

KENGURO

Newsletter vol.28

Featured!!

- A Visit to Three Universities in Mongolia
- Internship Experiences in Taiwan, Thailand, and Mongolia
- Receiving the Oral Presentation Award at an International Conference
- Undergraduate Students' Voices from International Training Programs
- Voices from an International Student from Indonesia



Featured !!

International Exchanges with Mongolia, Taiwan, Thailand, the Philippines, and Indonesia

Iwate University promotes international student and academic exchange through university- and department-level agreements with overseas partners. This issue highlights faculty visits to three universities in Mongolia, graduate student internships in Mongolia, Taiwan, and Thailand, undergraduate online training in the Philippines, and perspectives from a long-term international student from Indonesia. These international exchange activities culminated in an Outstanding Oral Presentation Award for an Iwate University graduate student at an international conference in Taiwan.

Faculty Visit to Three Universities in Mongolia

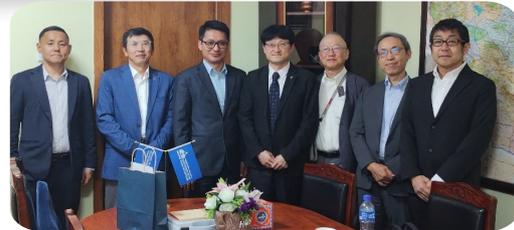
From Sep. 1 to 7, 2025, four faculty members from Iwate University—Koichiro Kobayashi (Vice President), Naoki Honma (Electrical, Electronic and Communication Engineering Course), Katsutada Matsuyama, and Koichi Konno (both Creative Informatics)—visited Mongolia University of Science and Technology, the National University of Mongolia, and New Mongol Academy, as well as the JICA Mongolia Office and the Ministry of Education of Mongolia. On Sep. 2, the delegation visited the School of Information and Communication Technology (SICT) at Mongolia University of Science and Technology. SICT and Iwate University participate in the Japan-supported M-JEED Program, through which SICT students enroll at Iwate University and engage in joint research. In addition, graduates of Iwate University are currently serving as faculty members in the Multimedia Design Course at Mongolia University of Science and Technology. On Sep. 3, the delegation visited the National University of Mongolia, where they exchanged views with laboratories in electrical and information engineering and discussed future collaboration with the dean. Iwate University students have also participated in internship programs at the university. On Sep. 4, the delegation visited New Mongol Academy, including New Mongol Institute of Technology, which provides practice-oriented engineering education and maintains active exchanges with Japanese colleges of technology and universities. The delegation also visited the JICA Mongolia Office and the Ministry of Education of Mongolia to discuss the M-JEED Program and initiatives to support Mongolian high school students studying abroad. These visits will further expand student and research exchange between Iwate University and institutions in Mongolia.



With faculty members of SICT, Mongolia University of Science and Technology (top photo).



Networking event with Iwate University alumni and graduates



Meeting with the ITE Dean and CS Department Head at the National University of Mongolia

Internship at the National University of Mongolia, *Takanobu Murakami*, M1, Design and Media Engineering Course



In September 2025, I undertook a two-week internship in the laboratory of Prof. Enkhbayar at the National University of Mongolia. My research project, Estimating photographic conditions using a 3D model of the stone walls of Morioka Castle Ruins, shared a common approach with the host laboratory's work on VR reconstruction of the Karakorum archaeological site, as both involve building three-dimensional models of historical structures from limited source materials.

Through this internship, I gained new insights into 3D reconstruction methods for historical heritage. During my stay, I participated in research presentations, VR demonstrations, and museum visits. In addition, through local connections, I had opportunities beyond my initial expectations, including a visit to Mongolia University of Science and Technology and exchanges with professors from other disciplines. Through dormitory life and organized tours, I also experienced Mongolian culture firsthand, including horseback riding, traditional clothing (deel), the traditional wrestling sport Bôkh, and local cuisine rich in fats adapted to cold climates. Experiencing these traditions helped me understand how Mongolian culture has developed in response to a harsh environment where temperatures can fall below -30°C . As this was my first experience abroad, communication was sometimes challenging due to differences in English accents. However, this made me keenly aware of the importance of comprehensive communication skills, including facial expressions and gestures. Overall, the two-week internship was a highly fulfilling experience, allowing me to gain new perspectives on research, deepen my understanding of different cultures, and appreciate the importance of effective communication.



Group photo with the Enkhbayar Laboratory, National University of Mongolia



Horseback riding tour with friends from the dormitory

Global Researcher Development Program: Overseas Internships and International Conferences

In the master's program of the Faculty of Science and Engineering, Iwate University offers the Global Researcher Development Program for students considering doctoral studies. Through this program, participants receive support for research internships abroad and participation in international conferences. In the summer of 2025, program participants Kazuki Oikawa completed an internship at National Chiayi University, Taiwan, while Yumeka Hashimoto undertook internships at two universities in Thailand. In addition, Nana Saito, also a program participant, attended an international conference held in Taiwan and received the Oral Presentation Award.

