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Taipei Tech Makes Significant Progress in the 2021 QS World University Rankings by Subject

Quacquarelli Symonds (QS) announced their results of the 2021 QS World University Rankings by Subject on March 3rd. Of the five general subjects and fifty-one specific subjects, Taipei Tech was ranked in two general subjects and nine specific subjects.

In the area of general subjects, Taipei Tech has a great leap in Engineering & Technology, ranked fourth among Taiwanese universities and 144th in the world. The university secured the world ranking of 501-520 in the general subject of Social Sciences & Management.

Taipei Tech President Wang Sea-Fue indicated that Taipei Tech has seen tremendous improvement in several subjects in this year's ranking. In the subject of Engineering & Technology, Taipei Tech performs exceptionally well and climbs to the 144th in the global ranking. "This major improvement is a result of our longstanding hard work in developing cross-disciplinary research and encouraging innovation as well as practicality," said Wang.

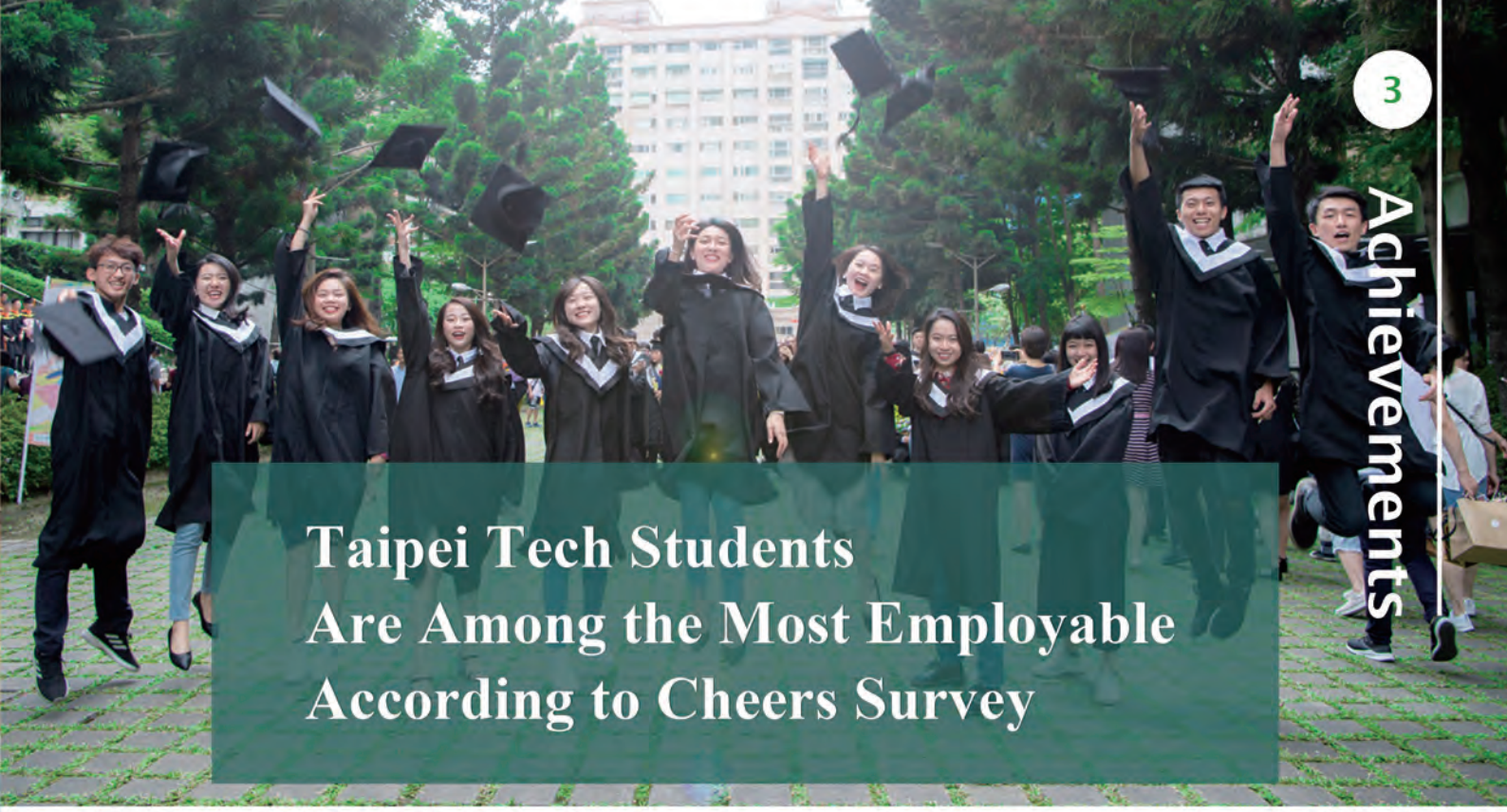
In addition, Taipei Tech is ranked in the specific subjects of Architecture and of Environmental Sciences the first time this year, and the university is ranked second and the third respectively among Taiwanese universities.

