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# Taipei Tech Post

## National Taipei University of Technology





## Taipei Tech Partners with UTA in Launching AI and Big Data International Dual-degree Program

The AI and Big Data Dual-degree EMBA program, jointly offered by Taipei Tech and the University of Texas at Arlington (UTA), will start in Fall 2020. The program is Taiwan's only AI-related program that offers dual degrees, and it is also the only one that offers both M.Sc. and EMBA degrees. Green-lighted by the Ministry of Education this year, the program enrolled thirty-eight students—its cap capacity—as soon as it was rolled out. The students include many industry veterans and managers.

At Taipei Tech, the program is managed by the College of Electrical Engineering and Computer Science. Dr. Yuh-Shyan Hwang, dean of the college, indicated that UTA and Taipei Tech are top schools in their respective fields. UTA has one of the top 100 EMBA programs in the world according to the QS global ranking, and Taipei Tech has a leading advantage in research and development in artificial intelligence. "We designed this program for senior managers," said Hwang, "by incorporating the resources of UTA and the hands-on courses of Taipei Tech." Students of this program can take advantage of UTA's global network and acquire valuable skills in international cooperation and cross-cultural business decision-making.



The program offers a flexible schedule, online courses, and great opportunities for students to connect with the alumni of Taipei Tech and UTA EMBA worldwide

Tianbao You, general manager of Foxconn Nanjing Software Company, is one of the students who enrolled in this dual-degree EMBA program. He said that Foxconn has been fully committed to AI and industrial IOT research in recent years. He applied for this EMBA program because it is a perfect combination of computer science and management science. It allows him to learn the full spectrum of AI- and management-related subjects without needing to study in different departments. Bohua Gao, another student who enrolled in this program, has been in the finance industry for over twenty years. He believes that the subject matter of this program is necessary for his career outlook. He hopes that, through the solid training of this program, he will be able to organize his past problem solutions into software programs that will aid him in future decision-making.

The students who participate in this program are not required to go abroad as all the courses will be conducted at Taipei Tech. The program also offers a flexible schedule, online courses, and great opportunities for students to connect with the alumni of Taipei Tech and UTA EMBA worldwide.





Taipei Tech signed an MoU with the European Chamber of Commerce Taiwan (ECCT) to promote cooperation between the chamber and the university in regards to the development of green energy technology

Global

## Taipei Tech Signs MoU with ECCT to Promote Green Energy Technology

Taipei Tech signed an MoU with the European Chamber of Commerce Taiwan (ECCT) to promote cooperation between the chamber and the university in regards to the development of green energy technology. The signing ceremony took place at Taipei Tech in June 2020, and the MoU was signed by ECCT Chairman Giuseppe Izzo and Dr. Sea-fue Wang, President of Taipei Tech.

ECCT is the principal organization in Taiwan representing European companies. It was established more than thirty years ago and currently has 400 business members in Europe and Taiwan. The Low Carbon Initiative (LCI) of ECCT allows for international partnerships and for Taiwanese businesses to bring in the best of European low-carbon solutions and practices across a broad range of industries. Taipei Tech also joined the LCI steering committee in March 2020.

Izzo said that he looked forward to working with Taipei Tech on relevant areas of technology research. As one of the most prominent universities in Taiwan, he is confident this partnership will benefit both sides in regard to technology exchange and talent recruitment. Together with Taipei Tech, ECCT seeks to advance in important research areas, including renewable energy, energy conservation, intelligent health, smart manufacturing, AIOT, smart transportation, and the circular economy.

Wang mentioned that Taipei Tech has strong energy-related research capabilities. In particular, Taipei Tech's Research Center of Energy

Conservation, led by Dr. Wei-mon Yan, integrates the university's ongoing work on green energy, clean energy, energy-conservation, monitoring, and sustainability to solve Taiwan's power supply and distribution problem.

In addition, Taipei Tech began offering cross-disciplinary micro-courses on offshore wind power technology in September 2019. These courses cover design, manufacturing, and operations topics. They are all taught in line with current industry needs. The graduates will help further the establishment of Taiwan's offshore wind energy industry sector.

Given Europe's extensive experience in offshore wind power and low-carbon solutions, Wang looks forward to discuss related issues regularly with ECCT members in the green energy sector to strengthen the school's green energy research capabilities.

