FGL Community

Newsletter

SUMMER 2023

It is now that time of the year – where the cool breeze of spring changes into a warm and bold one in summer. Keep yourselves fresh, cause this season will be hot and humid!

We, the FGL community, would like to present this year's edition of Summer Newsletter. We have some fresh topics, which includes new information on our Senpais as well as our Senseis! We also have news on one of our senpai whose research involves light that can bring breakthroughs in curing neurodegenerative disorders. Interesting, right?

But that's not all, because we will also feature "Wasei Eigo", which consists of Japanese words that were made from foreign words. You will certainly find some interesting words that you would never have thought of before, so don't miss it!

With that, we hope you enjoy this edition and make sure to stay hydrated!

Contents

02 ASK SENSEI

06 Beaches around Sendai

08 ASK SENPAI

13 Insight about Sendai

17 4th year Research Article

21 Wasei Eigo

Kawauchi Campus Summer View

ASK SENSEI

Professor Wei Gao, Precision Nanometrology Lab

Interviewed by Max and Rawin

A professor who teaches “Measurement and Instrumentation” classes to IMAC-U students. IMAC-U students often find his class and teaching style fascinating as he often brings common engineering tools into class and disassembles them in front of students to teach their working principles. His research interests lie primarily in precision engineering, specializing in precision nanometrology. He is an author of the books “Precision Nanometrology” (Springer), “Surface Metrology for Micro- and Nanofabrication” (Elsevier), and “Optical Metrology for Precision Engineering” (De Gruyter). He was awarded the Prize for Science and Technology from the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan, in 2019. He served as the Vice-President of The Japan Society of Precision Engineering in 2015 and is now serving as the Vice-President of The International Society for Nanomanufacturing

Can you talk about your life in general, like how you came here and how you became a professor at Tohoku University?

I was born and raised in China, and many years ago, I arrived in Japan as an international student. Like many young individuals, I had a profound curiosity about the world beyond my homeland. This curiosity, coupled with the opportunity to study abroad, led me to Japan. However, unlike IMAC-U students today, I didn't venture abroad until my master's degree. I completed my undergraduate degree at Shanghai Jiao Tong University.

At that time, information was not as readily available as it is now. Hence, my understanding of Tohoku University was limited. My move to Japan was facilitated by an exchange program set up by the Chinese and Japanese governments. Initially, I was financially supported by the Chinese government for six months as a research student. Once I was enrolled in the master's program, the Japanese government took over the financial support. This arrangement was somewhat similar to other exchange programs in different countries.

As to how I was selected for this program, the details are somewhat blurry now, but I believe my university was asked to nominate a student, and they put forward my name. Each candidate was asked to submit an application to the expected professor in a Japanese University before coming to Japan. Before embarking on the program, there was an examination organized by the Japanese government. Only those who passed this exam could proceed to study in Japan.

Upon admission to the program, I relocated to Japan and began studying Japanese as per the intergovernmental agreement. The program was extremely beneficial. We were taught by Japanese teachers/professors, mainly from Tokyo Foreign Language University and Osaka Foreign Language University, who were experts in the language. Professors from Kyoto University and Tokyo Institute of Technology taught us subjects of mathematics and physics, focusing on technical terms and concepts needed for our studies in Japanese. This was necessary, as at that time, courses were not offered in English. Hence, my initiation into Japanese was intense, requiring me to learn the language within six months, having had no prior exposure.

What made you pursue precision engineering?

Well, my major in China was precision engineering. I felt it was very natural to find a lab in precision engineering. As for why I chose that major in the first place, I used to have very good eyes, and I simply thought that in precision engineering people would use microscopes a lot. Therefore, I thought I would be competitive in such a field.

What are your favorite and least favorite parts about teaching or researching in this field?

I think I happened to get into this field simply because I had good eyes, I didn't really consider it very deeply. I didn't consider much about other departments, what they were learning or doing. I just focused on what I should do in my university courses. I think that was the theme of my university life. Most of my bachelor's degree years consisted of normal courses, but in the very last half year or so, I had the chance to work on my senior project. I think it was very interesting, we had the chance to do something like our own research, and I enjoyed it very much. Of course, I enjoyed doing the courses too, but I especially enjoyed doing my senior project. Once I got into graduate school, I didn't know how it was with other fields, but in my field, research work was very hard at first. You have to do experiments, you have to build the instruments by yourself, so that is a very challenging process. You don't always get the results you want, so sometimes it's very painful. However, after one or two years of struggling and you finally get improvements in your research and get the paper published, you will feel very rewarded and worth all the effort. I think the research process itself is also rewarding.

Do you enjoy research more or teaching more?

At Tohoku University, most of my work is research. Teaching is a very small part of it. Maybe it's because of this that I really enjoy teaching. It's a nice change of pace.

Do you think that the teaching part of precision engineering has changed over the years, from when you first studied it in your undergraduate studies to now?

I think from the teaching side of things, it hasn't changed much. Of course, now we have the internet as a massive source of information. From the perspective of how we teach the subject, the changes are not very substantial. I think the main courses are basically the same. Of course, there are some differences, for example, you now have programming courses, whereas there were none when I first studied.

However, in terms of research, I think it has changed very significantly. Because research, it is always about new things. After a certain period, it will be established. It will no longer be the focus of research, and people will move on to new things to research. So in that perspective, the field always changes.

Do you have any career goals?

