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Taipei Tech senior officers visited several partner institutions in Poland and the Czech Republic

Taipei Tech Delegation Visits European Partner Institutions to Strengthen Bilateral Cooperation and Academic Ties

□ rom February 27 to March 3, a delegation of Taipei Tech senior officers visited several partner institutions in Poland and the Czech Republic. The delegation included President Wang Sea-fue; Vice President Thomas C.K. Yang; Dean of International Affairs, Pai Tun-wen; and Dean of Research and Development, Chuang Ho-chiao. The institutes they visited included Czech Technical University in Prague (CTU); the University of Chemistry and Technology, Prague (UCT); University of West Bohemia (UWB); and Warsaw University of Technology. The goal of the visit was to strengthen bilateral cooperation.

President Wang highlighted that CTU, one of the oldest and most prestigious technical universities in Europe, has been a partner of Taipei Tech since 2007. CTU is a popular exchange

Taipei Tech President Wang Sea-fue, right, and Warsaw University of Technology President Krzysztof Zaremba, left, renewed their partnership agreements

destination for Taipei Tech students, with over 150 students from both universities participating in bilateral exchange programs. In 2020, CTU Vice President Radek Holý visited Taipei Tech along with a delegation of Czech officials.

UCT, one of Central Europe's largest universities, is known for its research in chemistry, material science, and chemical engineering. Wang noted that UCT President Pavel Matějka visited Taipei Tech and signed a partnership agreement in 2020. He expressed hope that the visit would lead to UCT joining Taipei Tech's international PBL programs as a partner school.

The Taipei Tech delegation also met with UWB's newly elected President Miroslav Lávička to discuss potential academic cooperation.

In Poland, Taipei Tech and Warsaw University of Technology renewed their partnership agreement and explored future collaboration opportunities. Wang remarked that both institutions have over a century of history and have educated numerous students who are now driving industrial development. Since partnering in 2008, Taipei Tech and Warsaw University of Technology have seen seventy students participate in exchange programs between the two universities. Wang mentioned plans to expand cooperation in joint research projects and joint degrees in the future.

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Welcome the rsity delegation

Signing Ceremony of Academic Collaboration Joint Research Protocol between National Taipei University of Technology and Czech Technical University in Prague

Expanding Global Partnerships:

A 14-member Czech academic delegation visited Taipei Tech on March 27th. As Czech Economic and Cultural Office representatives looked on, President Wang Sea-fue of Taipei Tech and Vice President Radek Holý of Czech Technical University (CTU) signed an agreement on behalf of their respective institutions. The two parties will jointly invest in research projects in the fields of semiconductors, sustainable energy, and smart cities, the Internet of Things, and information security monitoring, deepening academic ties between Taiwan and the Czech Republic.

The visiting academic delegation included high-ranking officials from Czech Technical University, Charles University in Prague, Masaryk University, Brno University of Technology, as well as representatives from the Czech Technology Agency and the Czech Senate.

President Wang of Taipei Tech indicated that this was the second time in three years that Taipei Tech hosted an academic delegation from the Czech Republic. "It is also the second time in three years that CTU Vice President Radek Holý has paid us a visit in person," said Wang. Taipei Tech and CTU have been partners for over fifteen years. CTU is one of the most popular exchange destinations for Taipei Tech students, and more than 150 students from the two universities have joined the exchange program.

CTU Vice President Holý indicated that he first visited Taiwan eleven years ago. During that visit, he found Taiwan to be a beautiful country with very nice people, and he has made many good friends since then. "I am looking forward to having more collaborative opportunities with Taiwan in the near future," said Holý.

Taipei Tech and the Czech Technical University established a partnership in 2007. CTU is one of the oldest and largest technical universities in Europe, as well as the best technical university in the Czech Republic. The school has graduates who excel in different engineering fields, and it also has alumni who work in politics, such as the first democratically elected President of the Czech Republic, Václav Havel, and the current Speaker of the Chamber of Deputies, Markéta Pekarová Adamová. Czech Academic Delegation Visits Taipei Tech for Joint Research Collaboration



Taipei Tech and CTU signed an MOU to strengthen partnerships between the two universities

Taipei Tech Professor Hu Shih-cheng Receives National Award

for Pioneering Semiconductor Research and Industry-Academic Collaboration

u Shih-cheng, Taipei Tech Distinguished Professor, was honored with the 2023 National Award for Industry-Academic Cooperation by the Ministry of Education on April 17. Recognized as a leading global expert in contamination control for semiconductor wafer fabrication, Hu has dedicated over three decades to researching cleanroom and high-tech facility technologies.

In the past ten years, Hu has secured over NTD\$200 million for Taipei Tech through industry-academia partnerships, technology transfers, and patents. One of his most notable collaborations was with Taiwan Semiconductor Manufacturing Company (TSMC) on a solution for controlling wafer microcontamination. The patented solution improves upon the shortcomings of traditional wafer carriers, increasing product yield, and is now becoming standard equipment in high-end semiconductor manufacturing processes. This process has been adopted by Intel and Micron, and further implemented in TSMC's new factory in Arizona.

