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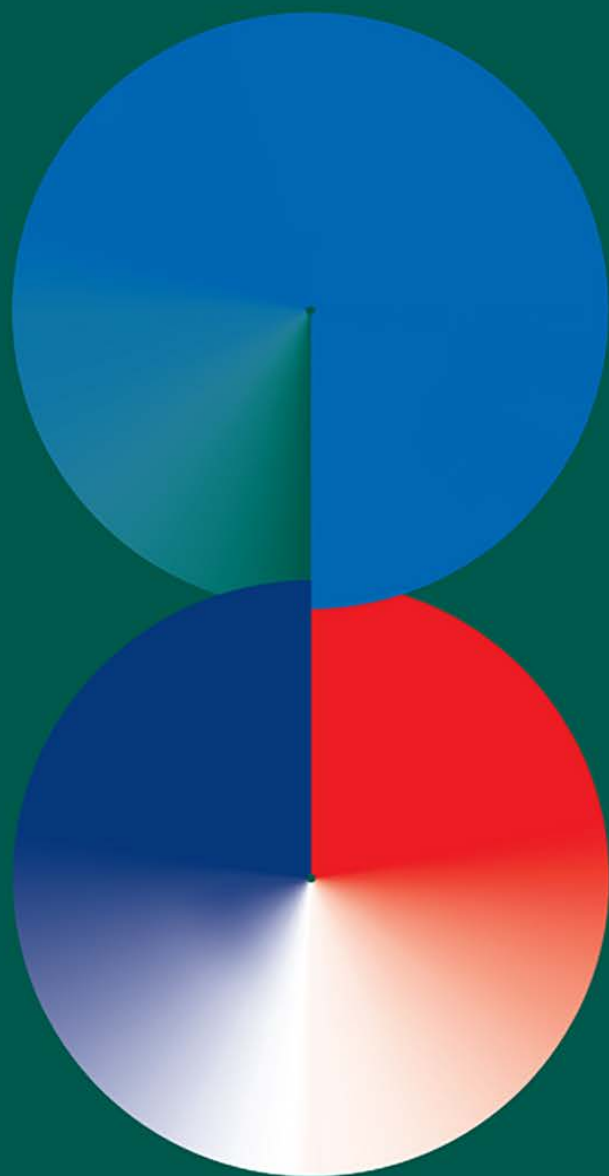


TAIWAN TECH

NATIONAL TAIWAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

DECEMBER 2020

NEWSLETTER



**The Taiwan-Paraguay Polytechnic University:
Taiwan Tech's First Transnational Education Project**

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THE TAIWAN-PARAGUAY POLYTECHNIC UNIVERSITY: TAIWAN TECH'S FIRST TRANSNATIONAL EDUCATION PROJECT

It was in 2017, that the former Paraguayan President Horacio Cartes came to Taiwan for a state visit and approached Taiwan's President Tsai Ing-wen with the idea of a joint Taiwan - Paraguay higher education institution of which President Tsai immediately agreed. And only two years later, the first students took entrance exams in Paraguay's capital Asunción to compete for one of the places at the Tai-wan-Paraguay Polytechnic University (UPTP.)

The idea was actually the brain child of Paraguay's Minister of Commerce and Industry, Gustavo Leite, who was deeply impressed by Taiwan's technological success during his visits to the island. He thought that Taiwan's system of tech-nological education was the right recipe for Paraguay. Not surprisingly, the Taiwan government sought out Taiwan Tech, Taiwan's leading institution in higher technological education, to this transnational education project. This was the birth of Taiwan Tech's first "off-shore" campus offering four-year undergraduate programs in Civil, Industrial, Information and Electromechanical Engineering, all taught in English, another

novelty for Paraguay's higher education.



Taiwan Tech President Liao Ching-jung (center) with Professors Shiu Fang-chung (right) and Teng Fu-chen (left) at the opening ceremony for the preparatory programs.

The project was new terrain for everyone, and the time line was incredibly tight: Taiwan Tech developed a blueprint for the new institution in June 2018, outlining curricula, the set-up of laboratory facilities, and necessary administrative procedures. The Paraguayan counterpart had to provide the "hard-ware", i.e. the construction of the campus, the buildings, and the administrative staff. A Taiwan Tech delegation went to UPTP for a preparatory visit in August 2018, and just one month later, the first courses



First entrance exams at UPTP in February 2019

in calculus were opened. In February 2019, the first entrance exams were held with 255 young Paraguayans competing for a place at UPTP, 109 of whom were finally admitted.