Furthermore, together with the support of the Industry-University Alliance Program of the Ministry of Science and Technology, Taipei Tech's green energy technology development will be further enhanced, and students will be provided with more internship and employment opportunities with a global perspective. Taipei Tech will also participate in the ECCT's forthcoming Global Offshore Wind Summit, scheduled for October.





## World-renowned Finnish Scholar to Lecture at Taipei Tech

Prof. Heli Jantunen, an world-renowned expert in microelectronics and ceramic materials, was awarded Yushan Scholar and will be lecturing at Taipei Tech

**P**rof. Heli Jantunen, an expert in microelectronics and ceramic materials, was awarded Yushan Scholar by Taiwan's Ministry of Education (MOE). Jantunen is currently Professor of Technology and formerly Head of the Department of Electrical Engineering at University of Oulu. Her works on extra low temperature co-firing ceramics in particular have received worldwide recognition. Jantunen will be lecturing at Taipei from 2020 to 2023 through the funding from MOE.

The Yushan Scholar Program, initiated by MOE in 2018, seeks to raise the quality of education and boost global recognition of Taiwanese universities by funding top international scholars to research and lecture in Taiwan. Through this program, Jantunen will be lecturing and doing research at Taipei Tech for three years.

"Prof. Jantunen specializes in electronic materials. She holds seventy-six patents and has published over 250 papers in the field of extra low temperature co-firing ceramics," said Taipei Tech President Sea-fue Wang. "Her expertise in 5G material will benefit Taipei Tech greatly for our projects with the telecommunication industry to develop cutting-edge devices."

Jantunen was the receiver of the Nokia Foundation Recognition Award in 2018 for her pioneering academic and industry work with microelectronics. In 2019, she received the Innovation Award for Women, granted by the Finnish Parliament, to woman for a scientifically significant innovation in the field of technology or economy.

At the University of Oulu, Jantunen established the Electronic Material Packaging Reliability Lab in 2004 and is currently the head of the Microelectronics Research Unit at the Electrical Engineering Department.

"Prof. Jantunen was invited as an International Chair Professor at Taipei Tech two years ago and has remained a close partner of the university," said Wang. Due to the Covid-19 pandemic, both parties are still discussing the specifics of Jantunen's arrival at Taipei Tech. "It will be significant for the development and cooperation between Taipei Tech and the local industry if Jantunen is able to join us here as a Yushan Scholar and interact with the domestic scholars and researchers for a longer period."





## Short Film of Dr. Tsau Won Honorable Mention in the 2020 New York Film Awards

Dr. Tsau's award-winning animation, *Walking With Love & Loneliness*, is a reflection of the different stages of a woman's life

**W***alking With Love & Loneliness*, an animated short film directed by Dr. Saiau-Yue Tsau, professor of the Interaction Design Department of Taipei Tech, has recently won an honorable mention in the 2020 New York Film Awards.

Using writer Hui-Inn Liao's novel of the same title as inspiration, the animated film *Walking With Love & Loneliness* is a reflection of the different stages of a woman's life, as a woman, a wife, and a mother. By incorporating symbolic images such as cats and butterflies and her own emotional manifestation, Tsau ruminates on the different aspects of life and the role of the arts in them.

The story of *Walking With Love & Loneliness* unfolds with a woman searching for her cat and thus stepping into a fantastic adventure. Throughout the journey, she savors the fragrance of roses but also experiences a thunderstorm. As a result, both her external appearance and internal mind go through tremendous changes. The film features the smooth flow of images and scenery in stark contrast, symbolizing the many aspects of being a woman. Tsau also incorporates endless lines in the film to illustrate the infinite potential of a woman's growth and marvelous life journey.

