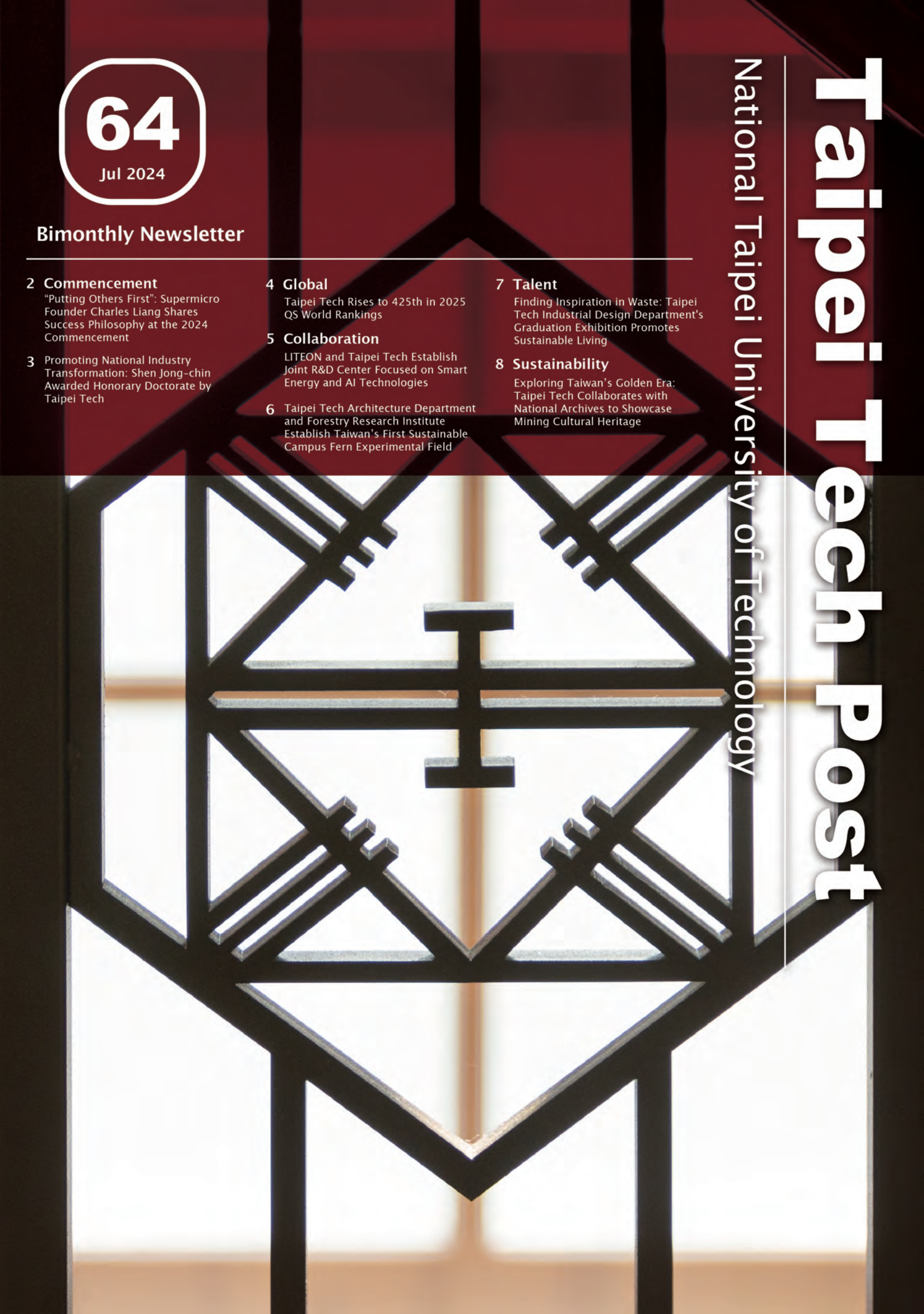
Taipei Tech Post

National Taipei University of Technology

64
Jul 2024

Bimonthly Newsletter



“Putting Others First”: Supermicro Founder Charles Liang Shares Success Philosophy at the 2024 Commencement

Taipei Tech celebrated the 2024 commencement on June 1, and two notable alumni– Shen Jong-chin and Charles Liang–joined the class of 2024 in the celebration. Charles Liang, founder of Super Micro Computer, Inc. (Supermicro), shared his principles for entrepreneurial success with the approximately 2,400 graduating students in his commencement speech.