When I was a student, I actually wanted to work in the industry. At that time, I was interested in making some real things/products that could be sold to the market. But I happened to be a professor. I think a lot of things in life don't go as planned. When I was pursuing my Ph.D., my lab didn't really have a full professor, so my supervisor was an associate professor. Around the time I was about to graduate, my supervisor was promoted to full professor, so I happened to become an assistant professor of the lab. I think my life has no set plans, and that's fine. I believe Japan is a fair country, rewarding those who perform well.

How do you find work interesting and fun, when, I think, the majority of people would feel otherwise?

It's very good to be a professor. You can enjoy your work. You have the freedom to choose what you want to do. Compared to researchers in the industry, where you are hired to do a certain job, university professors are free to do research in whatever they are interested in, so I think that's a privilege I have as a university professor.

What do you do for fun?

I really love my research. I think it's fun to find new ways to do some things better, faster, more efficiently, get better results, etc. I think the reason why research is fun is because you're free to explore. The nature of research is that you're free to think about new ideas. That's fun for me. For example, recently there was a student who approached me about a research project they were working on. After some discussion, I proposed an idea about a different way to do what they wanted to do, and they came back to me later to report that the accuracy of his data had increased. This kind of thing often happens in my lab, and I think that's really fun.

What about outside of work? Do you travel?

Well, I used to do sports very much. I used to play almost all ball sports: soccer, basketball, badminton, ping pong, tennis, I enjoyed playing with balls. But that gets difficult with the increase in age. I also liked swimming very much, but during the past few years, I haven't been able to do it because of COVID.

Regarding travel, before the pandemic, I used to travel a lot for conferences and other business trips. I enjoyed them very much. Outside of work, I think Sendai is a very nice place to live because there are a lot of destinations close to here. I used to drive to Yamagata, Iwate, and Fukushima because you can reach them within one or two hours.

What do you do for fun?

Do you have any food recommendations in Sendai?
Yeah, I really like beef tongue, a local special food in Sendai. I think Rikyu restaurants are really good places for that. Also, there's a restaurant called Capricciosa (カプリチョーザ), which I usually go with my family. Moreover, Saboten (さぼてん) has very nice tonkatsu (Japanese fried pork cutlet).

Sea Beaches around Sendai

Written by Sumaya Sultana

Summer is finally here, and summer holidays are on our doorsteps. Planning a trip for your long-awaited summer vacation can be hard if you are a student like me with a limited budget and DO NOT own a car. But that does not mean you sit at home and do not make it into how a summer vacation actually looks like. One activity that pops in everyone's mind when we are talking about summer vacation is chilling at the beach. With Japan being an island surrounded by sea, there are thousands of sea beaches, and the good news is that some of them are very close to Sendai city and accessible by PUBLIC TRANSPORTATION. So, why not get some fresh cool air and suntan at the beaches this summer with amazing sunrise and sunset views?

Fukanuma Beach

Fukanuma beach, located about 10 km east of central Sendai, was once crowded with people who came to swim in the summer. But the number of people coming had decreased significantly after the Great East Japan Earthquake in 2011. People have started coming here in large numbers to attend summer events, watch sunrise and swim from 2019 after it reopened for the first time. This is the only beach in Sendai with a straight coastline and the sunrise view is outstanding. The waves break consistently on sand bars attached to wave blocks which makes it good place to surf for beginners. It offers you public toilets as well. You can access the beach by taking the Tozai line subway from Sendai station to Arai station and transferring to 荒井駅（バス）that takes you to 震災遺構仙台市立荒浜小学校前 station. Then you just have to walk 650m for about 8 minutes and you are at the beach.

Photo credit: Syeda Aroob Zaidi

Shobutama Beach

Photo credit: NAVITIME JAPAN

Shobutama beach is the third oldest swimming beach in Japan. It is a place that will offer you sun, sand, waves, music, food added to lifeguards, showers, changing rooms and toilets. This beach has been completely reconstructed with a new seawall which offers an open public space to soak in the sun and enjoy the mild water of the Pacific. The unpredictable waves provide a challenging environment to enjoy for experienced surfers. Though the seawall obstructs the full view of the ocean from inland, the wall can be an extraordinary place to walk, do activities, and enjoy while watching stunning view of Pacific. To go to this beach, you need to take JR Senseki line from Sendai station to Tagajou station and walk for 2 minutes to 多賀城駅前 to take a bus to 菖蒲田 and when you get off the bus, you are at the beach.

Watanoha Beach

Photo credit: www.city.ishinomaki.jp

Watanoha beach is located in Ishinomaki city and was also significantly affected by the tsunami. After reopening for the first time in 2018 after the tsunami, it is open every year in summer for a few days. This year, the opening time has been announced to be from July 22, 2023 to August 20, 2023 from 10:00 to 16:00. It has toilet, shower, changing room, and also free parking. This can be another option to enjoy a beach environment on the sand. To go to this beach, you need to access JR Senseki line or Senseki-Tohoku line from Sendai station and get off at Ishinomaki station. Then you need to take a bus from Ishinomaki Ekimae to 伊原津 and walk 1.4km for about 18 minutes to be at the beach.

ASK SENPAI

Sarika Otsuka, 4th year AMB student

Interviewered by Aroob and Kamila

Self intro and background

Can you briefly introduce yourself?

Hello, I am Sarika and I'm from India! I am currently a fourth year AMB student. As for my hobbies, recently baking has been a big one and embroidery too! I love to work out, so any kind of sport is my cup of tea. And I've been in the boxing club at the university for almost 3 years. A lot of cardio that one.