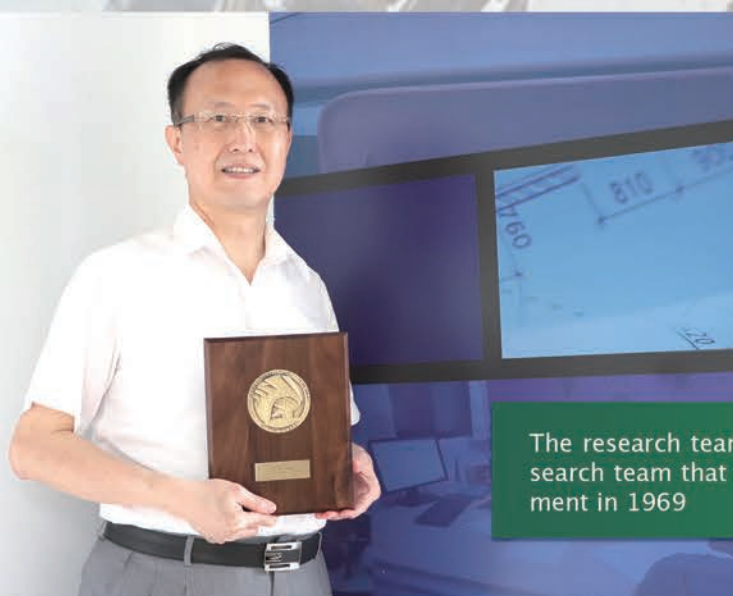
In a recent interview, Tsau said that, during this severe time of the pandemic, she would like to dedicate this award to Taiwan, which bravely fights the pandemic, and to New York, which has brought her many inspirations. "I hope that the pandemic will be under control soon so that everyone can go out and enjoy life with their loved ones."

Tsau teaches in the Taipei Tech Interaction Design Department and heads the Interactive Arts Lab. In recent years, she has been involved in promoting art education for women and, through the Digital Opportunity Center of the Ministry of Education, in teaching people in remote areas of Taiwan to use digital technologies. Her exhibitions include "Taiwan Art Biennale" (2014), "Her Five Wardrobes: Digital Ark Curation" (2014), and "SHOW HER / HER SHOW: Saiau-Yue Tsau Digital Art Solo Exhibition" (2013). Her works have also been exhibited in the 2011 Lucca Photography Festival in Italy and in the 404 Art Festival in Argentina.



# Bridge Engineering Team Wins the ASCE T.Y. Lin Award, First Taiwanese Win

The research team led by Dr. Yu-Chi Sung, Dean of Taipei Tech College of Engineering, won the 2019 ASCE T.Y. Lin Award with a paper titled "Experimental Testing and Numerical Simulation of Precast Segmental Bridge Piers Constructed with a Modular Methodology." The award is an American Society of Civil Engineers (ASCE) honor named after T.Y. Lin, a pioneer in pre-stressed concrete engineering. This is the first time that a Taiwanese research team has won the award since it was established in 1969. Sung's research team includes his PhD student Kuan-Chen Lin and three members of Taiwan's National Center for Earthquake Engineering, Hsiao-Hui Hung, Chi-Rung Jiang, and Kuo-Chun Chang.



The research team led by Dr. Sung is the first-ever Taiwanese research team that wins the ASCE T.Y. Lin Award since its establishment in 1969

ASCE is the leading global civil engineering society. Its monthly magazine, *Civil Engineering*, was established in 1930 and is the leading journal in the field. Winners of the T.Y. Lin Award, the first award in U.S. technology history to be named after someone of Chinese ethnicity, have been prominent engineers and scholars. For example, Robert F. Mast, winner in 1969, designed Seattle's landmark Space Needle; the 1994 winner, Ned H. Burns, was elected as a member of the National Academy of Engineering; and M. Lee Marsh, winner in 2014, is the main contributor of the U.S. seismic design code.

Sung's team began the research into modular bridge pier construction in 2013. Drawing inspiration from the human spinal cord and building blocks, the team developed theoretical models and practical technology to allow them to effectively dissipate earthquake forces on a structure. The team began testing their theory in 2015 in the National Center for Earthquake Engineering and acquired satisfactory results—the new pier can resist 1.2 times more force than a traditional pier. The modular nature of the technology also makes it easy to manufacture and store and decreases the environmental impact during manufacturing. The technology has been patented in the U.S., Japan, and Taiwan.

Sung is currently the chairman of the Chinese Institute of Civil and Hydraulic Engineering and has participated in many major bridge projects in Taiwan. He has served as a commissioner in the Public Construction Commission and as a team leader in the National Center for Earthquake Engineering. Sung also helped develop the Preliminary Seismic Evaluation of RC Building service, an earthquake resistance assessment tool used by the government to analyze data and form policies.





