



Home > Global > Tokyo Tech Global Stories > Tokyo Tech-RIKEN International School

Tokyo Tech-RIKEN International School

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Tokyo Tech and RIKEN, Japan's largest comprehensive research institution in natural sciences, joined forces to launch the Tokyo Institute of Technology-RIKEN International School in October 2007. Aimed at providing international students with an opportunity to enroll in a doctoral program at Tokyo Tech, the school provides a unique chance to receive guidance from academic supervisors at both Tokyo Tech and RIKEN. As all lectures and seminars are held in English, there is no Japanese language requirement for participants. Two participants of the program recently spoke about the challenges and opportunities provided by the Tokyo Tech-RIKEN collaboration.

Raymond Albert Wong from Canada



3rd-year doctoral student, Energy Sciences at Tokyo Tech
Surface and Interface Science Laboratory at RIKEN

Prior affiliation: University of British Columbia

Why did you choose the Tokyo Tech-RIKEN International School program?

I was initially drawn to RIKEN due to my interest in the research topic of lithium-air batteries, which can potentially lead to batteries with lifetimes many times superior to today's lithium-ion batteries. Given my prior experience working with fuel cell catalysis, I was intrigued by the non-aqueous aspects of lithium-air electrochemistry along with the chance to work with lithium-based batteries. Within RIKEN, lithium-air research was carried out in a laboratory headed at the time by Dr. Hye Ryung Byon. I visited the laboratory and saw it as a potentially good fit

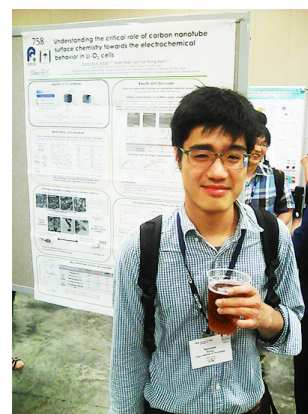
for carrying out my PhD research. I immediately saw the attractive aspects of being a student in the young and vibrant atmosphere of Tokyo Tech and at the same time working with researchers at RIKEN, as the two places could provide a beneficial environment to develop my research skills. These reasons motivated me to apply and I was subsequently accepted. Moreover, the funding and housing support provided to International Program Associates (IPAs) allowed me to focus on research without any issues relating to finances.

What were the attractions and challenges of being a Tokyo Tech-RIKEN International School program student?

The attractive aspects included the support from both institutions regarding experimental facilities and mentorship. As part of the program, students have two supervisors, one from Tokyo Tech and one from RIKEN, which can be beneficial in providing multiple perspectives to overcome any difficulties in tackling research problems. As there are a significant number of postdoctoral researchers at RIKEN, one can obtain useful mentorship from people who have recently finished their PhD. Regarding challenges, time management between experimental work at Tokyo Tech and RIKEN can be challenging, and may require frequent travel between the two locations. However, with good communication skills and a carefully thought out research plan and common goal, this concern can be largely mitigated. This is related to the challenge of finding an appropriate research project that (1) is of personal interest, (2) contains sufficient novelty within your field, and (3) is approved by both of your supervisors.



At Nagoya after conference



Poster presentation at conference

How do you see the Tokyo Tech-RIKEN International School experience now and do you have any plans for the future?

The three years of research life during my PhD was a truly memorable experience. My supportive supervisors and the labmates I had the absolute pleasure of working with made everything worthwhile. Naturally, life is quite unpredictable and it is difficult to precisely say what I would like to achieve. In the immediate future, I plan to pursue postdoctoral research to continue to expand and develop new research skills. Regarding the longer term, however, I cannot say anything concretely at this point in time.

Do you have a message for future students in the Tokyo Tech-RIKEN International School program?

I believe that this PhD program is excellent for motivated students who thrive when they are presented with challenges and are extremely passionate about the entire research process. The whole PhD experience is an excellent way to build problem solving skills and strong communication skills. These skills are beneficial in any career in industry or academia.

Outside the laboratory, Japan is a fascinating place to explore culture, food, language, and the country's natural beauty. All in all, I recommend that you consider the Tokyo Tech-RIKEN International School

program as your PhD option.



At Turkish restaurant for birthday party with labmates

Maria Vanessa Cases Balois from the Philippines



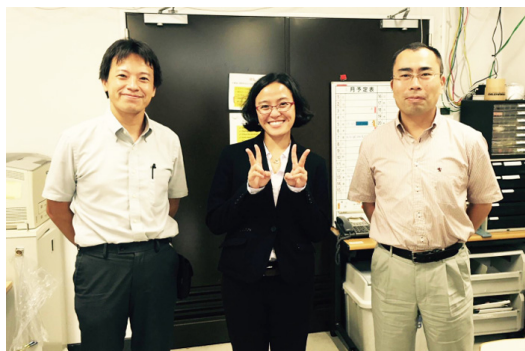
Japan Society for the Promotion of Science (JSPS) Postdoctoral Research Fellow, Innovative Photon Manipulation Research Team, RIKEN Center for Advanced Photonics, RIKEN

Prior affiliations:

Hara-Hayashi Laboratory, Electronic Chemistry at Tokyo Tech
Surface and Interface Science Laboratory, Near-field Nanophotonics Research Team at RIKEN

Why did you choose the Tokyo Tech-RIKEN International School program?