Considering your background, are there any cultural traditions or practices from your Japanese and Indian heritages that you find intersect?

To be honest, not really. Both cultures are vastly different, especially in the way you treat people, time and money. Having grown up in an Indian household with some Japanese traditions, I did not have that big of a culture shock when I landed here. However, Indian people (in my opinion) are more friendly when you first meet them than Japanese people. They are far more reserved (but this might be due to the fact that you're an foreign student).

How was the experience settling and feeling comfortable in japan?

Settling down into dorm life itself wasn't that hard. There was some excitement in that. However, I had a bit of a hard time when I moved out to live alone. I think keeping yourself busy and finding fun things to do with friends is important to keep the feelings of homesickness and loneliness at bay.

Another thing, although I've never heard anyone else say this, Sendai does not exactly "smell" like Japan, at least the main busy areas. If you go near Japanese neighborhoods, they carry a certain "scent", I would say (which I honestly find soothing). I have found that different countries smell different. Since Sendai did not have that smell, I felt quite at home, especially since it was similar (in terms of greenery) to my hometown back in India.

School life

How did you come across Tohoku university while applying to the universities?

No big story here, but my elder brother was enrolled in the FGL program. That's how I found out. But, the period between my application and admission was a roller coaster ride. My interview was held in a city called New Delhi. However, I lived in Bangalore, a city far in the South of India. My interview could only be scheduled between two big final exams. All the while, on the plane and at my hotel, I was simultaneously studying for both the exams and the interview. I arrived back in Bangalore about 6 hours before my exam. I slept for three hours and studied for three before appearing in the exam.

Did you always plan on ending up in AMB, or did life just take you in that direction?

As for my aim to study abroad, I did end up succeeding. AMB undoubdtedly was my first choice. I did apply to a couple of other universities (I got rejected) so ending up in AMB was both like a choice and a “went with the flow” situation. I am quite satisfied and happy to be a part of it.

What challenges did you face during your study and how it affect who you are today?

Well, I would say that the first semester was quite challenging. You’re dealing (of course all students who join the FGL program) with both trying to settle into an entirely new country, place and people while trying to keep up with academics. The first semester study-wise is quite jam-packed, so trying to find a balance could be hard for some people. I’m sure that everyone spent most of their final years of high school studying a lot, so juggling between your social, academic and personal life is quite exhausting. Drown yourself in studies to get that AA, and you lose out on making new friends in the new country and you’re all alone. Too many outings and you lose that grade. It's all about the balance.

Aside from that, I quite underestimated the winter here. It is absolutely freezing. Coming from a tropical and warm country, it was bone chillingly and mind-numbingly cold. Also, I’m sure everyone went through it but yeah, online classes during the pandemic was hard. Kudos to all, we made it through.

What is the most interesting activity that you have participated in and how did you manage your routine between those activities and your study?

During my first semester here I joined the WHO dance circle for break dancing. It was great! I had always wanted to try my hand at break dancing. I showed up the first day of school and I was in. I danced at my first Gakusai (Uni Fest) with my team! It was an amazing experience.

But during the pandemic, their schedules kind of dwindled. I needed some exercise and the winter binge-eating made me gain some weight. That's when I joined the Boxing Club! Absolutely warm and welcoming people (once you get to know them, haha). I get my cardio and muscle training in, with the added bonus of being able to knock someone off their feet if they ever cross you.

One of the reasons I joined was its flexibility. Even though it was a club, they did not require you to be there every time, on the dot. It is twice a week for about three hours which I found was just right for me. On the days of, I do my assignments and meetings to be able to participate in training. I think it's a great way to get things done, as a form of deadline to yourself.

How have you experienced the differences in the teaching environments between India and Japan? Additionally, what are your thoughts on the relationship between students and teachers in both cultures?

First, we need to note that schools and universities are quite different in their teaching methods. I found this out the hard way (even though I knew that it would be so). Schools “teach” you, while at universities you are expected to learn by yourself (maybe about 70% is self-study). They’re there only to guide you.

Despite this, I feel that the student-professor relationship is more relaxed. This kind of unnerved me in the beginning because in India, there is a harsh line between students and teachers (of course, not in a bad way). They’re not your friends. They are your teachers and need to be respected no matter what. However, here, you could talk to them in a more casual way and they talk to you as though you are their equal. I still find it hard to be casual though.

Related to your field and AMB

What has been the most memorable experience you've had during your marine biology studies so far?

I would say my field work for research studies has been my most memorable experience. I got my diving license during my third year (half a year too early, to be frank, too excited haha) and when I finally started at my laboratory, going diving was amazing. I love the ocean, it's so calming. I hear many people get “wave-sick” (yes, that is a thing) but I find it very soothing. Of course, being able to first handedly work on my own research was wonderful. It is a lot of grunt work (especially going during peak winter), but the whole experience is irreplaceable.

I heard you worked hard to get a diver's license. How was the experience and what made you wanna get one (other than research purpose)?

Yes! As I mentioned above, I got my license 6 months too early in my excitement. People usually get their license during the summer when the water temperature is warmer but I was adamant in doing it when the water temperature was about 6~7 degrees celsius. It's like swimming in a refrigerator for 30 minutes. Absolute hell but completely worth it. I think it helped that my diving instructor was a great and kind person.
Outside of research purposes, I did want one in general because when I travel the world (hopefully, fingers crossed), I want to see what the other beaches and oceans look like.

