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Publisher

Sea-Fue Wang

Executive Editors

Cherng-Yuh Su
Ho-Chiao Chuang

Editors

Yun-Hua Yang
Chia-Yu Hung
Jessie Lin
Siao-Jing Chen

English Copy Editor

Chia-Yu Hung

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Taipei Tech well-positioned to strive in US-China trade war

Taipei Tech's new research building will house several research centers that Taipei Tech co-organizes with five top American universities, including MIT and UC Berkeley

Taipei Tech's new research building is scheduled to open in 2020. Upon completion, it will house several research centers that Taipei Tech co-organizes with five top American universities, including MIT and UC Berkeley.

The first of these research centers will be with MIT Media Lab. According to Taipei Tech President Wang Sea-Fue, Taipei Tech and Media Lab have been working closely to develop lightweight self-driving cars in Taipei. Wang is especially proud of the seven Taipei Tech exchange students in MIT Media Lab, saying they are really good at turning concepts into prototypes.

Through the introduction of an alumnus, the Dean of UC Berkeley College of Chemistry has visited Taiwan for two consecutive years. In 2020, Berkeley will set up a chemical and biomedical research center in Taipei.

The University of Cincinnati (UC), well-known in the field of industrial automation, has also started a smart sensor joint degree program with Taipei Tech. UC is also planning to set up a research center at Taipei Tech to jointly work on artificial intelligence, intelligent manufacturing, and robotic arm technology. Penn State University, known for its numerous industry-academia partnerships, is investing in smart medical and smart manufacturing projects with Taipei Tech.

For many years, the University of Texas at Arlington (UTA) and Taipei Tech have been running a joint dual degree program in EMBA, and UTA president has also visited Taipei Tech many times. Wang revealed that the two sides are now in talks of collaboration in big data and civil construction management research projects.

All of these collaborations can easily be turned into business opportunities, according to Wang. He pointed out that Taipei Tech will share the research results and intellectual properties coming out from these research centers. Through the extensive alumni network, these key know-hows and intellectual properties can be quickly applied and turned into products.

"Our students are good makers," Wang said, "Before taking anything to mass-production, Taiwan is a good base for prototype development and testing." He further explains that the US has a strong high value-added software and systems sector, but the shrinking manufacturing sector has made it difficult to prototype products in the US. Taiwan has strong software and hardware integration capability, and with the US-China trade war, Taiwan has become one of the best choices for product prototyping and testing.



President Hideo Ono said that he has been looking forward to deepen the relationship with Taipei Tech since the bilateral conference in 2018

Taipei Tech signs partnership agreement with Tohoku University, hopes to deepen collaboration

President Wang Sea-Fue of Taipei Tech led a delegation to Japan on November 25 and consolidated the sister-school relationship with Tohoku University during this trip. Wang also signed a letter of intent of an exchange program of graduate students. The two sides agree to continue deepening the collaboration relationship.

Tohoku University is ranked eighty-second in the QS World University Rankings and forty-third in the field of materials science. It has world-renowned research capabilities. The formal exchange between Taipei Tech and Tohoku University began with Tsai An-Pang, a late alumnus of Taipei Tech. He was a Tohoku University distinguished professor who ran the Environmental Inorganic Materials Chemistry Lab. Through him, several Tohoku University scholars visited Taipei Tech in the new energy material conference co-hosted by the two sides in 2018.

President Hideo Ono of Tohoku University said that he has been looking forward to deepen the relationship with Taipei Tech since the bilateral conference in 2018. Through the second installment of the conference this year, scholars and delegates from the two universities could meet at Tohoku University and form a formal partnership. Ono hopes that the two sides will have more cooperation opportunities in the future.

Wang pointed out that Tohoku University is a university with first-class research capability in Japan and in the world. Through Tsai, he has visited Tohoku University a few times in the past, and departments of the two universities have been working together. He has been working on to form a formal partnership with Tohoku University and is glad to see it being realized. Wang hopes this agreement will expand the opportunities for students and faculty members of both schools.

International partnership has been Wang's major policy since he took office in 2018. Taipei Tech now has university-level and department-level partnerships with 386 universities around the world. They include MIT, Penn State University, the University of Cincinnati, the University of Texas at Arlington, the University of Tokyo, Waseda University, Osaka University, Kyushu University, and many others. Tohoku University is the first Imperial University (Japan's equivalent of the Ivy League) to establish a university-level partnership with Taipei Tech. The president of the University of California, Berkeley also visited Taipei Tech recently to discuss research cooperation.

Taipei Tech ranked top 100 in QS Asia University Rankings 2020

The London-based higher education consulting company Quacquarelli Symonds (QS) has recently announced their 2020 Asian University Rankings. Taipei Tech enters the top 100 for the first time, ranking 95th.

The ranking of QS Asian University is based on eleven items, including academic peer review, employer reputation, faculty-student ratio, international orientation, citations per faculty, and total faculty publications. In the past year, Taipei Tech has greatly improved its international reputation and visibility. This is especially evident in the rise of Taipei Tech's international research cooperation ranking in QS, from below 300 in 2019 to the 258th place in Asia in 2020.