"It has been an enormous effort," said Wang Meng-jiy, Dean of the Office of International Affairs, "both for our OIA staff, as well for our pioneering faculty members. Although Taiwan Tech is a highly internationalized institution and very experienced in university administration and management, it has been a real challenge to implement one's own system in another country. There are different procedures, rules and regulations, not to mention the language barrier. We had a steep learning curve, and the experiences we gained through this project made it all worthwhile."



Parents and students check the lists for the entrance exams at UPTP

巴拉圭共和國總統阿布鐸名譽博士授予典禮 Honorary Doctorate Ceremony for President of Paraguay



Paraguayan President Mario Abdo Benitez was awarded an honorary doctorate from Taiwan Tech on October 8, 2018.

Professor Ruan Shanq-jang from the Department of Electronic and Computer Engineering who had spent two semesters at UPTP, added: "Although the facilities are not as good as those in Taiwan, Paraguayan students have a positive attitude and are very keen to learn, that makes teaching really rewarding."

Recruiting faculty, who is willing to live and work in Paraguay for a couple of weeks or months, is not an easy task. The OIA organizes experience sharing and information sessions to which professors from our alliance universities, NTU and NTNU, are also invited. So far, all professor who had been to UPTP agreed that teaching at UPTP was a rewarding and meaningful experience, and that they would return, if the opportunity arises.

Paraguayan President Mario Abdo Benitez, who took over office in 2018, also harbors great hopes for the young Taiwan - Paraguayan institution. On his first state visit to Taiwan in October 2018, Benitez was awarded an honorary doctorate from Taiwan Tech. He expressed his gratitude to Taiwan Tech for its role in the establishment of UPTP, and strongly upholds President Liao's statement that in ten or a maximum of fifteen years, UPTP will become the best technological university in Central and South America.



Marcial Bobadilla Guillen, Ambassador of the Republic of Paraguay to Taiwan, and Taiwan Tech president Liao Ching-jong are enjoying a cup of Mate Pearl Tea.

The UPTP project did not only lead to intense collaboration in education, but also brought Taiwan Tech and Paraguay closer together emotionally. One nice example is the Mate Pearl Tea project which is based on a simple idea: With Mate herbal tea being the national drink of Paraguay, and Pearl Milk Tea the iconic drink of Taiwan, why not combine the two flavors into a healthy and tasty Taiwan-Paraguayan tea drink? Taiwan Tech joined hands with partners from industry, academia, women and charity organizations of both countries to launch the "Taiwan-Paraguay Micro-Entrepreneurship Program for Disadvantaged Women" in Taiwan and Paraguay.

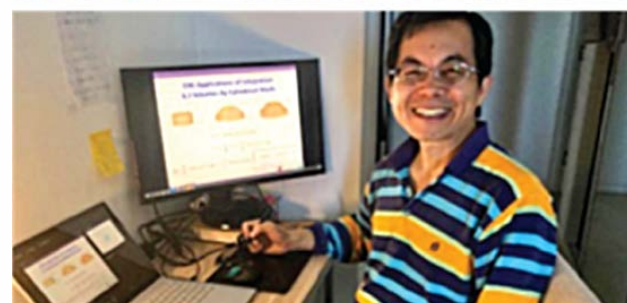
On October 27, 2020, a new drink, made of Paraguayan mate, milk and Taiwan brown sugar tapioca pearls, was introduced at a press conference on Taiwan Tech campus. Marcial Bobadilla Guillen, Ambassador of the Republic of Paraguay to Taiwan, praised the new beverage and thanked Taiwanese people for helping disadvantaged women to start their micro-enterprises, especially at a time when COVID19 epidemic was having a negative impact on women's employment.



Online student performances on Teacher's Day

When the first coronavirus infections occurred in March 2020, the Paraguay government suspended all classes and public and private gatherings. Different from Taiwan Tech, where on-campus instruction was maintained, students and faculty at UTPT had to switch to online courses. However, Taiwan Tech professors adapted quickly, and mastered the abrupt change successfully. And while virtual courses are continued even in the second semester, students showed their gratitude through musical performances on Teacher's Day in September.