Have you had any internships or work experiences related to your field? If so, what did you learn from those experiences?

I applied to quite a few internships and stuff like marine courses, but many of them were either canceled because of COVID or I couldn't get in due to my lack of experience. Sorry, can't really say much about this.

What's your future plan after graduation and in what way do you think your experience in university will support it?

Right now, I plan to pursue a master's degree to accelerate my career. I believe the things I learnt outside of studying will support me quite a bit. Living by myself, time management, self-control, discipline, learning to socialize, networking, people skills, cooking, cleaning etc (you get it). I think that for my undergraduate, although studying and graduating was a big part of it, I wanted to become independent, free to find out who I was and become the person I imagined. I've got ways to go but I plan to give myself time and dedication to focus during my masters, especially for research.

Are there any professors or mentors who have had a significant impact on your academic and professional growth?

Shoutout to my assistant professor at my laboratory, Suzuki Haruka sensei. I love her to pieces and I wouldn't have been able to do my research year without her. She was very supportive and had a direct impact on my research plans and methods as she was the one with me, out there in the field, helping me with all my sampling and measurements of my survey site. All in the blistering cold. I was new to analyzing methods of some of my measurements. Guess who helped me? You bet, it was her.

Outside of academics, she was very understanding of me. I was quite sick, you could say, during my final year, and a little before that too. She continuously told me to put my health first and take good care of myself. Yes, she is my lighthouse in the storm.

General

What is your go-to comfort food or snack when studying or pulling an all-nighter?

I don't really have a snack or comfort-food for studying. Hm, recently I have been getting a lot of Royal Milk Tea, but I am not sure if it's part of it "comforting me". Although, I was obsessed with the Choco Chip Cookies in Lawson at one point (more like a "you-did-a-good-job-today-otsukare" food).

As for pulling all-nighters, I am very sorry, but I have never pulled an all-nighter studying. I'd rather go to bed with the information that I've been able to put in my head at that point and sleep than pull an all-nighter. Sleep is my holy grail. All hail sleep.

Do you have any favorite food places and hangout spots in Sendai?

As a general place to go to eat, it's Indian restaurants, obviously. Delicious, student-friendly and cheap. The trifecta. The one place I have visited multiple times is the Masamune ramen restaurant. But instead of the ramen, I like the Spicy Aburasoba that they offer. It's the BEST. Another one is the Zunda shake at Sendai Station. I really like the texture and taste, it’s not too sweet that you can't drink the whole thing but sweet enough to satisfy the cravings.

Also, if you’ve been to other cities let us know which places and spots you’d like to go again and have that first experience all over again!

I’d like to experience going to Niigata, Yamagata and Morioka all over again. I saw the Big Three Firework festival in Nagaoka of Niigata last year. Everyone needs to put it on their bucket list ASAP. I went ice skating in Morioka and visited Yamagata for the famous Shogi pieces. And of course, Osaka for the win! Food, place, people, accent are all chef’s kiss.

Do you have any hacks in budgeting and saving? Any job ideas for new students who’ve no idea where to start?

Try to go to the morning markets for cheaper vegetables and fruits to keep up with nutrition. Also, I recommend going to the supermarkets at about 8 or 9 in the evening. We have the famous “yellow stickers” which means that everything is priced down. Go absolutely bonkers then and only then.

Nothing against people who go to the gym, but you can use the ones provided by the university for free or else join some club (bodybuilding club, martial arts clubs etc) for free. You may pay a yearly fee (low compared to monthly gymming) for equipment or sports insurance.

During the holidays, try to walk instead of taking the subway. You get to know the city and save money. You get nice toned calf muscles too. Sendai is a beautiful place, walk around!

As for jobs, most people join food-chain restaurants. They take international students more, on the whole. Many I know worked at McDs. I personally took a job in the kitchen of an Italian restaurant. I did not have to know a whole lot of Japanese and I did not have to talk to customers all that much.

For a short period of time (so tiny, because of COVID, I quit soon because I did not get shifts very often), I was a staff at a Wedding Ceremony Hall (people who organize weddings and parties). Some students take up tutoring but I think you need to be able to speak a good amount of Japanese to be able to teach Japanese high school and middle school students.

You could of course apply to some AA jobs offered by the university. I did that too for a while. Great experience, you meet a lot of new people and it's nice to know that you can help them get through what you went through.

Just apply to wherever you can, as long as you are eager and diligent, I think they will take you. Good luck!

A Little Insight about Sendai City (plus TMI)

Written by Mimie (Chanisa P.)

Where are we? Of course you will answer, 'Of course! Sendai,' right? Yes, our university is located here, but how much do you know about the city and its history? Well, if you're coming, or maybe living here already, you may want to learn more about the stories related to the place we're living in – Sendai city, Miyagi prefecture, the center of Tohoku (Northeastern) Region of Japan. In this article, I'm gonna introduce you to some of the details about our new home, Sendai!, about who was the city founder, and some other TMI related to him.

I - DATE MASAMUNE - Brief story

From the first day we arrived here until now, we must have seen the man in black armor with one eye-patch picture almost everywhere, and someday we've eventually learned his name, Date Masamune, as the founder of this Sendai City. I've lived here just for almost a year and I can already tell, he is LITERALLY EVERYWHERE. So, who is he actually? Here is the answer.