Understanding that Taiwan primarily imports semiconductor manufacturing equipment, which often doesn't align with local needs, Hu is continuing to develop novel clean control technologies and solutions. By leading two research centers at Taipei Tech – one focused on cleanroom technology and the other on semiconductor processes and equipment – Hu has showcased exemplary industry-academia cooperation and established new business models for local suppliers.

Hu co-authored the seminal book ASHRAE Design Guide for Cleanrooms and is a member of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

Beyond his research accomplishments, Hu is devoted to nurturing talent. For over a decade, he has conducted short-term training programs, teaching more than 2,500 trainees. He has mentored over 140 graduate and PhD students, most of whom have secured engineering positions in the high-tech industry. Recently, Hu has been collaborating with Japan's Shibaura Institute of Technology on the SAKURA Science Program to promote student exchange.

In light of growing emphasis on ESG, Hu is developing a recycled chemical filter that could revolutionize the reduction of waste and carbon emissions. He also aims to expand the applications of his patented particle visualization technology for airflow.

aipei Tech and Taiwan Rolling Stock Co. (TRSC) announced a partnership and the launch of a joint research center on March 17, joining forces on talent development and advancing smart railway technology. Notable attendees at the launch ceremony included Tsai Huang-liang, Chairman of TRSC; Hsu Shun-jung, General Manager of TRSC; Hu Hsiang-ling, Deputy Minister of Transportation and Communications (MOTC); Ho Nuan-hsuan, Chairman of Chung-Hwa Railway Industry Development Association; Yang Zheng-jun, Deputy Director of Railway Bureau, MOTC; Feng Hui-sheng, Deputy Director of Taiwan Railways Administration; and Sun Guo-hua, VP of China Steel Corporation.

TRSC Chairman Tsai Huang-liang expressed optimism about the collaboration between Taipei Tech and TRSC, emphasizing its potential to greatly benefit the local railway industry. He stated that the new research center will prioritize industry-academia cooperation and talent cultivation, providing students with hands-on experience and practical skills through collaborative projects.

Wang Sea-fue, Taipei Tech President, revealed that the Joint Research Center for Railway Vehicles and Smart Technology will be housed in Taipei Tech's new Pioneer International R&D Building. Wang said, "We will develop smart applications and solutions for multi-track vehicles, including Train Control and Monitoring Systems (TCMS), to enhance train dispatching and repair efficiency."

Yao Leehter, director of the joint research center, explained that TCMS is equivalent to the train's brain and central nervous system, controlling and connecting subsystems such as traction and braking. The center aims to create a smart rail maintenance and disaster-prevention platform that is enabled by TCMS. The platform will establish detection systems for inter-station passenger flow, circuit abnormalities, axle vibration abnormalities, and train drive systems. The data collected through all these systems will provide reference points for rail train scheduling and maintenance, achieving the goal of smart rail transportation.



Taipei Tech and Taiwan Rolling Stock Co. (TRSC) launched a new joint research center to collaborate on talent cultivation and smart railway technology advancement

Taipei Tech and TRSC Unveil Joint Research Center to Drive Smart Railway Technology and Talent Development 6

Taipei Tech to Offer New Graduate Program in Aerospace and System Engineering

aipei Tech announced the launch of a new graduate program in aerospace systems engineering for the 2023 academic year. The program aims to meet the growing demand for aerospace engineers, focusing on the development of technology in satellite systems, communication payloads, and mobile ground stations. The program will admit fifteen students, with applications opening on April 10.

Taipei Tech President Wang Sea-fue emphasized that Taipei Tech is the first technological university to offer a graduate program in aerospace technology. By combining resources from the College of Electrical Engineering and Computer Science and the College of Mechanical and Electrical Engineering, the program will foster cross-disciplinary technology development. Wang stated, "we will collaborate with academic, industrial, and governmental partners to cultivate professionals with robust aerospace engineering skills and knowledge." The inaugural partners include Georgia Institute of Technology, Acer, the Institute for Information Industry, and the Taiwan Space Agency.

Chang Yang-lang, Dean of the College of Electrical Engineering and Computer Science, mentioned that the development of low Earth orbit (LEO) satellite is vitally important in today's world. The new program's curriculum includes satellite technology and engineering, space mission and system design, space mission operations, space vehicle dynamics and control, space vehicle technology, and space system management. Chang hopes that students will gain both theoretical and practical knowledge in aerospace engineering through internships and research projects. Lin Hsin-piao, Professor of Electronic Engineering Department and Director of the Aerospace and System Engineering Graduate Institute Preparatory Office, has worked with the Advanced Rocket Research Center of National Yang Ming Chiao Tung University for nearly two decades. He has also participated in several hybrid-propellant rocket launches in Taiwan. Lin emphasized that the program's goal is to provide practical training to students, readying them for careers in the aerospace industry by equipping them with problem-solving and mission planning skills.

