

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.

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<p>1. 研究テーマ / Research Theme</p> <p>Elucidation of structures and micro-mesoscopic environments in nanoscale spaces and surfaces Advanced characterization of lithium-ion batteries (including all-solid-state batteries) and sodium-ion batteries using nuclear magnetic resonance (NMR) Development of electrode materials for next-generation rechargeable batteries and inorganic layered compounds</p>
<p>2. 修得が期待される能力 / Competencies expected to be acquired</p> <p>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.</p> <p>Students in this laboratory engage in the entire research process, from materials synthesis to instrumental analysis and scientific discussion of experimental results. As a result, students will acquire a wide range of technical and research skills, including:</p> <ul style="list-style-type: none">• Experimental techniques for materials synthesis, particularly inorganic materials• Fabrication and evaluation of rechargeable batteries• Instrumental analysis techniques, including NMR and other advanced characterization methods <p>In addition, students develop important professional skills through laboratory seminars, conference presentations, and interactions with domestic and international research groups, including:</p> <ul style="list-style-type: none">• Scientific presentation skills• Academic communication skills• English proficiency <p>Most importantly, we emphasize the development of human intellectual abilities that cannot be replaced by AI—the ability to comprehensively interpret experimental results and understand what is actually happening inside materials.</p>
<p>3. 研究指導方針 / Research Guiding Principle</p> <p>Our educational approach aims to cultivate individuals who possess both the fundamental competencies required to perform effectively in a wide range of professional fields and the knowledge and experience necessary to thrive as specialists. In research, it is extremely important to grasp the essential nature of phenomena. Achieving this requires the accumulation of fundamental knowledge, as well as the ability to think logically based on a solid understanding of experimental principles and methodologies. Through step-by-step and careful guidance in each of these aspects, we aim to develop professionals who can solve existing problems and create new values in society.</p> <p>In our laboratory, regular seminars and research meetings are held. However, because experimental schedules often vary significantly depending on the availability of equipment, students are expected to plan and execute their own research schedules. Through this research style, students develop the ability to work proactively while advancing their research through discussion and communication with others.</p> <p>In addition to presenting their research at domestic and international conferences, students</p>

are encouraged to actively participate in diverse collaborative research projects conducted with overseas research groups and industry partners. Through these activities, we aim to provide opportunities for students to develop a broad international perspective.

4. 研究室活動の内容及び方法 / Content and Methods of Laboratory Activities

日次活動 / Daily Activities : No fixed core time. On weekdays during daytime hours, students are expected to devote themselves to research unless they have scheduled duties such as lectures, teaching assistant work, or other academic responsibilities. No activities are required on weekends.

週次活動 / Weekly Activities : Paper seminar (once a week), Research progress meeting (biweekly), Reading seminar for M1 students (once a week)

月次活動 / Monthly Activities :

不定期活動 / Occasional Activities : Individual meetings (as needed), Presentations at domestic and international conferences, Participation in research seminars (e.g., Kanazawa NMR Seminar), Possible participation in industry-academia-government collaborative research, Attendance at research ethics training, Laboratory duties including chemical management and waste disposal

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)

- Laboratory orientation for new students (April or June)
- Welcome party for new laboratory members (April)
- Obon holiday (around the Obon period in August, approximately one week)
- New Year holiday (approximately one week at the end and beginning of the year)
- Conference presentations (e.g., the NMR Symposium of Japan, the Annual Meeting of the Carbon Society of Japan, the Hokuriku Branch Meeting of the Chemical Society of Japan, etc.) (September–December, March)
- Participation and presentations at the Kanazawa NMR Seminar (depending on research progress) (around November–January)
- Farewell party (March, September)