The next step of the UTPT project will be the arrival of the first batch of Paraguayan students at Taiwan Tech in February 2021. As part of the four-year program, they have the chance to experience the academic environment and life in Taiwan for one or two terms. "This is the first time that we will have a big group of students from Latin America on our campus," says Lin Wei-hua from the OIA, "Much more Spanish will be heard on our campus. We are looking forward to them!"



Distant education: Taiwan Tech professors adapted quickly to the new reality

TAIWAN TECH EXPANDS ACADEMIC COOPERATION WITH CZECH TECHNICAL UNIVERSITY

Taiwan and Czech academic exchanges are going further! On September 2, 2020, President Liao Ching-jung and Professor Radek Holy, Vice President of the Czech Technical University in Prague, signed a research cooperation agreement to continue the long-term partnership between our universities. Professor Radek Holy and Professor Zdenek Havlas, Vice President of the Czech Academy of Sciences, who visited the Taiwan Tech campus, were members of a high-ranking 89-strong Czech delegation that came to Taiwan from August 30 to 4 September this year. During their five-day visit, bilateral relations in politics, business, culture, and - most important - education and research were newly established or deepened.

The Czech Technical University in Prague (CTU), one of Europe's leading universities in the fields of engineering and natural sciences, signed a university-level contract with Taiwan Tech in 2006. Since then, more than 70 students from Taiwan Tech have been to Prague for exchange programs, which makes the CTU one of the most popular exchange destinations for Taiwan Tech students. Likewise, almost the same number of CTU students chose Taiwan Tech for their exchange year - a perfect proof for a working partnership!

President Liao Ching-jung (right) and Professor Radek Holy (left), Vice President of the Czech Technical University, signed a research cooperation agreement



DELTA-TAIWAN TECH JOINT R&D CENTER ESTABLISHED: RESEARCH BUDGET OF \$30 MILLION OVER THREE YEARS



President Liao Ching-jung (left) and COO of Delta Electronics Simon Chang (right) sign the contract, witnessed by Director Chiu Chiou-hui, Director of the Department of Academia-Industry Collaboration and Science Park Affairs, MOST

On February 14, 2020, Delta Electronics, Inc. and Taiwan Tech proudly announced the opening of the "Delta-Taiwan University of Science and Technology Joint R&D Center" (JRDC) with a funding of NTD 30 million in three years. At the initial stage, the center will focus on the dynamic simulation of green data centres and energy storage systems, with the Department of Electronic and Computer Engineering and the Department of Electrical Engineering as the main cooperation partners. In the future, JRDC will also invest into 5G research, cloud computing, and artificial intelligence.

Delta R&D personnel will be stationed at the JRDC to work with Taiwan Tech faculty and students on cutting-edge research projects. With a grant from the Ministry of Science and Technology's Academia-Industry Research Center program, which aims to boost the international competitiveness of Taiwan enterprises, the center is a perfect example of an industry-government



Delta and Taiwan Tech representatives give a thumbs-up to the Delta-Taiwan Tech Joint Research and Development Center (JRDC)

