FGL Community Newsletter

WINTER 2023

Club Spotlight: Tohoku University Symphony Orchestra

Take a brief tour of one of the oldest university orchestras in Japan

FGL COMMUNITY
TOHOKU UNIVERSITY

ASK SENPAI: PAKORN WASSANAWATHEEKIJ
COMING OF AGE DAY
4TH YEAR RESEARCH ARTICLE: TASSAPHON TIRASUTT

Welcoming the snow and the freezing cold temperatures - winter is here again! How was everyone's winter holiday? The FGL Community Committee would like to wish everyone a merry Christmas and happy new year. We hope everyone stays warm and well despite the recent low temperatures and harsh winds. As everyone takes refuge under their warm blankets and fuzzy socks, we would like to present yet another fun read for this icy season. For this year's winter newsletter, we have prepared for you a spread on how our 4th year undergraduates are currently balancing both life and studies, an introduction on the Tohoku University Symphony Orchestra, a seasonal article about the annual Coming of Age Day here in Japan, and many more! With that being said, please enjoy your read and we hope everyone enjoys their upcoming spring break!

- The FGL Community Committee

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Club Spotlight: Tohoku University Symphony Orchestra

Alisa Yoshida Belotti

Students who poured their soul into extracurriculars throughout high school may feel anxious when it comes to whether or not they will have to sacrifice what they enjoy when enrolling in university. For anyone with these concerns, clubs and circles are the perfect solution! Clubs offer students the opportunity to meet new friends, enjoy their hobbies, and even start something new. Tohoku University is home to an extraordinary number of clubs and circles, including numerous sports teams and cultural clubs. Among these cultural clubs are many musical ensembles, ranging from Mixed Choir to Bluegrass to Rock & Roll. These music groups provide the perfect environment to keep your musical talents sharp. They also allow students who live in dorms or apartments with strict rules to practice their instruments in designated areas.

The Tohoku University Symphony Orchestra, also known as TUSO, is one of these ensembles. TUSO has over 100 years of history and stands as one of the oldest university orchestras in Japan. The Symphony Orchestra has nearly 200 members who are all dedicated to their instruments, to making music together, and to high-quality performance. Symphonic orchestras are a musically diverse group of musicians separated into four major categories: strings, like the violin, viola, and cello; woodwinds, such as the oboe and bassoon; brass, like trumpets and trombones; and percussion, like the timpani and bass drum. Musicians who are members of large orchestras are often well-versed in one instrument. Each orchestral piece is a joint project requiring around 3 months of study and rehearsal and performed by around 50 members or more as the instrumentation requires.

Regular concerts are held twice a year - in the summer and winter - and provide a high-level musical program. These concerts showcase three or four pieces that the orchestra spends months practicing, and they are open to the public with paid tickets. TUSO often plays classical works by famous composers such as Beethoven, but the orchestra may also perform modern music such as the Star Wars soundtrack for fun occasions. In addition to the two major concerts, the orchestra also performs at smaller events such as the Spring Festival, School Festival, and Farewell Concert. These events may include a full orchestra performance or showcase the talent of the group through various chamber ensembles organized by the members themselves. This year, TUSO will host a joint concert with the Kyoto University Symphony Orchestra at the end of February.

How to Join

Although the orchestra strives to achieve a high level of performance, the club is open to all skill levels! Even beginner musicians with little to no experience can pick up any instrument they find an interest in. The club owns many instruments that beginners can borrow, and experienced members of the orchestra will work with them as they learn the ropes. As everyone knows from experience, we all start from somewhere, it is a judgment-free zone! Experienced musicians who brought their instruments with them to the university are of course very welcomed and can start playing with everyone else!

TUSO hosts various events in April to welcome newly admitted students into the club. These include information sessions, chances to try out various instruments, and performances by Senpai. They also allow anyone from any grade to join, so there is no reason to feel shy if you decide to pick up an instrument in the second year! These spring events are the perfect opportunity to hear the type of music that is performed by TUSO, see if any instruments interest you, or simply ask questions to current members.