Taipei Tech is launching a new graduate program in aerospace systems engineering in the 2023 academic year

ChatGPT Workshop, Hosted by College of Management, Aims to Increase Students' AI Competencies

aipei Tech's College of Management worked with Microsoft Taiwan and Lychee Intelligence on hosting a ChatGPT Workshop from March 14 to April 11. Led by Hua Kai-lung, Chief Technology Officer of Microsoft Taiwan, and Ho Chien-wei, CEO of Lychee Intelligence, the workshop aimed to develop students' core digital and AI competencies.

Fan Shu-kai, Dean of Taipei Tech College of Management, shared that the workshop covered a range of topics, including chat bot and its applications in digital marketing; generative AI technology; Microsoft's Azure Open AI service and its use cases; and developing Azure Open AI applications using its API (application programming interface). The workshop showcased how generative AI technology could be used in teaching and research, and how students could utilize AI tools for their senior projects. The overwhelming interest in the workshop led to registration reaching full capacity within 24 hours.

Fan also emphasized that generative AI technology will revolutionize higher education by increasing efficiency and productivity. Students who can utilize AI tools will mostly likely be able to increase the quality of their projects. The College of Management will soon make its Azure Open AI service, donated by Microsoft, available to its faculty members and students, allowing for test applications to be run for educational purposes.

Taipei Tech Provost Huang Yu-hsien stated that it is essential to develop competencies for working with AI tools in order to stay current and relevant. As a result, Taipei Tech has planned to integrate ChatGPT application content into existing courses on deep learning, natural language processing, and neural networks. Furthermore, the College of Management will launch a micro program on artificial intelligence and cross-disciplinary applications this year, with the aim of teaching students AI tool applications and preparing them for future careers.

Taipei Tech will also put a strong emphasis on using AI technologies responsibly. To prevent plagiarism, Huang noted that Taipei Tech will encourage teachers to assess students through oral reports or on-site written tests at least twice a semester. For enrollment, a comprehensive evaluation process will be employed, which will include interviews, practical projects, and screening tests.

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he 67th United Nations Commission on the Status of Women (UNCSW) was held in New York from March 6 to 17, 2023. The Ministry of Foreign Affairs led a delegation to the event and co-organized a series of activities for Taiwan Gender Equality Week with Taiwan's Foundation for Women's Rights Promotion and Development. Taipei Tech Metaverse XR R&D Center was invited to take part in the event, for which interaction design students created projects that demonstrated the strength of Taiwan's technological education and women's empowerment.

"Taiwan Night: Celebrating Women in Tech," the first event of Taiwan Gender Equality Week, took place in New York on the evening of March 7. Tsao Hsiao-yue, Chair of Taipei Tech Department of Interaction Design, opened the event with a video titled "Taiwan Women's Innovative Power." Taiwan Digital Minister Audrey Tang appeared in the video and was virtually fitted with multiple outfits using metaverse technology. The video was produced by Pan Li-hsuan, a graduate student in interaction design. Pan processed the 3D scanning and modeling of Tang and did the video post-production, demonstrating the diverse technological capabilities of Taipei Tech students.

The "Multiverse Fashion Show" followed, featuring virtual models and real models walking the same runway. The show was organized by Claudia Wang, fashion designer and interaction design graduate student at Taipei Tech. It demonstrated the fusion of fashion and technology and presented a vision of the future of fashion design. The show was exhibited again at Taipei Fashion Week at the end of March.

Metaverse XR R&D Center and Design Students Curated Multiverse Fashion Show at Taiwan Gender Equality Week, Celebrating Women in Tech

After joining the Metaverse XR R&D Center, Claudia Wang demonstrated abundant creativity and drive. Wang pointed out that initial investment in fashion industry is typically very high, for a single outfit usually requires preparation in three to five different sizes. This often leads to unnecessary waste. With the help of virtual reality technology, the fashion design industry can quickly "tailor-make" clothing in the latest fashion trends for each customer. Through 3D avatars, customers can provide immediate feedback and modifications, significantly improving the clothing production process and quality.

Tsao stated that "Taiwan Night: Celebrating Women in Tech" is the culmination of a decade's work by the Taipei Tech Department of Interaction Design, which educates designers while highlighting women's role in technological development. She further pointed out that Taiwan's technological prowess is world-renowned, but the contributions of Taiwanese women in technology often go unnoticed. She is proud that Taipei Tech students of all genders can bravely face challenges, collaborate, and showcase their strengths.

Publisher

Sea-Fue Wang

Executive Editors

Chien-Wen Wu Tun-Wen Pai Editors

Imin Chang Vivi Chen Jessie Lin Siao-Jing Chen **English Copy Editors**

Vivi Chen Sharin Schroeder