The Taipei Tech Department of Architecture is the oldest higher education architecture department in Taiwan. Committed to the cause of sustainability, the Department of Architecture has been engaging in the development of green buildings in recent years. Also, to keep pace with the aging population, senior-friendly environmental design is another major focus of the department.

The Institute of Environmental Engineering and Management of Taipei Tech works closely with the industry, focusing on the research and development of environmental sustainability and providing solutions that are forward-looking, innovative, and practical.

Taipei Tech has been running the Higher Education Sprout Project for many years. The project aims at boosting the development of three fields: smart sensing and smart manufacturing technology, green energy, and advanced materials. The project has strengthened Taipei Tech in pragmatic education and made it possible for Taipei Tech to be ranked highly in recent years.

Taipei Tech also performs strong in other subjects in this year's QS ranking, including Chemical Engineering (#101-150), Materials Science (#101-150), Electrical & Electronic Engineering (#151-200), Mechanical, Aeronautical & Manufacturing Engineering (#151-200), Business & Management Studies (#201-250), Computer Science & Information Systems (#251-300), and Physics & Astronomy (#451-500).



Taipei Tech Students Are Among the Most Employable According to Cheers Survey

National Taipei University of Technology	1
National Taiwan University of Science and Technology	2
Lunghwa University of Science and Technology	3
National Kaohsiung University of Science and Technology	4
National Yunlin University of Science and Technology	5
National Formosa University	6
National Pingtung University of Science and Technology	7
National Chin-Yi University of Technology	8
National Taichung University of Science and Technology	9
Southern Taiwan University of Science and Technology	10