Liang received an honorary Doctor of Engineering from Taipei Tech in 2011. He is dubbed as one of the Three Taiwanese AI Giants of Silicon Valley, along with Nvidia founder Jensen Huang and AMD Chairperson Lisa Su. After graduating with an electrical engineering degree from Taipei Institute of Technology (Taipei Tech's predecessor) in 1978, he worked as a teaching assistant at the institute before pursuing a master's degree at the University of Texas at Arlington. Liang founded Supermicro in Silicon Valley in 1993 and took the company public on NASDAQ in 2007. With its modular design and green computing technologies, the company has become the leading global AI server manufacturer in recent years, with a market value of billions of US dollars.

Liang's keynote speech, titled "Optimize Your Career with People and Human Being's Best Interest," highlighted green computing and server cooling technologies at Supermicro. He noted that if the global IT industry adopted green computing, it could save over twenty billion US dollars in energy cost annually. In addition, since liquid cooling technology is much cheaper than traditional air cooling, a group of Taipei Tech alumni are currently working to promote its adoption, aiming to increase its market share in data centers from less than 1% to over 15% this year, creating significant value for humanity and the environment.

Liang also expressed gratitude to Taipei Tech, stating the education here had a profound lifelong impact on him. He emphasized that the school's motto of “Integrity, Simplicity, Mastery, and Tenacity” was the foundation of his entrepreneurial success. He encouraged the graduates to persevere in what they truly want to do and uphold others in this process. "If you face challenges this way, you'll find you can overcome them more easily because altruism has no enemies."

In the ceremony, Liang also donated ten AI GPU servers to Taipei Tech, received by President Wang Sea-fue, to enhance the school's high-performance computing resources and support AI talent fostering and industry-academia research.

Charles Liang (left), Supermicro founder, receives a certificate of appreciation from Taipei Tech president Wang Sea-fue for donating AI servers to Taipei Tech, his alma mater. Photo by Lu Yu-jie

Wang Sea-fue, Taipei Tech president, encourages graduates to stay humble and never stop learning. Photo by Wang Yong-jie

Promoting National Industry Transformation: Shen Jong-chin Awarded Honorary Doctorate by Taipei Tech

Shen Jong-chin (right), vice chairman of China Development Financial Holding Company, is awarded an honorary doctorate in engineering by Taipei Tech. Photo by Lu Yu-jie

Shen Jong-chin, who had served in public office for over 53 years and is now the vice chairman of China Development Financial (CDF) Holding Company, was awarded an honorary doctorate of engineering by Taipei Tech. The ceremony took place during Taipei Tech's graduation ceremony on June 1, 2024, recognizing this outstanding alumnus for his remarkable contributions to his alma mater, industry, and national economic development.

Shen graduated in 1978 from the Department of Electrical Engineering at Taipei Institute of Technology (now Taipei Tech). He had worked technical jobs at his alma mater before serving in the Industrial Development Bureau (IDB) of Ministry of Economic Affairs. There, he advanced through various roles, including director of the Export Processing Zone Administration and director-general of IDB. Shen then rose to higher government roles, becoming the deputy minister and eventually the economic affairs minister. Shen continued his education and earned a master's degree in business automation and management at Taipei Tech in 2001.

In mid-2020, he took office as the vice premier of the Executive Yuan, where he implemented the Three Major Programs for Investing in Taiwan, encouraging the return of Taiwanese enterprises from abord. To date, the program has attracted over NT$2 trillion in investments, including NT$10 billion from Supermicro, a leading server manufacturer. Additionally, he utilized the Technology Development Program to attract R&D investment from international giants such as Nvidia, Micron, and ASML, boosting R&D investment by over NT$100 billion and driving national economic and job market growth. Shen has also been instrumental in transforming Taiwan into a hub for high-end manufacturing, advanced semiconductor processes, high-tech R&D, and green energy development.

After leaving the vice premier office in 2023, Shen transitioned to the role of chairman of Taiwan Financial Holdings and served as a senior advisor to President Tsai. He was awarded the Order of Brilliant Star with Special Grand Cordon for his outstanding public services. Shen became the vice chairman of CDF Holding Company on May 20, 2024, continuing to serve as a bridge between the government and industry, supporting digital and net-zero transitions through policy finance.

Shen thanked his Taipei Tech teachers for their guidance, which helped him combine professional knowledge with practical skills in his public service. He would also like to share his experiences with younger students more, encouraging them to be practical, proactive, and always learning. "By staying prepared and grateful, they can work well together and succeed," he said.