For international students like us who are enrolled in the FGL program, waiting until April to join clubs may sound disappointing. Luckily, TUSO accepts new members all year round! You may end up joining halfway through the season and be unable to participate in the upcoming concert, but there will always be opportunities to play, whether that be in small chamber ensembles or events such as the school festival or farewell concert! Students interested in joining halfway through the year can contact the club via its website or social media.

Schedules and Times

Clubs often require more commitment than circles do and will have required club costs and more frequent attendance requirements. In the case of TUSO, the number of rehearsal hours depends vastly on the seasons, which pieces you play in, and your secondary role in the orchestra. In general, every week the club meets for rehearsals on Tuesday and Friday after the fifth period (18.00), Saturday afternoon, and Sunday noon. This is the overall practice schedule for pieces played in concerts. As there can be up to four pieces performed per concert, musicians will only need to attend the rehearsals for the piece to which they are assigned, therefore students are rarely required to come in for all four days. In addition, smaller ensembles for summer events, school clubs, or farewell concerts will meet based on the schedules of each player. Lastly, members often visit the clubroom even on days that they have no rehearsals to have some individual practice time or to socialize with the other club members.

Another aspect of clubs and circles is club fees. Not all clubs have a fee, but the TUSO has operating costs that are split among the members. Fees help cover the costs of each seasonal concert; club members are also assigned a quota - a set number of tickets to sell. Additionally, the orchestra hosts training camps during the spring and summer vacations for each section, such as a woodwind training camp in the spring and a Kawauchi camp in the summer. These camps will have separate fees for participants.

TUSO welcomes all musicians who want to foster their passion for music alongside their studies. Although the club is run entirely in Japanese, many members will go out of their way to help beginners and foreigners alike. For international students, joining such a social club is an excellent way to practice your Japanese skills in both a casual and semi-formal environment! Even if you do not play an instrument, feel free to drop by one of the concerts and appreciate the wonder that is a symphonic orchestra!

TUSO Information:

Website: http://tohoku-univ-orch.com/
Email: tuso.kawauchi102@gmail.com
X: @UnivTohoku_orch
Instagram: @tuso_brass

Ask Senpai

Pakorn Wassanawatheekij (Pong)

Avin Sharma

Greetings! I had the pleasure of interviewing Pakorn Wassanawatheekij, also called Pong by everyone, a fourth-year IMAC-U student at Tohoku University. What caught my attention? Pong's not just the go-to guy for engineering insights; he brings a lively and playful spirit to the academic scene. I know him personally and he is always joking around and playing pranks on me. In this interview, we'll delve into Pong's academic journey, his research in the world of MEMS, his experiences in Japan, and how he manages the balance between academia and personal life.

Q: Could you provide an overview of your academic journey in engineering and share the inspiration behind choosing this field?

A: I've always had a thing for engineering since I was a kid. I was all about science and physics camps back in the day, and my love for them just kept growing, especially in high school. I remember organizing Math camps and participating in them and meeting new people. During my university life I was mostly stressed by exams. According to my friends, I was a social bee. I was always a friendly guy who loves to talk to people. To be honest, one of the reasons I chose this field was also because the engineering field is good paying.

Q: What are the current research projects you're engaged in? What influenced your decision to focus on this specific area?

A: Right now, I'm doing my research in the MEMS (Micro Electro Mechanical Systems) lab with Tanaka Sensei. My focus is on a haptic feedback actuator, which has applications from VR gaming to medical gear. I liked doing experimental stuff, so I chose a topic which involves a lot of hands-on experience. The lab I am working in is pretty chill, so I have more time to devote to my hobbies. I picked this because I think it's gonna be a big deal and has the potential to blow up in the future. I had also received advice about my research from my advisor, Andrea sensei.

Q: As a student living in Japan, what aspects of the country and its culture captivate you the most? Are there any cultural encounters that have significantly impacted you?