Internship at National Chiayi University, Taiwan, Kazuki Oikawa, M2, Biological Sciences Course



From September 1 to 30, 2025, I participated in a research internship in the Bio-Organic Materials Laboratory of Prof. Hsin-I Chang at National Chiayi University, Taiwan. As this was my first experience abroad, I initially felt anxious about working in an environment where Japanese was not spoken. However, thanks to the warm hospitality of the people in Taiwan, my anxiety gradually turned into a sense of comfort. During the internship, I worked on imparting fluorescence to silica nanoparticles. At first, I planned to label the nanoparticles by forming an amide bond between the carbonyl group of Rhodamine B and amino groups on the nanoparticle surface. However, despite testing multiple reaction conditions—including aqueous and anhydrous systems as well as high-temperature conditions—I was unable to obtain reproducible results. Through discussions with Prof. Hsin-I Chang and other laboratory members, I reconsidered the approach from the perspective of steric hindrance between Rhodamine B and the nanoparticles. Based on this insight, I shifted the strategy from amide bond formation to esterification. As a result, I successfully achieved fluorescent labeling of the silica nanoparticles. Through this experience, I realized the importance of persistent trial and error in tackling research challenges and gained confidence in my ability to conduct experiments even in an environment where my native language is not spoken. Moving forward, I plan to improve my academic English skills, including preparing for the TOEFL examination, and to continue striving toward an internationally active research career.



Left: Synthesis of fluorescent silica nanoparticles using a rotary evaporator. Center: Mixture of Rhodamine B and magnetic nanoparticles. Right: Magnetically purified Rhodamine B-labeled magnetic nanoparticles.

With students from the Bio-Organic Materials Science Laboratory



Internship at Two Universities in Thailand, Yumeka Hashimoto, M1, Electrical Electronics and info-Communication Engineering



Group photo at Chiang Mai University



I participated in a research internship on the agricultural applications of plasma technology, spending two weeks each at Chiang Mai University and Maejo University in Thailand, for a total of four weeks. As my usual research focuses on plasma irradiation of organic compound solutions, applying plasma technology to agriculture was a new and challenging field for me. At Chiang Mai University, I conducted experiments to investigate the effects of atmospheric-pressure low-temperature plasma irradiation on maintaining the quality of tomatoes. At Maejo University, I compared the growth-promoting effects of plasma irradiation and gamma irradiation on seeds, examining differences in germination and growth under various treatment conditions. Beyond research activities, I also had many memorable experiences. Thai students were extremely kind, and I had opportunities to go out for meals with laboratory members almost every day and to take photos wearing traditional Thai clothing, which allowed me to experience local culture firsthand. Through this internship, I was exposed to research approaches and values different from those in Japan and found the experience highly stimulating. Although I sometimes felt challenged by cultural differences, I was able to overcome them through interactions with local students, and I feel that my ability to discuss research topics in English has improved. I hope to continue pursuing research abroad and taking on new challenges in the future.



Experiment at Maejo University: observing germination and growth of seedlings from plasma-treated seeds

Excellent Oral Presentation Award at an International Conference, Nana Saito, M2, Biological Sciences Course



From December 11 to 14, 2025, I attended the 14th Asia-Pacific Symposium on the Fundamentals and Applications of Plasma Technology (APSPT-14), held at National Sun Yat-sen University in Kaohsiung, Taiwan, where I delivered an oral presentation. I presented my research titled "Effects of Low-Temperature Plasma on the Infection Efficiency of Lentivirus" and was honored to receive the Excellent Oral Presentation Award. This study was conducted as an interdisciplinary collaboration between the Takagi-Takahashi Laboratory, which focuses on applications of non-equilibrium plasma, and the Shiba Laboratory in the field of life sciences. By evaluating the infection efficiency of plasma-treated viruses in cells, we demonstrated that plasma-derived reactive species effectively contribute to viral inactivation. APSPT-14 is an international conference that brings together researchers working on a wide range of topics, from fundamental plasma science to applied technologies. In addition to scientific sessions, the conference offered networking programs such as visits to local night markets and a cruise, providing valuable opportunities for interaction. Through exchanges with students from other universities, I was able to further enhance my motivation for research. I previously spent approximately ten months as a research student at National Chiayi University in Taiwan with support from the Global Researcher Development Program. I feel that the English communication skills and research experience gained during this period played a significant role in the success of my presentation and in receiving this award.



Award ceremony (Nana Saito is third from the left)

Undergraduate Online Training with the University of San Carlos, Philippines

The Faculty of Science and Engineering offers international training programs that undergraduate students can join. In particular, the online training program organized by the language institute affiliated with the University of San Carlos in the Philippines provides not only intensive English training but also student exchange activities, including joint presentation projects with Filipino students. This program is ideal preparation for studying abroad. In the current academic year, the program was conducted for three weeks, from August 25 to September 12.