Since President Wang Sea-Fue of Taipei Tech took office in 2018, he has been encouraging faculty members to work closely with scholars from world-renowned universities such as MIT, Penn State University, and Tohoku University on research projects and co-authoring papers. Wang is also committed to provide students with world-class learning resources by setting up joint AI and Big Data programs with the University of Texas at Arlington and joint smart sensor program with the University of Cincinnati. The president of UC Berkeley has also recently visited Taipei Tech to discuss potential research cooperations.

Wang points out that Taipei Tech is strong in the research and development in three areas: energy, smart sensor, and advanced materials processing. Taipei Tech is working with five top American universities—UC Berkeley, MIT, Pennsylvania State University, the University of Cincinnati, and the University of Texas at Arlington—to establish several research centers. These research centers will be set up in the new research building that is scheduled to open in 2020. This will be a base for integrated research and development, interdisciplinary talent cultivation, and international research communication, making Taipei Tech a top international technological university.

In addition to making great progress in international university ranking, Taipei Tech faculty members have also recently received many accolades. President Wang has been elected as a member of the Asia Pacific Academy of Materials (APAM) in 2019, recognizing his contribution in the field of materials science. Sung Yu Chi, Dean of College of Engineering, and his research team received the American Society of Civil Engineers (ASCE) T.Y. Lin Award in 2019. Sung has also served as the president of the Chinese Society of Structural Engineering.



It's a big leap for Taipei Tech to advance to 95th in QS Asia University Rankings 2020



At the final, the Unsullied team composed of four Filipino students from MUST won the grand prize

Students connect with the industry through the Global Transmission competition

Responding to the rise of Industry 4.0 and smart machinery, Taipei Tech has been working with Global Transmission Technology Co. to organize the "Global Transmission Intelligent Automation Competition." This year saw the fifth installment of the contest, with more than thirty-seven teams participating and a total value of TWD\$3 million in award and supplied components. The final was hosted on December 6, and the Unsullied team composed of four Filipino students from Minghsin University of Science and Technology (MUST) won the grand prize.

Liang Ruoh-Huei and Jen Fu-hua of MUST Department of Mechanical Engineering lead the Unsullied team. The students designed an automated farming helper bot called the "Gantry Automated Agbot," which can be programmed to perform all kinds of farming activities including seeding and watering and thereby reducing the need of human labor. Unsullied won the TWD\$150,000 grand prize.

The runner-up is the "Pioneer Shark No. 1" made by a team of Taipei Tech mechanical engineering students and led by Tseng Shih-Feng. The team uses Micro LED as the light source to develop a linear laser annealing system and process. This new technique can be used to replace the current radio frequency-based annealing technique to shorten the coating time of metals. They also introduce carbon dioxide in the process to improve the conductivity of the coating.

The third place winner is the C_C Knee team composed of four Taipei Tech mechanical engineering students and led by Wang Jia-Chang. Their "3D-printed Knee Pads" are

different from the traditional bulky image of knee pads. Using 3D printing technology, the team can customize knee pad lining to fully fit the user's knee and thereby improve the protective effect. The team also uses thermoplastic polyurethane (TPU) as the material and adapts advanced fabric weaving technique to make the knee brace strong, lightweight, and flexible.

This competition is co-organized by Taipei Tech and Global Transmission Technology and has twelve industry sponsors that provide consultancy and components. According to Yang Chung-Kuang, VP of Taipei Tech, all of the teams that passed the preliminary competition participated in workshops offered by the industry sponsors of the competition. The teams also had access to components and processing facilities and techniques of the sponsors. Yang said having access to the industry is the most valuable aspect of this competition.



This competition is co-organized by Taipei Tech, and will be transferred to Chinyi Tech as the co-organizer next year

Wood, Craft, Home exhibition explores the meaning of home



The exhibition features over 100 woodworking pieces from 8 manufacturers and 33 universities

Wood, Craft, Home exhibition, hosted by Taipei Tech industrial design department, took place in Taipei Expo Park from November 14 through 17. The exhibition features over one hundred woodworking pieces from eight manufacturers and thirty-three universities, including Taipei Tech's partner institutions from Japan and the Czech Republic. Czech envoy to Taipei Patrick Rumlar also attended the exhibition. This exhibition showcases the different interpretations of home through woodworking.

Taipei Tech VP Jen Yi-Jun highlights several rule-breaking aspects of this exhibition. This is the first time that Taipei Tech hosts a similar woodworking exhibition outside of the campus. The exhibition also integrates digital and interactive technologies for the audience to fully immerse in the arts. The featured works from abroad also lend the exhibition a larger scale in the definition of home, and the works of local designers punctuate a familiar understanding of the theme while giving it an interesting spin.