A: Japan has been an absolute delight – the standout feature being the incredible kindness and politeness of the people. The openness and friendliness go beyond just the gestures, creating an environment that genuinely embraces everyone. Growing up immersed in Ghibli films fueled my dream of visiting Japan, and now that I'm here, it's like living in the magical worlds I admired as a child. From the genuine warmth of cultural exchanges to the surreal experience of walking through the streets I once saw on screen, every day feels like a chapter from a childhood dream

brought to life. My favorite Ghibli film is Spirited Away. I do not know if it counts as a cultural impact or not but I love eating Japanese food. Especially Abura soba.

Q: Managing the demands of engineering studies and research can be demanding. At least for me they are. What about you? How do you strike a balance between your academic commitments and personal life? Are there any hobbies or interests that offer a respite from your scholarly pursuits?

A: Balancing engineering life is a hustle. I've got my daily timetable game strong, making sure I tick off all the tasks. But I remember during my first two years of engineering it was very hectic so I did not have much time to spare on hobbies. It was pretty alone back then but then slowly I started to find my people and became used to handling situations. Free time? I hit up my folks and friends back in Thailand regularly. Plus, I recharge with movies, TV shows, and uni activities like board games . I am a cinephile, so whenever someone talks to me about movies, I do not stop talking. I also am a huge fan of cats. I have two cats back at home: Toro and Miau :3.

Q: For junior students aspiring to embark on a similar path in engineering and research, what guidance would you offer based on your experiences?

A: Junior engineers, listen up! Time management is your BFF, and learn Japanese pronto; it's key for daily convos. Make friends from all over; this place is a melting pot. Talking with students from the other side of the globe and swapping our weird stories? Pure gold. Don't be embarrassed to speak up, ask questions, make friends. Also for my juniors, I would say practice the past year question papers and practice haha. They help a lot!

Seasonal Article

Coming of Age Day

Kamila Putridifa

The white fluffy snow has covered Sendai; winter has officially come. Some people might gather with their friends and make a 雪だるま (snowman), others might get into a snowball fight, engaging in a small, unofficial, probably unplanned event of playing together. In contrast, just a few days after the New Year celebration, a yearly, planned celebration came soon enough. Despite the midst of the cold weather, young people, adorned in their nice-looking clothes, gather to celebrate 成人の日 (Seijin no hi, Coming of Age Day).

This is an annual celebration for those who by April 1st of the year would be turning 20 years old, the age when they are officially considered adults. This ceremony is believed to have its roots in a tradition that has existed since at least 714 CE. During the Empress Genmei period, a young prince would wear a new robe and hairstyle. Fast forward to 1949, and Coming of Age Day was officially made into a holiday. As additional information, Coming of Age Day is usually held on the second Monday of the year.

Some sources state that in some areas, Ward Offices will start sending invitations to those who are eligible to attend the event, adding a touch of formality to the occasion. Turning 20 years old in Japan signifies a pivotal moment for youngsters as they start to be able to do things that were once illegal when they were younger, like enjoying alcoholic beverages legally.

Traditionally, participants don kimono attire (traditional Japanese clothing) during the ceremony. Considering how low the temperature in winter is, it's wise to ensure that you're wearing the right outfit. You can either prepare to wear a heat retention inner clothing or shawl to keep your neck warm. Moreover, since Kimono can be very expensive and might be challenging to be worn on your own, some people might find it more convenient to opt for a kimono rental place and having assistance with dressing.

While the tradition dates back to hundreds of years ago and signifies a deep cultural root, there's a growing trend toward Western-style clothing. Whether adorned in traditional Kimono or Western attire, 成人の日 is one of the ceremonies not to be missed, especially if you are turning 20 and interested in celebrating it together. If you are celebrating this milestone this year, congratulations on achieving adulthood!