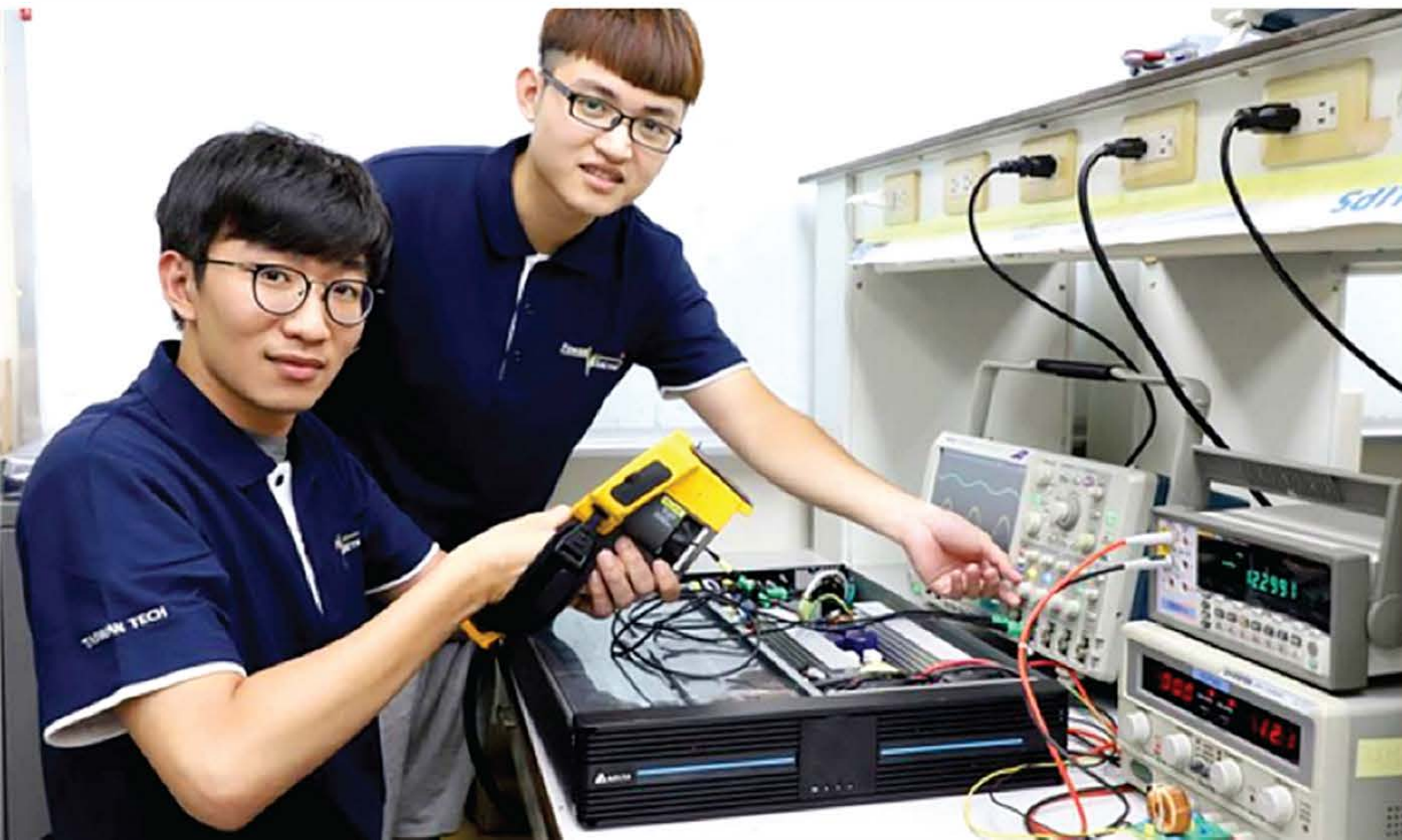
academia partnership.

Simon Chang, General Manager and Chief Operating Officer of Delta, said that it was the quality of teachers and students in the field of power electronics that led to Delta's decision to cooperate with Taiwan Tech. Delta attaches great importance to innovation, spending more than 8% of total revenue on R&D. The challenge was to find new models of industry-academic cooperation. Opening a research center on campus would help to improve communication and mutual understanding between the academic community and the industry. Furthermore, Taiwan Tech's strength in a wide field of engineering disciplines, and, in particular, its excellence in artificial visual image analysis technology, will be beneficial for DELTA's ambitions in artificial intelligence and intelligent manufacturing.

As a global company, with plants in Thailand and India DELTA was also eyeing the large number of international graduate students at Taiwan Tech. Delta will offer international internships, R&D scholarships, and pre-employment programs to attract more students to join their team.

President Liao reiterated the immense potential of this cooperation, and its contribution to the competitiveness of Taiwan's electronic industry. Most of all, this partnership will help to cultivate new high-tech talent. Through the close interaction between professors, students and DELTA researchers, students will gain practical experiences and develop problem-solving skills so that they can seamlessly enter industry after graduation, or continue their research work and start a career in academia.

Taiwan Tech doctoral students Yueh Hsuan-yu, Yu Teng-chi (from left) join the industry-academia collaboration project with Delta Electronics, Inc.