Photo credits to Sendai Tourism, Convention and International Association

Date Masamune was born in 1567 in Yonezawa, Yamagata as a successor to his Date clan. In his early days, he won his first battle when he was 15 and became the head of the family in 1584. It is also said that he lost one of his eyes to smallpox when he was a child, so he usually wears an eye-patch that then became his distinct point and make him gain the nickname 独眼竜、 or 'One-Eyed Dragon' in English. Because of his ability, he expanded his territory to the point where no previous Date clan leader could do by the age of 23. However, in 1591, he had to forfeit his Yonezawa territory to Toyotomi Hideyoshi for the Japan unification, and moved to

Miyagi Prefecture. After the death of Hideyoshi, Masamune continued to serve Tokugawa Ieyasu and established his Sendai domain, then became the first feudal lord and built his Sendai Aoba castle in 1600 (I'll talk more about it in the next part, stay tuned!) along with the Date family temple 'Zuiganji' in Matsushima, and initiated a lot of things here so we can still see until today. He lived and fought through many battles to the age of 70.

There is still a lot of historical evidence about him like letters, armours, and more; you can see them in the Aoba castle museum or Sendai city museum (unfortunately closed until 2024). Since he is the city founder and the famous warrior, he became the Sendai city's symbol that we can see everywhere now.

Credits and more interesting facts:
https://livejapan.com/en/in-tohoku/in-pref-miyagi/in-sendai_matsushima/article-a3000059/#google_vignette

II - Aoba festival and Aoba castle

After mentioning the city founder's story, I want to add some more stories that some of the people reading may not know, the first one is about Aoba castle and Aoba Matsuri! In short, the festival itself is held in late spring to celebrate when the leaves turns green (follow its name Ao - green and Ba - leaf) And as I mentioned about how the man 'Date Masamune' is everywhere, this festival is also originated by him, unsurprisingly.

In the 1590s, Date Masamune had been spending a lot of time in central Japan, where many of majestic architects and castles were located. As he had seen a lot of the cool castles, he was inspired to create his own castle as he had a plan of conquering Japan! He then hired the stonemasons from Sakai, (now it's in Osaka) to build his own Aoba castle on the mountain. After the construction work had finished, the worker as well as Masamune himself had the celebration, they drank and danced together.

The Date clan's crest (the sign representing the clan) had always been two sparrows within the circle of bamboo, and as the stonemasons' dance is inspired from it, it eventually became the 'sparrow dance'. After that, their descendents continued to work under the Date clan in Sendai, the dance then became the local tradition, and Sendai festival began every year from 1654. Much later in 1874, the government allowed the city and Date clan's descendents to build Aoba Shrine and adopted the festival as a local holiday. To this day, the festival is still held every year in late May.

Date clan crest (from https://pin.it/5hpu6qi)

Important notes: YOU CAN ALSO BE THE SUZUME DANCER! In the spring semester, Tohoku university will open a cultural collaboration class for international students as well as Japanese students to share their culture and Dance at the Aoba festival in May. Can you imagine being a part of the long-lasting festival of this community? It's amazing! I've also taken this class and I can confirm it was a very fun and valuable experience, we got to share our cultural experiences and share through the theme of Japanese culture. And we got to dance on the street, same as the local dance team too!

Picture of Tohoku University International Sparrow dance team

Let's talk more about the castle. Unfortunately, it was damaged by the great fire in 1882, before being destroyed in 1945 from the air attack in World War II, so only the castle base rocks, stone wall, and guard tower were left. Even with just those remaining, it is still one of the most popular places to visit in Sendai. There are also museums, shrines, and because it is located on the mountain, the amazing view of the city can be seen! You can also meet Date Masamune and his friends (not the real ones, of course!). Since the way of welcoming tourists here is by having the officers dressed as Masamune and other soldiers related to him, you can take pictures with them and talk to them about Sendai city!

Credits + picture credits + more interesting stories:

https://unseen-japan.com/tohoku-folk-traditions/

More information about the university's sparrow dance class! :

https://www.tohoku.ac.jp/en/news/university_news/students_to_perform_suzume_odori_at_aoba_street_festival_2023.html

About Aoba castle:

https://www.japan-guide.com/e/e5152.html

III - TMI: His Horse and its own Shrine

As many people may know the previous two topics already, I wanna add something that I'm sure most people might not know. You might've seen the Bronze statue of Date Masamune riding on the horse, right? You already know about the person and how he is seen everywhere in the city…, but you know what? The horse also has his own story too! And that's what I'll talk about.

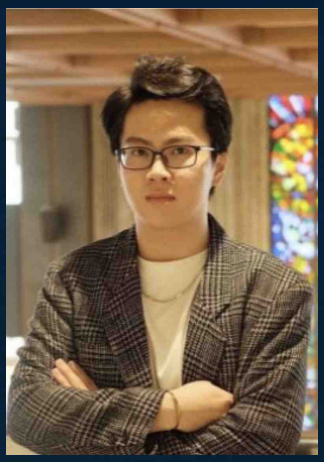
During the war period, Date Masamune once owned a horse named 'Goto' that was a gift from his closely-related horse raising and training clan. Goto was the most outstanding, brave, and loyal horse that served Masamune throughout many important battles, both before and after he moved to Sendai.

However, the horse had gotten older by the time of the last major battles to solidify Japan in Osaka in 1614. It was a long series of battles that Masamune was called to serve. Unfortunately, because of Goto's old age, Masamune cannot bring his loyal horse to those battles. He said goodbye to his horse and went to the battles. After his owner left, it is said that the horse Goto appeared to be heartbroken, realizing that he can no longer gracefully serve his master anymore. One day, he escaped from his fence and ran off from the cliff to his death.

