✓ Love to **Hustle**
- ✓ **Study** and **Enjoy** appropriately



## Sports Activities



## Symposiums and Collaborations



## Year-end Party



## International Conferences



***Do what you want to do aggressively and properly!***