TAIWAN TECH RENEWS COOPERATION WITH FOXLINK : 50 MILLION INVESTMENT IN 5G R&D

On March 25, 2020, Taiwan Tech and *Foxlink Precision Industries (FIT)* renewed their cooperation agreement for a third five-year term of NTD \$50 million.

Foxlink established a joint R&D center on Taiwan Tech campus 10 years ago. In this highly successful industry-academia cooperation, more than 70 projects were completed. The two partners now decided to renew their cooperation for another five years, with research to be extended into the Internet of Things (IoT) and the development of 5G technology.

In addition, LI LIN, a global brand of security surveillance solutions, announced a NT\$10 million donation to Taiwan Tech to promote research and collaboration on image recognition and Artificial Intelligence. Part of the agreement is a scheme to nurture technology talents through internships and training.

President Liao Ching-jung (left) and Cheng Li (right), General Manager Foxlink Precision Industrial Communication Systems, renewed their cooperation agreement



HYDROGEN TECHNOLOGY FOR A GREENER FUTURE



Veeramanikandan Rajagopal from Tamil Nadu, India

With the global environmental and climate crisis looming over the world, environmental and energy technologies have become key research areas in many universities worldwide, and so at Taiwan Tech. Professor Huang Song-jeng of the Department of Mechanical Engineering is an international expert in the field of green energy technology who has acquired funding for two consecutive research projects on hydrogen technology from Taiwan's Ministry of Research and Technology (MOST). As Professor Huang has recently been posted as science attaché at the Taiwan Representative Office in Moscow, his colleague Professor Chiu Chun is currently supervising the research teams in his laboratory.

Veeramanikandan Rajagopal (Veera), born in Tamil Nadu, India, is a Ph.D. student in this lab, specialising on the research of hydrogen storage systems. Veera came to Taiwan Tech four years ago as a Master's student in Mechanical

Engineering, and was offered a Ph.D position right after graduation. He is excited about his research and about the potential of hydrogen technology, "I grew up in a rural area in Southern India where water is the only easily available resource. When I was a kid, I already had these fantasies about water-powered cars."

Hydrogen is the most abundant element in the universe, and can be produced from water through electrolysis or through other methods, e.g. gasification of coal and biomass. However, one of the major challenges is the safe and cost-effective storage of hydrogen gas. The most common method, physical storage in compressed gas tanks and liquid hydrogen cylinders, comes with significant energy loss during the storage process.

Veera and his team members, Ph.D. students Sathiyalingam Kannaiyan from India and Matoke Peter Mose from Kenya, are pursuing a different approach to improve current hydrogen storage systems: Metal hydrides, i.e. storage materials made of chemically-bounded hydrogen and alloys that can be obtained through a series of physical and chemical processes. They explore suitable metal alloys, and try to optimize the preparation process that allows fast storage and release of hydrogen within easily reachable temperatures. One of the cooperation partners of the Taiwan Tech team is the Technion Israel Institute of Technology, an internationally acclaimed research institution.

Although big progress has been made, material-based hydrogen storage still faces some obstacles on its way to commercialization, "The main problems are the high costs to build the storage system, its inadequate durability, and the long hydrogen refilling time", explains Veera, but he is optimistic that hydrogen technology will move the world to a carbon-free future. The opening of the world's first fossil-free hydrogen-powered pilot steel plant in Lulea, Sweden this year may prove him right.

Veera also has ambitious plans for himself: He plans to finish his Ph.D. thesis next year, and would like to continue his career in this field, either in academia or in industry.

TAIWAN TECH PEOPLE

DR. STEFANIE ESCHENLOHR



Dr. Stefanie Eschenlohr

Dr. Stefanie Eschenlohr joined Taiwan Tech in 2018, after a 20-year career with the German Academic Exchange Service (DAAD) in Hong Kong (1997 -2002), Beijing (2002 - 2010), and Taipei (2010 - 2017). She is now involved in various internationalization projects at Taiwan Tech, and she teaches in the Language Centre and in the General Studies Department. Stefanie had already spent a year in Taipei from 1984 to 1985, when she was a student of Mandarin at the Guoyu Ribao Language School.

Q. What were your reasons to come to Taiwan for work?

Stefanie: I had been working in Beijing since 2002, and around 2008 I felt that things were changing and that it was time for me to leave. I wanted to stay in Asia, preferably in a Chinese-speaking country. So, I was lucky that there was a vacancy with the DAAD Taipei Office at that time, and I applied.