Masamune was shocked and felt horrible for his horse, so he ordered to build of the memorial 'Kakizaki Inari Daimyojin Shrine' (蛎崎稲荷大明神) and the horses. Even though the horse's spirit was moved to the upgraded shrine near the central park, the original shrine still exists there today. We can visit the shrine devoted to the loyal and graceful horse of Date Masamune. It is the red-torii shrine with two fox statues at the entrance. You can go there by a short walk from the International Center subway station.

Credit + picture credit + more interesting stories:
https://www.sendaimotions.com/blog/halloween

Development of an optochemical tool controlling the formation and dissociation of mitochondria–endoplasmic reticulum contact sites



Quan Minh Duong,[1] Toshiyuki Kowada,[1,2] Shin Mizukami[1,2]

[1] Department of Chemistry, Faculty of Science, Tohoku University, 980-8577, Japan.
[2]IMRAM, Tohoku University, 980-8577, Japan.

Email: duong.minh.quan.p5@dc.tohoku.ac.jp

Keywords : optochemical control, mitochondria-ER contact sites.

Mitochondria-ER contact sites (MERCSs) represent crucial regions where the membranes of these organelles come in close proximity without fusing, providing hotspots for lipid metabolism, Ca^{2+} homeostasis, ER stress, and mitochondrial quality control. Their significance is further underscored by their involvement in various neurodegenerative disorders like Alzheimer's and Parkinson's diseases.[1] Thus, it is essential to develop a methodology to manipulate and visualize MERCSs with high spatiotemporal resolution, enabling us to study the real-time physiological changes occurring at MERCSs and understand related diseases. In this study, we aimed to develop an optochemical tool for MERCSs manipulation and visualization, which empowers us to study the Ca^{2+} dynamics in mitochondria during the formation and dissociation of MERCSs.

In the previous study, we constructed a photocaged dimerizer, **CBHD (Fig. 1a)**, which can control protein translocation at the subcellular levels with high spatial and temporal precision.[2] Inspired by these results, we developed a novel double-caged dimerizer, **CD1**, which can reversibly control the protein translocation from the cytosol to the mitochondria and protein diffusion. Upon the success of the proof-of-concept experiment, we leveraged **CD1** to manipulate MERCSs formation and dissociation. In cells expressing HaloTag and BL-tag-fused proteins, **CD1** was introduced and stably labeled to the mitochondria due to the covalent labeling of HaloTag **(Fig. 1b)**. Subsequently, through the illumination of blue and UV light, the photocages on **CD1** were sequentially removed, thereby inducing the formation and dissociation of MERCSs. Furthermore, we achieved to monitor Ca^{2+} dynamics in the mitochondria during the induction of MERCSs formation using a genetically encoded Ca^{2+} sensor.

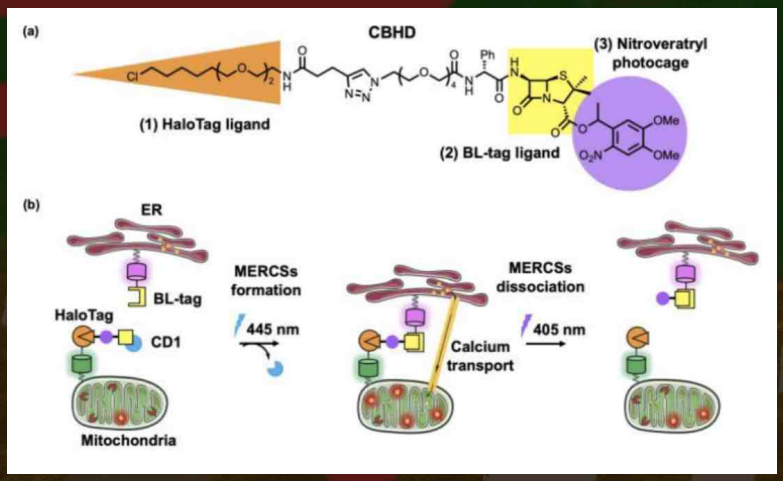


Fig. 1. (a) Structure of **CBHD. (b)** Schematic illustration of photo induced MERCSs formation and dissociation using **CD1**. Mitochondria and ER were generated by Servier Medical Art.

[1] Wilson, E. L.; Metzakopian, E. *Cell Death Differ*. **2021**, *28*, 1804–1821.
[2] Kowada, T.; Arai, K.; Yoshimura, A.; Matsui, T.; Kikuchi, K.; Mizukami, S. *Angew. Chem. Int. Ed*. **2021**, *60*, 11378–11383.

Behind the Research Article

Interviewed by Jojo and Suryo

1. Why did you decide to do research about MERCSs?

As a chemist fascinated by the interface of chemistry and biology, my research journey led me to explore the mysteries of biology at the molecular level, aiming to unravel the complexities of related diseases. When I first encountered the MERCSs (Mitochondria-Endoplasmic Reticulum Contact Sites) project, it immediately captivated my attention with its intriguing problem to solve. What could be more fascinating than developing a chemical tool capable of manipulating biology using light? It turns out that biochemists have long yearned for the ability to exert precise control over biological processes with high spatiotemporal resolution, allowing for a vivid understanding of these processes. Thus, this project represents a remarkable advancement in the field.

