北陸先端科学技術大学院大学研究室教育指針
Laboratory Education Guideline

研究室教育指針は、学則第30条の3に基づき、研究指導の方法及び内容並びに修了までの研究指導の計画をあらかじめ明示するものです。
Based on the Article 30-3 of the general academic rules, the Laboratory Education Guideline is intended to clearly outline the methods and content of research guidance, as well as the plan for research guidance until completion.

氏名 / name: OSHIMA Yoshifumi 役職 / official position: Professor

1. 研究テーマ / Research Theme
1. Elucidation of nanomechanics using microscopic nanomechanics measurement methods 2. Exploration of electrical conductivity properties in two-dimensional materials 3. Exploration of quantum devices using microscopic techniques
2. 修得が期待される能力 / Competencies expected to be acquired 研究室教育は必修 A 科目(先端)又は研究支援科目(融合)の一部として単位化されており、この欄はそれら科目のシラバス上の達成目標の一部となります。 Laboratory Education is accredited as a part of the Required courses A (Division of Advanced Science and Technology) or Research Support Courses (Division of Transdisciplinary Sciences), and this section constitutes a part of the course goals stated in the syllabus for such subjects.
You will gain a concrete understanding of real space (particle picture) and reciprocal space (wave picture), the most fundamental concepts for understanding solid-state properties, and learn to apply this knowledge to grasp the basic characteristics of various materials. As technical skills, you will learn to operate transmission electron microscopes and vacuum equipment, which is particularly useful for work involving material analysis and evaluation. Furthermore, through weekly study sessions and paper presentations, you will develop scientific thinking skills, English proficiency, presentation skills, and communication abilities.
3. 研究指導方針 / Research Guiding Principle
Our laboratory aims to guide each graduate student to become a fully competent researcher by ensuring they correctly understand fundamental theories, use them to analyze experimental results, and synthesize their findings into conclusions for presentation. Specifically, during weekly study sessions, we collectively study foundational electron diffraction theory (concepts such as real space, inverse space, diffraction, and interference). In paper presentations, we introduce papers of mutual interest to each other. Research activities center around transmission electron microscopy (TEM), so students receive training to become proficient in operating TEM equipment. Through these activities, we also aim to develop scientific thinking skills, English proficiency, presentation skills, and communication abilities.
4. 研究室活動の内容及び方法 / Content and Methods of Laboratory Activities
□Daily Activities: □Weekly Activities: Hold weekly meetings. During these meetings, we will study fundamental electron diffraction theory together (concepts such as real space, reciprocal space, diffraction, and interference), have graduate students take turns presenting papers, and report on research progress. □Monthly Activities: □Irregular Activities: Present research findings at conferences such as the Japan Society of Applied Physics, the Japan Society of Microscopy, and international conferences related to materials science.
5. 年間スケジュール / Annual Schedule 本学の全学共通の年間スケジュールは「履修案内」の「学位取得に至るスケジュール」を参照してください。(本学HP 参照:ホーム＞教育＞履修関係＞履修案内) Please refer to the “Degree conferment schedule for the master’s program/doctoral program” in the “Degree Completion Guide” for university-wide common schedule (JAIST website: Home >Education>Taking Courses>Degree Completion Guide)

・New Student Orientation in the Laboratory (June)
・Japan Microscopical Society Meeting (June) (M2 and above, only presenters attend)
・Midterm Presentation (September) (M2 students)
・The Japan Society of Applied Physics Fall Meeting (September) (M2 and above, only presenters attend)
・Laboratory Retreat (October)
・Microscopy University (Hosted by the Japanese Society of Microscopy) (November) (Several participants selected from interested students)
・Research Plan Presentation (December) (For M1 students)
・The Japan Society of Applied Physics Spring Meeting (March) (M2 and above, only presenters participate)