Q. Why did you decide to continue your career in Taiwan after you left the DAAD?

Stefanie: I like my life in Taipei, and I thought that I could make some contributions to a Taiwan university with my long experience in international academic exchange. I am happy that I got a chance to join Taiwan Tech which feels like a "young university" to me, keen to explore new ways and to improve. In particular, I like the internationalized campus at Taiwan Tech.

Q. Let's talk about teaching at Taiwan Tech. Is this the first time in your career that you are teaching university students?

Stefanie: No, I was teaching in the European Studies Program at Hong Kong Baptist University for five years, and I was a part-time instructor for German at National Chengchi University's Department when I was running the DAAD Office in Taipei.

Q. What are your experiences with teaching at Taiwan Tech?

Stefanie: I like my students a lot, but teaching is not always easy. In particular, the courses at the General Studies Department are difficult to design. I am currently teaching a course on Contemporary Urban Culture in Europe where I want to engage students in discussions and comparisons between Taiwan and Europe. Taiwan students are quite shy and afraid of speaking up, so I am struggling to find ways to break this habit.

Q. What do you like most at Taiwan Tech?

Stefanie: I really like the colleagues and the atmosphere at the Office of International Affairs. The OIA staff does not just stick to old routines, but wants to improve and try out new things. It's a pleasure to work with them!

HOW TAIWAN TECH WELCOMED NEW INTERNATIONAL STUDENTS IN THE TIME OF COVID-19

Taiwan closed its borders in the early days of the COVID-19 outbreak, and has since managed to control the pandemic with no domestic infections since April. In July 2020, the government decided to slowly open the country again. In the beginning, the Ministry of Education only gave green light for students from 21 "safe" countries to come to Taiwan for a full-time degree course at a university. A special check-in counter was set up at Taoyuan airport to help incoming foreign students arrange quarantine procedures. It was mid-August, when the permission was extended to all countries, so that our international freshmen could finally start to apply for their visa and prepare the trip to Taiwan.

For staff of the OIA, this announcement meant a lot of detailed planning and overtime work: Taiwan Tech staff was at the airport almost around the clock, greeting the students as soon as they got out of the plane, and guiding them through the immigration and epidemic prevention procedures. They were then transported to a centralized quarantine facility arranged by the government where they had to undergo a 14-day quarantine. By mid - October, Taiwan Tech welcomed a total of 144 foreign students from 22 countries, most of them coming from Indonesia, Vietnam, Thailand and Ethiopia.



Staff from the Ministry of Education and universities welcome foreign freshmen at the airport



Taiwan Tech staff in protective clothing at the MoE airport booth

2020 TAIWAN TECH SUMMER SCHOOL: AN INTERNATIONAL EXPERIENCE AT HOME

While the Covid-19 epidemic has made international events impossible, Taiwan Tech decided to go ahead with its annual International Summer School, jointly organized by the College of Engineering and the Office of International Affairs. Taiwan Tech international students who spent the summer on the campus were invited to join the summer school on "Smart Technology and Sustainable City" from 27 July to 2 August 2020.



The main target group for this "Corona" summer school were Taiwan students from senior high schools and vocational training institutions. The idea was to invite them to Taiwan Tech campus for one week so that they would get a taste of Taiwan Tech's academic and living environment. This was obviously a good idea: 42 students from 18 senior high schools and vocational schools from all over Taiwan signed up for this event which was held on Taiwan Tech campus from July 27 to 30, followed by a second part on the campus of *National Dong Hwa University* in Hualian.

The Summer School began with an introduction into the study opportunities at Taiwan Tech on the first day. Deans, department chairmen, and program directors, all came in person to present their programs and departments to the young audience. On the following days, students had the chance to join courses - all taught in English by Taiwan Tech professors - on "Smart Technology and Sustainable City". Some of the highlights were the workshops "Design and Smart Society" and "How Wooden Architecture Can Shape a Sustainable".



Modern City" where students worked in small teams on some challenging issues that cities are facing nowadays.