President Wang Sea-fue praised Shen and Liang as exemplary Taipei Tech alumni who continuously strive for excellence. They started from humble beginnings and progressed step by step with humility and vision, constantly expanding their horizons. He encouraged the graduates to keep their knowledge and technology up-to-date and maintain a spirit of altruism for the common good of society in the era of rapid AI development.

Students are queuing for interviews at the 2024 Taipei Tech job fair. The 2024 *Global Views Monthly* survey shows that Taipei Tech graduates are the most employable among technical and vocational university students.

Representatives from the Pennsylvania State University visit Taipei Tech to discuss academic exchanges. Taipei Tech has long been committed to internationalization.

Global

Taipei Tech Rises to 425th in 2025 QS World Rankings

The UK-based higher education information organization Quacquarelli Symonds (QS) announced their latest rankings in the 2025 World University Rankings on June 6. Taipei Tech's ranking has risen from 431st to 425th, and it has been listed among the top 500 best universities globally for four consecutive years. Although the university has retained its sixth position in Taiwan, it is the only Taiwanese university making consistent progress globally over seven years.

QS uses indicators such as academic reputation, faculty-to-student ratio, international students ratio, international research network, and sustainability to assess university performance. This year, over 1,500 universities worldwide made it into the final list, and 27 Taiwanese universities are listed among them.

Taipei Tech President Wang Sea-fue indicated that the university has long focused on international exchanges and regularly engaged with top-ranking international partner schools. Taipei Tech currently has approximately 80 joint academic research projects with 14 international partner schools. The university also has dual degree agreements with 16 international partners, with four more schools in the process of negotiation. In the past year, Taipei Tech's inter-university academic cooperation resulted in 228 SCI papers, showing a fruitful approach to promote diverse, international academic collaborations among faculty and students.

Additionally, Taipei Tech has seen a continual increase in the total and average number of faculty's published papers and the average funding from the National Science and Technology Council. The proportion of high-quality papers is also rising, with 72% of SCI papers published in the top 25% of international journals. On average, each faculty member has published 2.86 SCI papers in recent years, demonstrating the university's strong academic performance.

According to the 2024 QS subject rankings, Taipei Tech excels in the Engineering and Technology main category. Under this category, the school's ranking in subcategories Chemical Engineering; Materials Science; Architecture; Mechanical, Aeronautical and Manufacturing Engineering; Electrical and Electronic Engineering; Civil and Structural Engineering; and Computer Science and Information Systems are among the top in Taiwan.

Representatives from the Pennsylvania State University visit the Department of Molecular Science for a briefing on transnational joint research. Taipei Tech has established joint research links with 14 international partner schools.

Wang further pointed out that Taipei Tech, as an application-oriented research university, has always been responsive to industry needs and playing a key part in fostering forward-looking pioneers. In recent years, Taipei Tech has established master's programs in semiconductor and smart rail, launched degree programs in AI technology and cybersecurity at both the master's and doctoral levels, and set up the only Space Systems Engineering Research Institute within the vocational higher education system to foster the research and development talents in core strategic industries.

To actively support industry's demand of mid- and senior-level workforce, Taipei Tech has also established the Smart Railway School, the Research Center of Offshore Wind Power Engineering (RCOWPE), a cybersecurity leadership program, and a dual certification programs in advanced financial management. Over the past six years, the number and patronage of Taipei Tech's industry-academic cooperation projects have continued to rise, setting new records in the most recent year.

Guests at the unveiling ceremony of the LITEON-Taipei Tech Joint R&D Center pose for a photo.

Taipei Tech president Wang Sea-fue delivers the opening speech.

LITEON and Taipei Tech Establish Joint R&D Center Focused on Smart Energy and AI Technologies

On April 17, LITEON Technology Corporation (LITEON) and Taipei Tech announced the opening of the LITEON-Taipei Tech Joint R&D Center, marking a new milestone of collaborative research in advanced technology. The center will work closely with departments such as electrical engineering, electronic engineering, optoelectronics, computer science, and materials science on the research and development of advanced materials, technologies, and innovative management models in the emerging fields of smart energy and AI technologies.

Anson Chiu, president of LITEON, stated that the company is strategically focused on energy technologies, including the transformation, conservation, control, and storage of energy. To these ends, the company has launched three green solutions: green data centers, sustainable transportation, and high-efficiency infrastructure. To prepare for future key development areas and new market segments, LITEON is actively encouraging its R&D staff to adopt innovative thinking and develop advanced technology applications to face the rapidly changing global challenges.