Taipei Tech student team came up with the design concept that uses color change to help track expiring products and won the Best of the Year honor in 2020 iF Design Talent Award

## Color-changing Design Aiming to Reduce Food Waste Awarded iF Best of the Year



In Taiwan grocery stores, it is common to find discount stickers on soon-to-expire products. However, the process of tracking expiring products, putting on stickers, and applying discounts at the counter is both time-consuming and error-prone. Recognizing the need to simplify this process, three Taipei Tech students—Yen-yu Chang, Hsin-an Huang, and Ching-yi Chen—of the Innovation and Design Master’s Program—came up with Barcodiscount, a design concept that uses color change to help track expiring products. The concept won the team the Best of the Year honor in the 2020 iF Design Talent Award and a prize of EUR €3,000.

Barcodiscount demonstrates the concept of turning the original price on the price sticker into a discounted one as the product approaches expiring time. The price sticker also changes color to make it pop among the products, making it more likely to be picked up by consumers. The design saves staff the time of going through the products to post discount stickers and the need to apply a special discount at the counter. It also facilitates better inventory management and customer service.

“Barcodiscount is an interesting proposal with great application potential,” noted the jury statement. “It solves two key problems in food retail; it reduces waste by encouraging consumers to buy products that will soon perish, and it streamlines logistics and data management.” This design concept was selected as one of the Winners in the 2020 iF Design Talent Award and also awarded one of the Best of the Year.

Colorwrap, another design concept from the Barcodiscount team, also utilizes color-changing material to remind users of food freshness. Colorwrap is intended to be used in place of cling film to keep food fresh in the refrigerator. As time passes, Colorwrap slowly turns from green to solid red, signaling to users that the food has been sitting in the refrigerator for too long. Colorwrap can also be washed and reused. This design concept was also selected as a Winner.

The iF Design Talent Award is known as the “Oscar of Design” for young designers worldwide. This year, the design theme is based on the first fifteen of the United Nations’ Sustainable Development Goals. Taipei Tech students received one Best of the Year, three Design Excellences, and two Winners in the award category this year. The three Design Excellences are Beat Massage, Triage Bracelet, and Tetra-Pak-HIV.



## Taipei Tech and TSMC Join Hands to Launch Semiconductor Devices Industry Program

Taipei Tech partners with TSMC to start the Semiconductor Devices Industry Program to provide students with a seamless transition from school to a career in industry

To provide students with a seamless transition from school to a career in industry, Taipei Tech and Taiwan Semiconductor Manufacturing Company (TSMC) signed a partnership agreement to start the Semiconductor Devices Industry Program in Fall 2020. Students who participate in this program will have a better opportunity to intern and work in TSMC, one of world's top semiconductor manufacturing companies.

President Sea-fue Wang of Taipei Tech indicated that this program is tailor-made to train students in the core capabilities of circuit and mechanical structure, sensor and vacuum technology, electromechanical integration, and automation applications in the semiconductor field. This program also integrates learning, research, and hands-on practice, allowing students to intern at TSMC to gain first-hand experience working in a world-class semiconductor company.

Enrolled students need to acquire forty-eight credits in the Semiconductor Devices Industry Program. The credits include twelve required courses and at least four electives with subjects related to semiconductor manufacturing and advanced equipment technology. Yang Shih-Hsuan, Dean of the Taipei Tech Office of Academic Affairs, said that students who have completed the program will receive a certificate jointly issued by Taipei Tech and TSMC. They are also

ensured the opportunity to intern at TSMC and guaranteed the opportunity of a job interview for a formal position.

TSMC is also offering a base salary boost for outstanding students from this program who will later work in the company. TSMC hopes to work with more top domestic institutions to improve the quality of talents for Taiwan's semiconductor industry and strengthen the competitive advantage of Taiwan's semiconductor industry in the global market.

Earlier this year, Taipei Tech Institute of Mechatronic Engineering worked with TSMC to provide the course "Advanced Technology and Equipment for Integrated Circuit Manufacturing." Managers from TSMC, employed as industry lecturers, planned the course and gave weekly lectures in collaboration with Taipei Tech professors. Students in this course were required to give presentations during the weekly courses, and the lecturers from TSMC provided feedback and first-hand industry information. Students were able to acquire solid semiconductor training, effectively reducing the gap between school and industry. Students also went on a site visit of TSMC and its partner companies to better understand the many processes in the semiconductor industry. Six of the students from this course have been interning at TSMC since July this year.



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