Kaito Okajima (B2), Biological Science Course



I joined this program with the goals of overcoming my anxiety about English, improving my language skills, assessing my current proficiency, and engaging in intercultural exchange. Throughout the training, I had many opportunities to interact with local instructors and students, which helped me develop my English skills. With their kind and supportive guidance, I was also able to take advantage of the convenience of online learning and gain the confidence to speak actively without fear of making mistakes. Through classes and pair activities, I learned about the diverse characteristics of the Philippines. In particular, cultural traditions such as the duck dish balut and Cebu's Sinulog Festival left a strong impression on me and sparked a deep interest in Filipino culture. In the final presentation, I introduced Japan's Gion Festival under the theme of "Comparing Festivals," which helped promote mutual understanding. I hope to use what I learned in this program as motivation to further improve my language skills and as a starting point for broadening my perspective on the world. Finally, I would like to express my sincere gratitude to all members of both universities who contributed to the preparation and successful implementation of this program.

Asahi Kajihara (B3), Chemistry Course



I joined the international training program with the Philippines to use English in a practical setting and to discuss social issues through interactions with students from different cultural backgrounds. During the program, I exchanged ideas with Filipino students on the theme of environmental conservation through reducing plastic waste. While both countries face similar challenges, I learned that differences in culture, living environments, and perspectives lead to different approaches to solutions. Throughout the discussions, I made a conscious effort to speak actively and clearly express my ideas. I realized that beyond language proficiency itself, the willingness and attitude to communicate are essential for mutual understanding. In the final presentation, I shared what I learned from the program, focusing on three key points: multiple perspectives, proactiveness, and independence. If opportunities for international training or study abroad arise in the future, I would like to participate actively and continue improving both my language skills and my sense of initiative.

Voices from an International Student

PhD student, *Tulus Na Duma*, Universitas Sumatera Utara, Indonesia



I am very grateful for the opportunity to conduct research and engage in academic discussions with professors and students at the Nakanishi-Wakiya Laboratory, Mathematical Science And Physics course, Iwate University. During my stay, I gained valuable hands-on experience with experimental equipment that I had not previously operated directly during my research activities in Indonesia. This experience significantly enhanced my understanding of experimental procedures and measurement techniques in superconductivity research.

My research focuses on cuprate superconductors, particularly the Bi-Pb-Sr-Ca-Cu-O (BPSCCO) system. In this study, gamma irradiation is applied as an external treatment to examine its influence on microstructural characteristics and superconducting properties. At the Nakanishi-Wakiya Laboratory, I conducted material characterization through low-temperature electrical and magnetic measurements to analyze changes in superconducting transition behavior and overall material performance. Access to advanced low-temperature measurement systems enabled me to obtain high-quality and reliable experimental data, thereby improving the depth and quality of my research outcomes.

Regular weekly meetings with professors and laboratory members played an important role in my research activities. These meetings provided constructive feedback and valuable insights, helping me refine my research direction. In addition, my supervisor from Indonesia was invited to deliver a seminar at Iwate University, where he presented our ongoing research activities. This opportunity marked an important step toward strengthening international collaboration and academic exchange between our institutions.

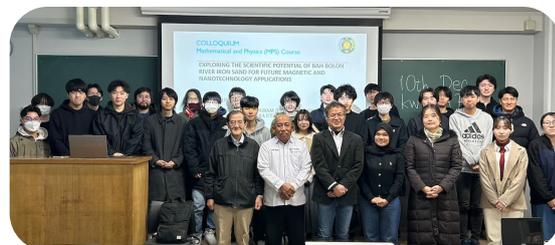
Beyond research activities, the laboratory members offered generous support in both academic and daily life. Their assistance helped me adapt smoothly to life in Morioka and fostered a positive research environment. I also had the opportunity to participate in soccer and other sports activities with laboratory members and faculty, which strengthened our relationships beyond the laboratory. Although there were language barriers at first, we built strong teamwork through mutual respect and active communication. Overall, this experience has been academically rewarding and personally unforgettable, reinforcing my motivation to pursue international research collaboration in the future.



Sample preparation (left) and measurement setup (right) used for characterizing superconducting experiments at Nakanishi-Wakiya Laboratory.



Sports activities with professors and laboratory members



Group photo after a seminar delivered by my supervisor from Indonesia at Iwate University

Editor's Note

In this issue, we introduced faculty efforts to develop new international partnerships, overseas internships undertaken by graduate students, awards received at international conferences, an online training program for undergraduate students, and perspectives from international students. We would like to express our sincere gratitude to everyone who contributed articles to this issue. Although not featured here, many students at Iwate University are studying abroad in various countries, and we also host a large number of international students. If you are aware of experiences related to overseas study, international students, or other international exchange activities, we would be grateful if you could share them with us. (Edited by Shiba)

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