Taipei Tech holds a leading position in the research of smart energy, AI, and automation, as well as innovative talent development. The establishment of the joint R&D center combines the strengths and long-term collaboration experience of both parties, implementing an advanced talent recruitment strategy to generate more potential and innovative applications and solutions using advanced technologies.

Taipei Tech President Wang Sea-fue said that LITEON and Taipei Tech will utilize the joint R&D center as a technology sharing and management platform that will foster the long-term partnership between the two parties. This collaboration aims to promote the development of advanced technologies and interdisciplinary applied research. The professional R&D talents employed by this center will be able to integrate academic knowledge with practical applications, thereby assisting enterprises in technological innovation and breakthroughs in emerging industries.

Guests at the ribbon-cutting ceremony of the LITEON-Taipei Tech Joint R&D Center pose for a photo.

The smart energy development under the LITEON-Taipei Tech Joint R&D Center will focus on emerging energy technologies, applied in high-performance power design and clean alternative energy management. Taipei Tech also has a smart grid demonstration site set up on the campus for technical verification. On the AI front, the latest technologies will be applied to cognitive analysis of drivers and safety risk management, using AI image monitoring technology for intelligent sensing and monitoring of drivers and the external environment. This will optimize image recognition and decision-making quality, enhancing safety for both humans and vehicles.

Lai Yen-shin, director of the LITEON-Taipei Tech Joint R&D Center and chair professor of the Department of Electrical Engineering at Taipei Tech, stated that the center will be focusing on academic publication, patent portfolio and application, technology transfer, teaching and training, organizing seminars and keynote speeches, encouraging students' participation in competitions, securing student internships, recruiting talents, and consulting services. Renowned American scholars from related fields have also been invited to Taipei Tech for lectures, in the hope of building international industry-academia collaborations.

Students from Taipei Tech's Department of Architecture learn to mix soil suitable for the growth of uncommon species of fern plants on campus.

Taipei Tech Architecture Department and Forestry Research Institute Establish Taiwan's First Sustainable Campus Fern Experimental Field

To celebrate Earth Day, Taipei Tech Department of Architecture collaborated with the Forestry Research Institute of the Ministry of Agriculture to establish Taiwan's first on-campus fern experimental field, named "Ferns of Taipei Tech." Headed by architecture professor Huang Chih-hung, this project aims to create a gene bank of native Taiwanese ferns by utilizing systematic ecological planning concepts, aligned with the United Nations Sustainable Development Goals (SDGs). The goal is to enhance biodiversity on campus and set a new example for urban landscape planning. Many rare and endangered fern species have been donated to Taipei Tech and taken root on the campus.

Chen Chen-cheng, chair of Taipei Tech Department of Architecture, stated that the development of Taipei Tech's ecological campus began around 1980 and has always been driven by the initial goal-environmental sustainability. Taipei Tech's natural landscape was spearheaded by Tsai Jen-hui, then Dean of the College of Design, 15 years ago. Over the years, with the removal of campus walls, restoration of waterway systems, and building the Green Gate, Taipei Tech has demonstrated the possibility of bringing back biodiversity in a highly urbanized area and led a new campus planning trend in Taiwan.

The new fern experimental field serves both as landscaping and as an important source for architecture and urban planning experiments. With guidance from fern experts, this initiative will allow exploration of practical applications of native Taiwanese ferns in building and landscape designs, further realizing biodiversity and systematic ecology in urban landscape planning. The architecture department also plans to apply this concept in indigenous natural landscapes of the Meixi area in Nantou, the homeland of butterflies, through Taipei Tech's USR project.

Guests at the unveiling ceremony of "Ferns of Taipei Tech" pose for a photo.

Huang Yao-mou, a distinguished researcher at the Forestry Research Institute, pointed out that Taiwan, which spans from tropical to subtropical regions, is rich in ferns, even in Taipei city. On the Taipei Tech campus, there are currently 24 families and 62 species, including 18 species from the Forestry Research Institute, seven species from the eastern tribe of Nantou's Ren'ai Township, and one specie from the Tengyun community in Taipei's Wanhua District. Excluding two horticultural species, the remaining 60 species are native to Taiwan. Ferns enhance urban biodiversity, improve living conditions, and help restore urban ecological landscapes. The strong support from the architecture faculty and students has allowed vibrant fern plants to take root at Taipei Tech, opening door to the many possibilities of integrating ferns in urban architectural and environment design.