Tokyo Tech is one of Japan's top universities in both academics and research. RIKEN is Japan's leading research institute for the basic sciences — physics, chemistry, and biology. With these in mind, it is not difficult to see why I chose the Tokyo Tech-RIKEN International School program. I was able to learn and conduct research in two of the finest institutions in Japan. I specifically chose this program because I wanted to specialize in scanning probe microscopy utilizing nanophotonics. This was only possible if I worked with my Tokyo Tech supervisor, Associate Professor Tomohiro Hayashi, who is an expert in scanning probe microscopy, and my RIKEN supervisor, Dr. Norihiko Hayazawa, who is an expert in near-field nanophotonics. Another important factor was that English is the language of instruction for this program at Tokyo Tech, and most of the scientists in RIKEN can speak English very well. But what sets the Tokyo Tech-RIKEN International School program apart from the other programs for international students at Tokyo Tech is the fact that we do research at RIKEN, the home to Japan's biggest and brightest minds in scientific research. RIKEN also houses state-of-the-art equipment and utilizes techniques that a typical PhD student would not likely have access to if he or she did not join this program. Entrance into this program is highly competitive and I was fortunate enough to be part of the chosen few.



With supervisors Assoc. Prof. Tomohiro Hayashi (left) and Dr. Norihiko Hayazawa (right) after my final PhD defense



With Tokyo Tech labmates in experiment room during RIKEN Open Day

What challenges did you face as a Tokyo Tech-RIKEN International School program student?

What attracted me to the Tokyo Tech-RIKEN International School program was its unique aspect of conducting interdisciplinary research that results from the synergy between the Tokyo Tech and RIKEN laboratories. As I progressed through the program, I learned that collaboration is key especially in our modern world where communication and information are literally at our fingertips on cellphones and the Internet. This was also a remarkable chance to get the best of both worlds — premier education at Tokyo Tech and world-class research alongside Japan's top scientists at RIKEN.

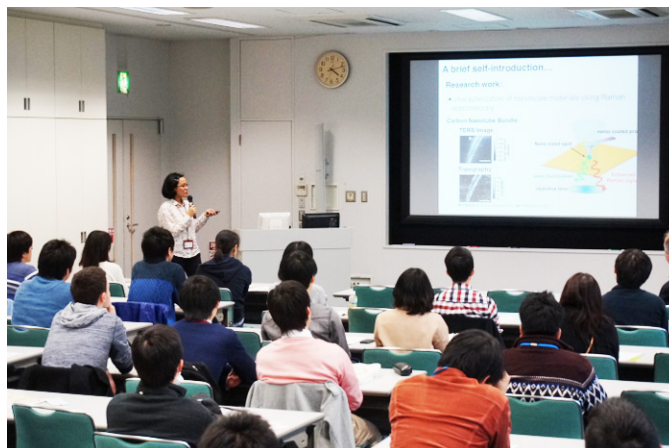
Being in such an elite program has its fair share of challenges. If I were to sum it up in three words, it would be time, money, and efficiency. The Tokyo Tech-RIKEN International School program is a three-year doctoral program and, from experience, those years go by fast. You are given an allowance that is more than enough to meet your everyday needs and then some. But there is a strict rule that this financial support is only for three years and if you go beyond that, you have to find other means to support yourself. To add even more pressure, as a student of the Tokyo Tech-RIKEN International School program, you get twice the workload. "Why?" you may ask. You have two bosses — your supervisor at Tokyo Tech and your supervisor at RIKEN. This means you have twice the amount of meetings and expectations. In my case, I had meetings at Tokyo Tech twice a week and discussions at RIKEN almost every day. I also had to juggle my time between my occasional classes at Tokyo Tech and experiments at RIKEN. It was tiring and difficult but this experience taught me how to be efficient, manage my time wisely, and make each and every day during my program count. Looking back, I am grateful for being part of this program. I learned a lot in terms of research under the tutelage of my two very capable supervisors and I was able to make very good friends in both of my labs. This entire experience transformed me to who I am now — both as a researcher and as a human being — and I have no regrets.



Winning Poster Prize at 24th International Conference on Raman Spectroscopy (ICORS) in Jena, Germany (2014)

What are your goals in terms of your future career?

In the course of the program, I was fortunate to have personally interacted with various experts — my supervisors, professors, scientists, and even a Nobel laureate. The many discussions and participation in conferences have greatly inspired me to become an educator. My hope is that I, too, may inspire students, or even just one student, to go down that enjoyable, long and winding road of scientific research, and, if I am lucky enough, nurture the great minds of tomorrow.



Explaining my research as postdoc to newcomers at RIKEN (2016)

Do you have a message for future students in the Tokyo Tech-RIKEN International School program?

My message to future students in the Tokyo Tech-RIKEN International School program is make the most out of your stay. Choose your research topic and supervisors wisely. Go into something you love or have a strong interest towards and find people you want to work with and befriend. Three years go by fast but it is a long time, too. Most importantly, do your best every day and enjoy. You will not only have the rare chance to do research both at Tokyo Tech and RIKEN, but you will be spending three years of your life in one of the most beautiful countries in the world.



With labmate at starting line during
Ookayama Ekiden Relay Race



With my proud parents after graduation

Tokyo Tech-RIKEN International School calls for application around March, and courses start in September. Please visit the following links for details.

▶ [Doctoral Program at Tokyo Institute of Technology-RIKEN International School | International Graduate Program \(B\) | Information for International Students | Prospective Students](#)

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