MERCSs are critical regions where the membranes of mitochondria and the endoplasmic reticulum come in close proximity without fusing, creating hotspots for essential cellular functions like lipid metabolism, calcium homeostasis, endoplasmic reticulum stress, and mitochondrial quality control. Their significance is further underscored by their involvement in various neurodegenerative disorders such as Alzheimer's and Parkinson's diseases. Consequently, it becomes crucial to develop a methodology that can manipulate and visualize MERCSs with high spatiotemporal resolution, enabling us to study the real-time physiological changes occurring at these sites and gain insights into related diseases. In my research, I have successfully developed an innovative tool called CD1 (Caged Dimerizer 1), which demonstrates the ability to control protein translocation and diffusion within cells as well as manipulate MERCSs and interrogate calcium dynamics in mitochondria. Currently, I am in the final phase of my project, focused on imaging MERCSs.

2. What would be the next step in using this optochemical tool to help with neurodegenerative disorders such as Alzheimer's and Parkinson's disease?

To harness the potential of this optochemical tool in addressing neurodegenerative disorders like Alzheimer's and Parkinson's disease, the next crucial step would be to study the pathological processes occurring specifically at MERCSs. By employing CD1, we can gain real-time insights into the dynamic behavior of proteins, lipids, and calcium ions at these sites. This understanding can illuminate the underlying mechanisms of disease development and progression. For instance, in the case of Parkinson's disease, a range of pathological processes occur within MERCSs, including impaired calcium regulation, disrupted lipid metabolism, and mitochondrial

dysfunction. By utilizing CD1, we may be able to monitor the behavior of proteins and investigate how alterations at MERCSs contribute to disease pathology. This knowledge can pave the way for the development of novel therapeutic strategies targeting MERCSs to restore normal cellular function and mitigate neurodegenerative disorders.

However, I have to disclaim that this is the basic research, not the applied one, so it is hard to demonstrate the applied potential. It is crucial to acknowledge that basic science holds inherent value on its own, even without immediate translational applications. While the immediate practical implications may not be evident, the foundation established through fundamental research is essential for the future development of applied science. Optogenetics and/or photo-pharmacology, as a nascent field, holds immense potential for future breakthroughs, and I believe that the insights gained from studying MERCSs using this optochemical tool will contribute to our understanding of neurodegenerative disorders.

3. What challenges did you face while conducting this research experiment?

While conducting this research experiment, I faced several significant challenges, especially considering that I am an undergraduate student delving into the world of research. Initially, I lacked the necessary knowledge and skills required for conducting research effectively. It took me a considerable amount of time, nearly half a year, to immerse myself in the relevant literature and gain a solid understanding of the field. I dedicated extensive hours to reading research articles, attending seminars, and seeking guidance from my mentors to equip myself with the foundational knowledge essential for my project.

In addition to acquiring theoretical knowledge, I had to learn practical techniques for performing experiments. While I had a strong background in organic synthesis, which facilitated the synthesis of the compound CD1, I faced a significant learning curve when it came to conducting cell experiments and imaging. These aspects were entirely new to me, and initially, I had limited experience and understanding in these areas.

Fortunately, the laboratory staff, including professors and senior students, were incredibly supportive and kind. They provided me with comprehensive training, patiently guiding me through the experimental procedures, sharing their expertise, and answering my numerous questions. Their mentorship and willingness to invest time in my development were instrumental in building my confidence and enabling me to carry out research independently.

Over time, through hands-on experimentation and continual learning, I gradually gained proficiency in cell culture techniques, microscopy, and data analysis. The challenges I faced at the beginning of the research project transformed into valuable learning opportunities that contributed to my growth as a researcher.

Moreover, being an undergraduate student involved in research posed its own set of challenges. Balancing coursework, laboratory work, and other responsibilities required effective time management and organizational skills. However, the experience of conducting research at this level has been immensely rewarding, providing me with invaluable insights into the scientific process and fueling my passion for further exploration.

Overall, despite the initial challenges, the support and mentorship I received, coupled with my determination to learn and adapt, have allowed me to overcome obstacles and make progress in this research experiment. I am grateful for the opportunity to engage in meaningful scientific inquiry and contribute to the field, and I look forward to continuing my journey as a researcher.

Wasei Eigo: The Legacy of English in Japan

Written by Avin and Ryan

Wasei Eigo, which literally translates to "Japanese-made English," refers to the unique blend of English loanwords that have been assimilated into the Japanese language over time. The roots of this linguistic phenomenon can be traced back to the Meiji Restoration in the late 19th century, when Japan embarked on a rapid modernization and Westernization process. During this period, Japan sought to embrace Western ideas and technology, leading to the influx of foreign concepts and vocabulary.

Wasei Eigo can be found in various aspects of everyday life in Japan, from popular culture to business and technology. Here are a few examples of well-known Wasei Eigo words:

1. てんぷら or 天ぷら (tenpura): The word "tempura" in English refers to a Japanese dish consisting of battered and deep-fried seafood or vegetables. In Japanese, it is written as てんぷら or 天ぷら (tenpura), which originated from the Portuguese word "tempero" (meaning "seasoning") and "têmpora" (referring to ember days, a Catholic holiday). This conflation of Portuguese terms resulted in the term "tempura" in Japanese.

2. アンケート (ankēto): Derived from the French word "enquête" (meaning "inquiry" or "survey"), "ankēto" is used in Japanese to refer to a questionnaire or survey.