On the weekend, all participants moved to the campus of National Dong Hwa University in Hualien to take part in the 2020 Summer Walking Hualien Camp. Our international students, who could not return to their home countries during the summer break, were thus given the opportunity to enjoy the scenery of the east coast, experience aboriginal culture, and to mix with the Taiwanese school kids who were quite keen to try out their English. The Summer School ended with a spectacular whale watching trip off the Hualien coast.



A post-event survey showed that more than 70% of the participants were considering to enroll at Taiwan Tech next year. For the OIA staff, who had put a lot of effort into the organization of this summer school, the positive feedback was an encouragement to design other programs that involve international and local students and school kids. Projects like this summer school show that "Internationalization at Home" is not just a catchy slogan at Taiwan Tech, but a concept filled with life.



2020 TAIWAN TECH SUMMER TIME ACTIVITIES

While Taiwan Tech campus is usually deserted during the hot summer months, things were quite different in this year's "Corona-summer": International students had to spend a "staycation" in Taiwan, as quarantine regulations prevented them from returning to their home countries during the holidays.

Hoping to turn our international students' "staycation" into a memorable experience, the OIA designed a whole series of weekend activities that showcased Taiwan's natural beauties and rich cultural heritage. The following pictures are records of the many enjoyable events.



Paintball competition: Paintball requires a combination of individual physical strength and teamwork. The paintball battle was followed by a water balloon game to relax and cool down.



Night fishing cruise in Keelung harbor: Students enjoyed the beautiful scenery of Taiwan's north east coast on a night fishing cruise that ended with a delicious seafood dinner accompanied by karaoke performances.



Hualien at Taiwan's scenic east coast: Students enjoyed a whale-watching cruise and the unique culture of Taiwan's indigenous people during a three-day excursion to Hualien.



Making handmade noodles in Shiding: In this workshop, students were taught the art of traditional noodle-making. After their efforts, they had the chance to taste the unique flavor of their products.



Daxi, Taoyuan: The 2020 Taiwan Tech Summer Time Activities ended with a guided tour through Daxi Old Street in Taoyuan, which is famous for its blend of modern and traditional architectural styles.



AVENGERS WIN FIRST TAIWAN TECH INTERNATIONAL STUDENTS SOCCER TOURNAMENT

Taiwan Tech held its first international student soccer tournament on November 18, 2020. The idea of having a soccer competition was enthusiastically welcomed by our international student community, with a total of eight teams and eighty players signing up.

Four teams made it into the finals: The *Avengers*, a mixed team, *IATP* with players from the College of Engineering, *ISA* an Indonesian student team, and *ETHIO* with players from Ethiopia. The stakes for the finals were high, as the winning team was to represent Taiwan Tech at the upcoming *Three University Alliance Games*.

It was an exciting competition on a beautiful autumn day, with excellent teams and many cheering Taiwan Tech soccer fans. The Avengers turned out as the strongest team, the runner-up teams being *IATP*, *ISA* and *ETHIO*.

The next challenge for the Avengers will be the *Three University Alliance Games* on December 19, 2020, where they will have to fight against the teams from NTU and NTNU. We are looking forward to this event, and are keeping our fingers crossed for the *Avengers*!



INDIAN STUDENTS ORGANIZE "ROCK ON DANDIYA" FESTIVAL

The number of Indian students and researchers at Taiwan Tech is increasing, and so is the visibility of Indian culture on our campus. While cultural events at dance-crazy Taiwan universities often feature Korean pop-culture inspired performances, the Taiwan Tech *Indian Cultural Association* staged a completely different event: The "Rock on Dandiya" festival on October 17, 2020 centered around *Dandiya Raas*, a socio-religious folk dance originating from the Indian state of Gujarat, where men and women group together in large circles and dance with decorated sticks.

More than 120 Taiwan Tech staff and students from different countries joined the event which was opened by Professor Yang I-Tung, Chairman of the Department of Civil and Construction Engineering, in a real puja ceremony with flowers and the lighting of *diyas*, traditional oil lamps. *Rock on Dandiya* did not only feature dance competitions, but also authentic Indian food, games, and the *Taiwanese-Bollywood Beats* Program, a cultural fusion experience where Taiwan popular music met Indian Bollywood tunes.

This first *Rock on Dandiya* Festival was a very special cultural event and a joyful experience. Everyone is already looking forward to the 2021 edition of *Rock on Dandiya*!





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