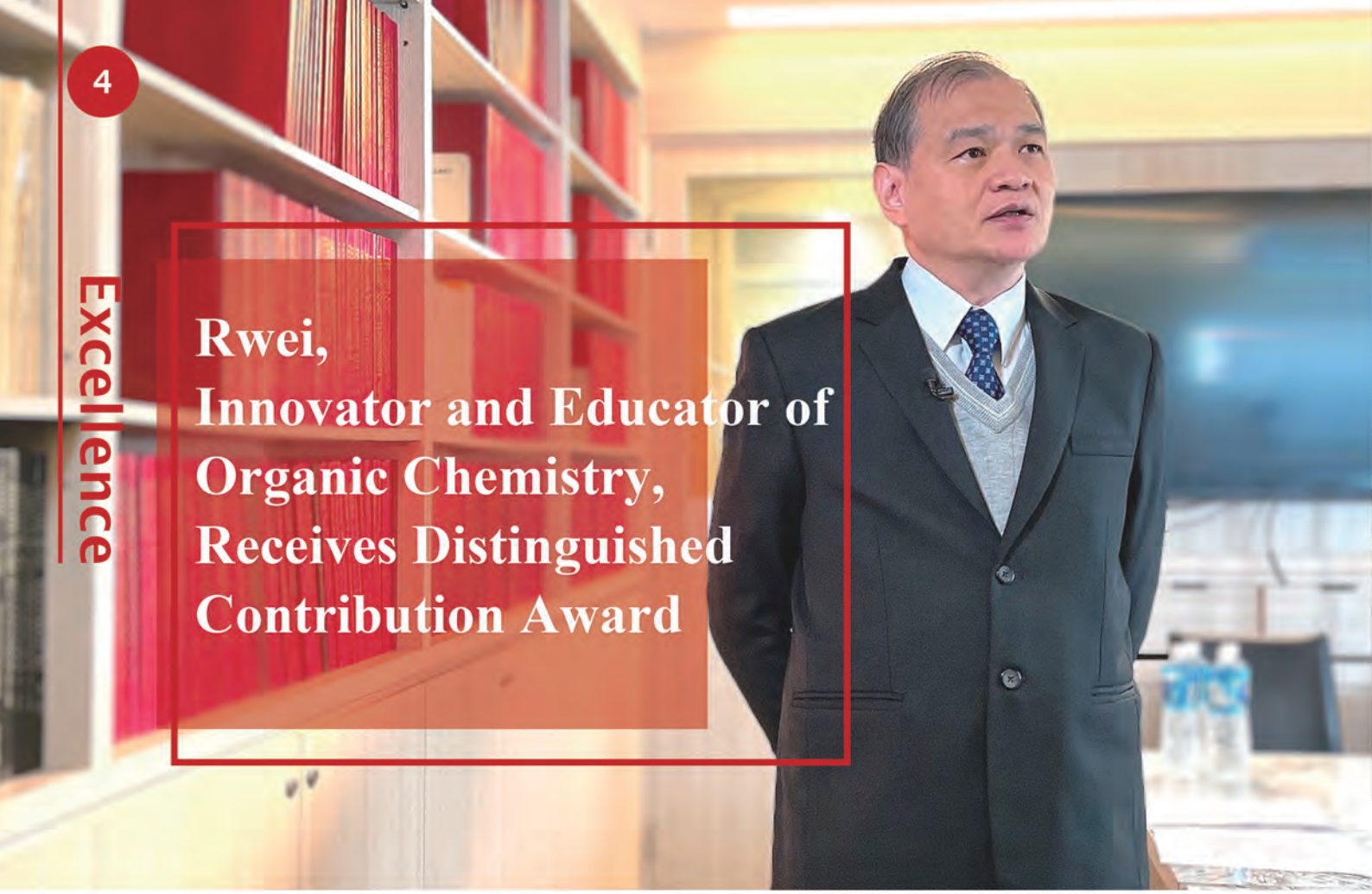
Cheers Magazine has recently released the result of their 2021 survey of the most employable college graduates ranked by companies. Taipei Tech graduates are ranked the most employable among all technological and vocational universities in Taiwan.

The survey has nine indicators and is sent to the human resources directors of two thousand large companies in Taiwan. In addition to ranking schools, they also rank the kind of abilities that are most valued in the current job market.

According to the survey, among all technological universities, Taipei Tech graduates excel in professional knowledge and skills, ability to innovate, willingness to learn, digital adaptation, and stress resistance. Taipei Tech graduates are also in high demand in the high-tech industry, the high-tech service industry, and the manufacturing industry.

The survey also showed that, under the impact of the pandemic, three key capabilities are what the corporate executives look for in their future recruitment: problem-solving ability, interpersonal communication skills, and independent thinking. Academic performance is no longer the priority, and adaptability is crucial in the uncertain and ever-changing job market.

Rwei, Innovator and Educator of Organic Chemistry, Receives Distinguished Contribution Award



The Ministry of Education presented the 2021 National Award for Distinguished Contribution to Industry-Academic Cooperation on March 22nd. Taipei Tech Distinguished Professor, Rwei Syang-Peng, is among this year's three recipients.

Rwei specializes in organic chemistry, material engineering, and functional textile and is renowned in the textile industry for his innovative and eco-friendly inventions and solutions. For the past decade, he has implemented hundreds of academia-industry cooperation projects, and brought in a total of $250 million project funding to Taipei Tech.

In 2018, Rwei founded the TSM Smart Materials Company, focusing on the development and production of smart materials in medical applications. The TSM research and development team has produced a smart three-dimensional fabric that can be used as a replacement for medical gypsums. This specific fabric is the only kind in the world that is toxic-free. The team has also successfully developed an environmentally friendly polymer-based composite plate that is breathable and lightweight. This revolutionary product can be easily molded using heat and can be utilized in sports medicine, senior healthcare, and many other medical fields.

Rwei graduated from the Chemistry Department of National Taiwan University before he obtained his doctorate degree in molecular science from Case Western Reserve University. Rwei then worked at BASF, one of the world's leading chemical companies, in their U.S. branch as an R&D engineer for four years.

After Rwei returned to Taiwan, he took a teaching position at Taipei Tech, where he teaches and researches in the applications of chemical textile in medical and photoelectric fields. He has also actively led and served as a consultant in many government-initiated research projects.