"The main installation of the exhibition is designed by our Woodworking Center," said Chen Tien-Li, curator of the

exhibition and Director of Taipei Tech Woodworking Center. "It features many hexagons, each containing a piece of work from a participating partner, that form a piece of work we call 'Wind Nest,' which signifies our strong partnership," says Chen. Taipei Tech offers the only woodworking industrial cooperation program in Taiwan. This program engages students with hands-on learning in an environment modeled after real-world woodworking factory.

The woodworking department was one of the original departments when Taipei Tech was founded in 1912, and Taipei Tech has established itself in recent years as the leading institute in training woodworking professionals.

"Tortoise Table" and "Nest 3.0" are the designs of Taipei Tech students. "Tortoise Table" is made of pine and beech and in the shape of a leaning tortoise, arousing the feelings of safety at home. "Nest 3.0," made of white oak and beech, is a bowl-shaped chair. Users sink into the chair and can enjoy the feeling of being embraced and protected after an exhausting day.



"Tortoise Table" and "Nest 3.0" are the designs of Taipei Tech students

Taipei Tech partners with Clevo to cultivate key talents for future retail sector

To stand out in the future retail sector in which e-commerce and virtual reality will be tightly integrated with retail activities, businesses are working closely with academia to cultivate key talents. On October 30, Clevo Co., a public computer manufacturing company based in Taipei, signed a university-industry cooperation agreement with Taipei Tech. The two sides were represented by Cai Mingxian, VP of Clevo and President of Buynow, and Yang Chung-Kuang, VP of Taipei Tech. This agreement expands on the summer internship program the two sides currently have.

Through this agreement, Taipei Tech will provide summer interns for Clevo to research new retail trends across the globe; provide analysis and strategy for an operation model that combines online and physical retail for Buynow, the retail arm of Clevo; and, based on the 5G networks of Buynow, to provide smart shopping center strategy to ensure the leading position of Buynow.

Clevo is one of the first Taiwanese companies that manufactures laptop computers. The company funded Buynow in 1998 in China, and the retail chain has expanded to twenty cities including Shanghai, Hangzhou, Nanjing, Guangzhou, Chengdu, and Tianjin. Clevo is investing TWD\$15 million in the coming five years to develop strategies for the fast-changing retail sector.

To this end, Clevo collaborated with Taipei Tech for the first time in summer 2019. Wang Sheng-Ming, an associate professor of interactive design at Taipei Tech, led ten students from various Taiwanese universities in an internship program in Buynow's Shanghai flagship store. Students conducted surveys, interviews, and workshops on site to understand the needs of customers.

One management student and two interactive design students from Taipei Tech participated in this internship. The group of students provided rebranding and event strategies for Buynow's Shanghai store. They also prototyped the interface of the WeChat apps of Buynow Care, the chain's repair service, and Talk Talk Forum, a technology forum that Buynow operates. Buynow's team subsequently developed the apps based on the prototype. The students also scripted and shot promotional videos.

Taipei Tech has been the benchmark university for industry-academia cooperation and currently has agreements with nearly two hundred companies. According to the 2017 Ministry of Education statistics, Taipei Tech ranks fifth among all Taiwanese universities in per-faculty-member research monies granted.



Cai Mingxian, VP of Clevo and President of Buynow, and Yang Chung-Kuang, VP of Taipei Tech shake hands on the collaboration.

Taipei Tech collaborates with CECI to develop offshore wind power technologies



The Taiwan government is planning to generate 5% of the country's electricity through offshore wind power by 2025. With a projected economic value of TWD\$1.2 trillion, offshore wind power industry has become prominent and profitable. In November 2019, Taipei Tech signed an MOU with CECI, the leading engineering and construction company in Taiwan, to collaborate on the research and development of offshore wind power technologies. The two sides were represented by Chou Lie-Liung, Chairman of CECI, and Wang Sea-Fue, President of Taipei Tech.

CECI Engineering Consultants, Inc. was established in 1969 and is the largest engineering and construction company in Taiwan, with engineers specialized in civil engineering, structure, mechanical engineering, electrical engineering, and control systems. CECI first invested in offshore wind power in 2015 and now has several key technologies.

Chou recognizes Taipei Tech as a top university with strong application-oriented research capability. This MOU enables the collaboration between engineers from various fields between the two sides. "Our collaboration with Taipei Tech will for sure spur the development in offshore wind power and other engineering domains," says Chou.

Wang stresses the importance of cultivating talents in the field of offshore wind power. Taipei Tech also sees the increasing demand of professionals in the field and therefore has provided an interdisciplinary program that integrates resources from the colleges of engineering, mechanical engineering, electrical engineering, and computer science.

"The MOU is creating a mutually beneficial situation for CECI and Taipei Tech. CECI brings their state-of-the-art technology to the table and Taipei Tech the best talents in research and development," Wang says.

The content of the agreement includes cutting-edge structural analysis, offshore construction monitoring, electricity grid connection and protection, maintenance and examination of power transmission and substation, non-destructive testing on wind turbine rotor blades, and drone-based wind turbine inspection. Taipei Tech and CECI are also in talks to forge another formal and more detailed agreement in the coming six months.