4th Year Research Article

Tassaphon Tirasutt (AMC, 2020)

Interviewed and written by Suryo Santoso Putro and Dylan Christian Thomas

Hi! I am Zen, currently a fourth-year student of the AMC. With my interest in molecular-level science since high school, I decided to pursue my undergraduate in chemistry here, carrying a dream of becoming a researcher hoping to contribute to my homeland, Thailand. My current research interest lies in the field of quantum materials where particles inside those materials, usually electrons, behave differently from its free particle form due to the complex interactions inside, and give rise to interesting properties such as superconductivity. These materials are promising candidates to be used for future electronics such as quantum computing. Currently, I am working for my graduation research on transition metal oxides which are a class of quantum materials at Kumigashira laboratory of IMRAM (Institute of Multidisciplinary Research for Advanced Materials), which I will elaborate a bit more in the next section.

Synthesis and photoemission spectroscopy of LaxSr1-xVO3 thin films

SrVO3 (strontium vanadate, SVO) is a correlated metal exhibiting interesting properties such as metal-to-insulator (MIT) transition in the thin film form when thickness of the film is reduced to 2-3 unit cells (u.c.). The word correlated emphasizes that electrons in this material correlate or couple with things like charge, orbital, spin, and lattice inside the materials. The properties of such a system can also be tuned by introducing chemical pressure which is to dope other elements into it. Through the resistivity measurement [Fig. 1], it was found that by introducing La into SVO, intriguing phenomena occur. In the thicker film (around 100 u.c. or 40 nm), doping La induces MIT. On the other hand, in the ultrathin film of 2 u.c., doping La induces insulator-to-metal transition. Being able to understand the mechanism of this transition might pave the way for future electronics such as a transistor where ON and OFF states can be abruptly controlled. This piqued our interest to further investigate this compound through photoelectron spectroscopy (PES).

For our experiment, the film was synthesized by the technique so-called Pulsed Laser Deposition . Basically, the laser is focused on to the ceramic with desired chemical composition, in this case La:Sr:V= x:1-x:1, then the produced plume will rise and attach to the prepared substrate. Important point is that we can control the number of unit cells during the synthesis.

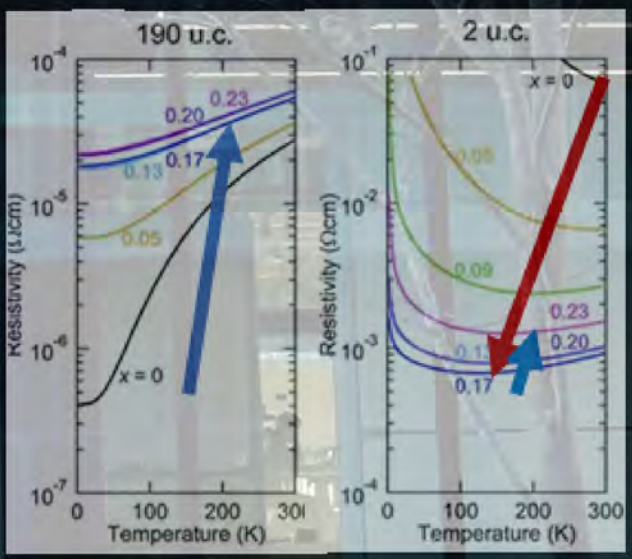

Fig.1 Temperature dependence resistivity of 190 u.c. and 2 u.c. LaxSr1-xVO3 at different x [1]

Then, the electronic band structure or electron energy level of the film is revealed using PES. This technique is just an application of a photoelectric effect that was discovered by Heinrich Hertz and explained by Albert Einstein using the particle picture of light. Simply, we shine light with specific energy, then kinetic energy of the emitted (photo)electrons can be converted into their energy levels inside the materials [Fig 2.]. With this technique, I expect to see the change in their electronic band structures at different doping concentration and thickness which will allow us to explain the anomalous phenomena that occurred in the previous study.