Rwei states that his personal philosophy is to always stay curious about the world. "Curiosity is the driving force behind human progress and development," says Rwei, "and to face adverse situations with a calm demeanor is also an important lesson to learn and practice."

Rwei is already planning his next company. The company will integrate expertise of Taipei Tech's computer scientists, information engineers, and electrical engineers to develop new applications of LED-enabled electronic display fabrics and smart wearable devices.

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Taipei Tech researchers worked with AU Optronics (AUO) to develop an efficient air-conditioning system for the panel and semiconductor manufacturer

Taipei Tech Collaborates with AUO on Energy-Saving Solution through AI and 5G Technologies

A team of Taipei Tech researchers, led by the university president Wang Sea-Fue, worked with AU Optronics (AUO) to develop an efficient air-conditioning system for the panel and semiconductor manufacturer. Utilizing AI and 5G technologies, the research team is able to make the air-conditioning more efficient in one of AUO's plants and thereby reducing the energy cost. The result from this partnership is showcased at the Taiwan GET! International Forum held on March 12th.

AUO has been proactive in transforming its factories and manufacturing processes so that they have less impact on the environment. In its Smart Energy-Saving Cooperation Project, AUO has highlighted the need for a more efficient air-conditioning system for its factories. AUO factories have traditionally had a high energy consumption due to the need of maintaining low temperature to prevent machines from overheating. Adapting a more efficient air-conditioning system is therefore also in the company's best interest.

In the development of this new air-conditioning system, the main challenge for the Taipei Tech research team lies in testing the new system without impacting the production of the factories.

To tackle this problem, AUO and Taipei Tech agree to use the AUO Longtan Plant as the testing bed. The research team installs wireless temperature and humidity sensors and thermographic cameras to monitor the temperature of various spots in the factory. With the historic temperature data provided by AUO and this latest set of data, the research team is able to run simulation and prediction using AI technologies and to provide recommendation of hardware upgrades based on the simulations. With the improvements implemented, AUO has been able to reduce 2.4% of annual electric energy consumption of the Longtan Plant.

The main idea behind the Taipei Tech system is to maintain the optimal air-conditioning performance by adjusting parameters in a timely fashion according to the temperature change in the environment. The research team uses AI deep learning algorithm to make simulation and prediction based on historic data and the data gathered throughout the factory. The 5G-enabled wireless sensors are also a key aspect in gathering data without interrupting the normal production.

Once the new system passes the trial period, it is expected to generate more accurate simulation and prediction based on the environmental temperature and weather condition.

Taipei Tech Partners with Facebook to Roll Out Digital Talent Cultivation Program

Digital economy has been growing rapidly over the years, especially after the global pandemic, and there has been a great demand for digitally competent talents. In light of this, Taipei Tech collaborates with Facebook, the Taiwan External Trade Development Council, the Taiwan Non-store Retailer Association, along with nineteen technological universities, to launch a talent cultivation program aiming to improve students' digital knowledge and skills. On March 24th, a ceremony was held at GIS Taipei Tech Convention Center to kick-start the program.

Yu I-Hui, General Manager of Facebook's Hong Kong and Taiwan offices, noted in her opening remark that Facebook has been invested in digital talent training locally as small and medium enterprises in Taiwan undergo digital transformation. "With this new program, we will not only equip students with digital competency and practical skills," said Yu, "but will also encourage and subsidize them to take the Facebook Blueprint certification exam, a globally-recognized digital marketing certification that will unlock future opportunities for the students."

Vice Premier Shen Jong-Chin indicated that it is great to see an international company like Facebook to work with the government, schools, and retailer association of Taiwan to train students. "By pouring resources together," said Sheng, "I am confident that this talent cultivation program will strengthen the competitiveness of local companies in the global market."

Taipei Tech President Wang Sea-Fue points out that there are 202 students enrolled in the university's E-commerce Talent Cultivation Program this semester. Professors from Taipei Tech and lecturers from Facebook jointly provide digital marketing courses.

"The students who take the course are encouraged to get the e-commerce analyst certification and will have the opportunity to get a full subsidy to take the Facebook Blueprint certification exam," said Wang, "and students will also get the chance to intern in member companies of the Non-store Retailer Association."

After the training, students are expected to have acquired the key knowledge of digital marketing. This will enable the students to be a significant force accelerating digital transformation for small businesses in Taiwan, and the students will also be valuable in the job market with high global mobility.