3. チューハイ or 酎ハイ (chūhai): This term combines the Japanese word 酎 ((shō)chū), a distilled alcoholic beverage, and "high" (from the English term "highball"). チューハイ (chūhai) represents a popular alcoholic drink in Japan made by mixing shōchū with carbonated water and flavored syrups.

4. ギプス or ギブス (gipusu or gibusu): Originating from the German word "Gips" (meaning "cast"), both ギプス (gipusu) and ギブス (gibusu) are used in Japanese to refer to a cast (as in a plaster cast) or a plastic brace.

5. ゴム (gomu): The term "gomu" is derived from the Dutch word "gom" and is used in Japanese to refer to rubber, erasers, or rubber bands.

6. カルピス (karupisu): This Wasei Eigo word combines "cal(cium)" with सर पिस (sar)pis, which is Sanskrit for "good taste." カルピス (karupisu) refers to a popular milky soft drink in Japan called Calpis.

7. ラムネ (ramune): Derived from the English word "lemonade," ラムネ (ramune) is a lemon-lime flavored soft drink in Japan. It is often associated with its distinctive bottle and marble stopper.

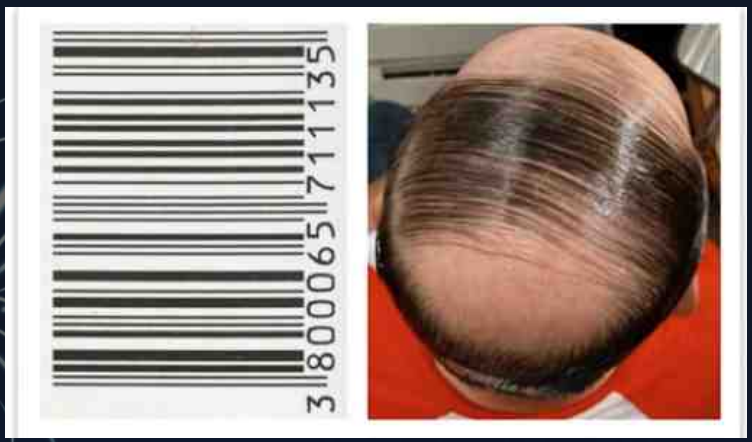
8. ウィンカー or ウインカー (winkā or uinkā): This term originates from the English word "winker" and is used in Japanese to refer to the turn signal, also known as the blinker or indicator, on an automobile.

9. ヨード (yōdo): The term "yōdo" is derived from the Dutch word "jood" (meaning "iodine") and is used in Japanese to refer to iodine.

10. ズボン (zubon): Derived from the French word "jupon" (meaning "petticoat"), "zubon" is used in Japanese to refer to trousers (UK) or pants (US).

Apart from these words, there are some comical words too. Although you may not encounter these amusing words on a daily basis, but it will be interesting to know and use them. Some of these words are:

11. バーコードヘア (bākōdohea):
Imagine someone combing their hair in stripes across a bald pate, creating a pattern reminiscent of a barcode. This comical term, derived from the English words "combover" or "comb-over," describes this unique hairstyle. It's hard not to chuckle at the image of someone trying to camouflage their thinning hair with such a distinctive arrangement.



12. ヘビーローテー (hebīrōtē):
Have you ever been so obsessed with a song that you find yourself listening to it repeatedly without getting tired of it? That's what the term ヘビーローテー captures. It's both a verb (ヘビーローテーする) and a noun that reflects the act of heavily rotating a song. The humor lies in the exaggeration of this obsession, suggesting that no matter how many times you listen to it, it will never be enough.

13. テンション (tenshon):
The term テンション is a prime example of a humorous linguistic twist. In English, "tension" usually refers to a feeling of unease or strain. However, in Japanese, it takes on an entirely different meaning. テンション refers to the lively, energetic atmosphere of a party or gathering. It embodies the high spirits and positive energy that make an event enjoyable. So, if a friend complains about a party having "zero tenshon," it implies that the gathering was dull and lacked excitement.

14. オヤジギャグ (oyajigyagu):
We all have that one person in our lives, usually an older relative like a middle-aged uncle or an embarrassing father, who loves to crack cheesy or groan-worthy jokes. In Japanese, these jokes are known as オヤジギャグ, meaning "an old man gag" or "a dad gag." The term embraces the corny nature of these jokes and humorously connects them to the image of an older person telling them. So, whenever someone tells a cringe-worthy pun or a cheap joke, it's safe to say they've delivered an oyaji gag.

15. ペーパードライバー (pēpādoraibā):
The term ペーパードライバー, derived from English, refers to a "paper driver." It humorously describes a person who holds a driver's license but lacks practical driving experience or confidence behind the wheel. The term playfully highlights the idea that their driving skills may be limited to the theoretical knowledge gained during the licensing process, making them a comical representation of someone who may not be skilled or comfortable on the road.

These amusing examples of Wasei Eigo words in Japanese demonstrate the creative and humorous ways in which English influences have been integrated into the language. They not only reflect linguistic adaptations but also provide a light-hearted glimpse into Japanese culture and the quirky aspects of daily life.

Check us out on SNS!

@FGL_COMMUNITY_TU

TU FGL COMMUNITY

FGL COMMUNITY
TOHOKU UNIVERSITY

Newsletter published by the FGL Community of Tohoku University

Other contributions:

Introduction written by Dylan

Article proofreading by Alisa

Background and layout by Steven