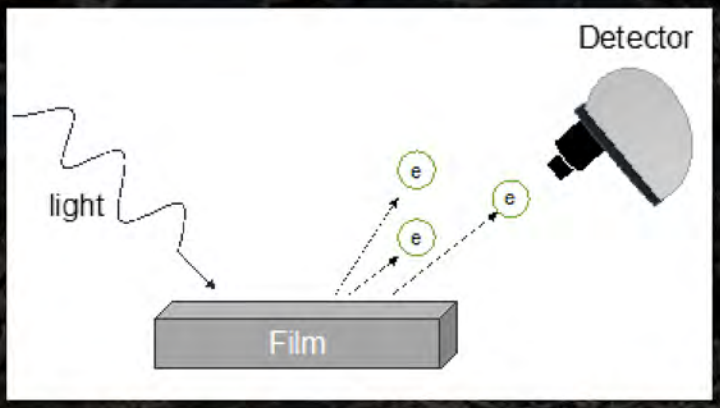

Fig.2 Photoelectron spectroscopy

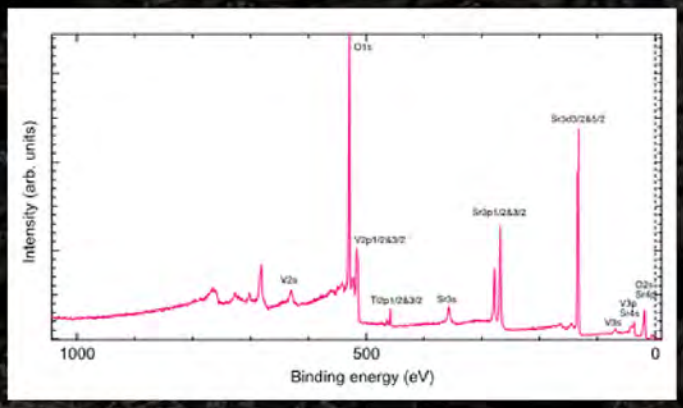

Fig.3 Example of an obtained spectra

Reference: [1] K. S. Takahashi, et al., APL Mater. 10, 111114 (2022).

Q&A

Q: How do you initiate a research project in general? Can you propose a plan on your own freely or should it be approved first?

A: In the process of research, a research plan can of course be proposed on our own, but discussion with the professor regarding its feasibility is still necessary. Especially in my laboratory because we use the synchrotron facilities in which the time for each experiment is limited, so the plan should be well-prepared.

Q: How did you arrive at this idea for your research topic?

A: Although I had an interest in this field from the very beginning, I did not have any specific materials in the field that I could pick and come up with my own topics. Therefore, I initially discussed with my professor about my current research interest in general and experimental techniques that I want to be expertise in. Then, the suggested themes were suggested for me to choose which I found that my current topic will allow me to do so.

Q: How is your experience so far with doing research in Tohoku University? Were there any struggles during the process?

A: So far, I have a very nice experience of doing research here. It is my luck to be able to do research on the topic of my interests and to utilize state-of-the-art equipment that allows me to do high-quality research. Even more, getting immersed into such a motivated research environment has better trained me as a researcher. Of course, failures and struggles are inseparable from

research. As a newbie in the lab, I often make mistakes and misinterpret the results in the beginning. However, it is these mistakes that help me to improve and understand my research much better.

Another thing that I would say that I would prefer to have is to do my research more independently. Since the time for research of undergraduate students is only a year, I was assigned to work together with other graduate students. Therefore, it is not totally free for me to do what I desire. But because of this opportunity, I learned to work as a team and communicate with other lab members. Overall, I am very grateful and inspired for the research I have been doing so far.

Backgrounds

2 - TU Aobayama New Campus
3 - UH Aobayama (left), Midori Shokudo (right)
4 - Behind EBeanS Sendai Station
5 - TU Kawauchi North Campus
6 - TU Kawauchi North Campus; International Exchange Building (left), bicycle parking (right)
7 - New Year's Day at Ōsaki Hachiman Shrine
8 - New Year's Day at Ōsaki Hachiman Shrine
9 - Near Kawauchi Station North Exit
10 - UH Aobayama Interaction Building
11 - Ōmachi Nishi-kōen
12 - TU Aobayama East Campus

Thank you for reading the winter 2023 issue of the FGL Community Newsletter!
See you next season!