First Online Joint Symposium Co-hosted by Penn State and Taipei Tech Deepens Partnership

Taipei Tech and the Pennsylvania State University jointly held an online symposium on March 29th through March 31st to discuss future collaboration

Taipei Tech and the Pennsylvania State University (Penn State) jointly held an online symposium on March 29th through March 31st. In the symposium, researchers from both universities gave talks on various topics, and the two universities also discussed future collaboration. Taipei Tech President, Wang Sea-Fue, and Penn State Senior Vice President for Research, Lora Weiss, gave opening remarks at the symposium.

In her address, Weiss indicated that the symposium covers a comprehensive set of topics, including material science, energy, IoT, healthcare technology, architecture, sustainable economy, social science, and management. Weiss further noted that she looks forward to collaborating with Taipei Tech on the development of solar power, wind power, brain-computer interface, and health monitoring.

Wang of Taipei Tech mentioned in his address that, being an alumnus of both Penn State and Taipei Tech, he has been working on enhancing the partnership between the two universities for many years. "Although this first co-hosted symposium needs to take place online due to the pandemic," said Wang, "I would like to thank all the staff and participants to make this happen."

Two guest speakers gave keynotes in the symposium. They are Chang Meng-Fan, Director of Corporate Research of the Taiwan Semiconductor Manufacturing Company, and Leo Wang, CEO of Tricorntech Corp. Their speeches focus on how companies are preparing for the post-pandemic time.

Taipei Tech has a number of key industrial partnerships that put the university in the technology frontier. Taipei Tech has a new research institute on advanced energy research that is soon to open. In addition, Taipei Tech has a partnership with Sinotech Engineering Consultants and Taiwan's nine largest civil engineering associations in constructing fundamental clean-energy infrastructures. The development of offshore wind turbine technologies and engineer verification standard has also been a key focus of Taipei Tech. Wang further noted that "these current efforts will be the foundation of future cooperation between Penn State and Taipei Tech."

In 2019, Penn State and Taipei Tech signed a partnership MOU. The two universities are currently discussing and planning to roll out dual-degree master and bachelor programs.

New Partnership to Preserve Ceramic Artistry and Advance Ceramic Technologies

To promote ceramic culture and to facilitate cross-disciplinary and cross-institutional collaborations, Taipei Tech signed an MOU with Yingge Ceramics Museum on April 21st. As the first university partner of Yingge Ceramics Museum, Taipei Tech will work closely with the museum on the preservation of ceramic culture and craftsmanship and the development of ceramic technologies.

Located in New Taipei City, Yingge Ceramics Museum is the first ceramic-themed museum in Taiwan. "There is a collection of more than three thousand pieces of ceramic art in the museum," mentioned Wu Hsiu-Tzu, Director of Yingge Ceramics Museum, "and we have also made significant progress in the ceramic-related research and industry revival over the years." The museum is currently planning to exhibit a selection of ceramic artworks at the Taipei Tech Arts and Cultural Center in October as one of the celebratory events for the university's 110th anniversary.

Taipei Tech started a ceramic-oriented university social responsibility (USR) project last year. The project aims to promote the culture and beauty of ceramic artistry and to drive the transformation and integration of Yingge's local ceramic industry. Through this USR project, faculty members and students from the Department of Cultural Vocation Development have held a series of ceramic workshops and exhibitions and documented local ceramic artists through interviews. This project also echoes the UN Sustainability Goals of "Quality Education", "Industry, Innovation and Infrastructure", and "Sustainable Cities and Communities".

Taipei Tech President, Wang Sea-Fue, noted that in the 2021 QS World University Rankings by Subject, Taipei Tech has secured the world ranking of 101-150 in the Materials Science category. "We have managed to apply ceramic materials in a wide range of fields such as biomedicine, energy, and optoelectronics," said Wang, "and researchers of our Additive Manufacturing Center for Mass Customization Production have also developed ceramic-based digital dentistry equipment."

With the Yingge Ceramics Museum partnership, Wang believes that Taipei Tech can work closely with the museum to take ceramic application, technology, and artistry to the next level.

As the first university partner of Yingge Ceramics Museum, Taipei Tech will work closely with the museum on the preservation of ceramic culture and craftsmanship and the development of ceramic technologies

TAIPEI TECH

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