Finding Inspiration in Waste: Taipei Tech Industrial Design Department's Graduation Exhibition Promotes Sustainable Living

"Hey! So Here You Are," the graduation exhibition of the class of 2024 industrial design students, showcased 54 diverse works by 63 graduating designers. The extent of projects cover product designs to spatial designs, focusing on circular economy, sustainable development, and human-centric products. Among them, five pieces were shortlisted for this year's Golden Pin Concept Design Award.

1. *Ning Stones:* Turning recycled sea glass into a wellness business

Designers (start from the right): Huang Guan-bo, Chen Kuan-yu, Cheng An-chieh, Sung Hsuan-wu

Using recycled sea glass, the designers took advantage of the versatility of glass and turned the glass into a design they call *Ning Stones* ("serene stones"). The design is composed of several pieces: a glowing magnetic floating object, a wave drum, an hourglass, massage stones, and diffusing stones. This product offers a multi-sensory experience to aid meditation and relaxation, and the incorporation of recycled sea glass also promotes sustainability.

2. *SOLU Incense Burner:* Making joss paper circular to achieve carbon reduction

Designers: Zhang Qiao-han (left), Huang Chi-yao

SOLU Incense Burner simulates the traditional burning of joss paper using light and water vapor. The design helps retain the ritual while using a water-soluble joss paper recycling system to reduce resource consumption. When not in use, it functions as an atmospheric lamp and humidifier, integrating seamlessly into daily life at home.

3. *Climate Panel:* Reducing ecological impact in construction

Designers: Lu Yan-shuo (left), Chen Yi-jia

The *Climate Panel* aims to reduce the environmental impact of growing and tending to the ornamental plants commonly found on construction site fences throughout Taiwan. The *Climate Panel* is made from renewable materials and employs low-carbon production. It features rammed earth to absorb environmental moist and humidity-sensitive paint to reflect seasonal changes, and its breathable structure also helps regulate temperature.

4. *Boodio:* Vinyl-like experience of listening to books

Designers: Sung Hsuan-wu (right), Cheng An-chieh

The *Boodio* is a machine that automatically turns pages and reads the content of a book out loud. It is designed to make collecting books feel like collecting vinyl records and give old books a new life. *Boodio* lifts pages gently and scans them. With every page, it utilizes AI to recognize text and convert the text content to audio. Users can also adjust language and tone settings.

5. *Assemble Orientation:* Helping visually impaired children develop spatial awareness

Designers: Lin Ching-hsuan (right), Sun De-jia

Assemble Orientation are modular, animal-shape toys designed for preschool children with visual impairments. Lin and Sun discover that children are naturally drawn to animals, so they designed *Assemble Orientation* to be three-dimensional animals with various modular body parts made of tactile materials. Through assembling these animals, children can develop spatial concepts and mind mappings, crucial for the development of their spatial perception and reasoning skills.

Exploring Taiwan's Golden Era: Taipei Tech Collaborates with National Archives to Showcase Mining Cultural Heritage

Taipei Tech partners with the National Archives in hosting the Golden Era of Taiwan's Gold and Copper Mining Industry Portable Exhibition.

To promote awareness of cultural heritage and sustainable development, Taipei Tech has partnered with the National Archives Administration of the National Development Council (the National Archives) in hosting the Golden Era of Taiwan's Gold and Copper Mining Industry Portable Exhibition. It features valuable images and historical documents about Taiwan's gold and copper mining, smelting, and miners' lives. The exhibition takes place at the Taipei Tech Red Building and is open to the public until July 22.

President Wang Sea-fue highlighted the university's strong ties to Taiwan's mining development. The school has established a mining department as early as in 1937 when it was called Taipei Industrial Vocational School. The department later became the metallurgical engineering department when the school was named Taipei Institute of Technology in 1949, and it is now the Department of Materials and Mineral Resources Engineering. The university has trained numerous professionals who have contributed to Taiwan's mining operations and technological advancements. Many alumni pursued careers in coal or gold mining companies, including the state-run Taiwan Metal Mining Corporation (TMMC), where they played significant roles in the industry's development.

The National Archives described the documents of Taiwan's gold and copper mining industry as a time capsule, preserving precious historical materials including the process of gold and copper mining, smelting, and miners' lives. The exhibition was first shown in its full format at the New Taipei City Gold Museum last year. For outreach campaigns, the National Archives has condensed the materials as a small-scale, portable exhibition. Taipei Tech is the first place to show the scaled-down exhibition this year, and the National Archives will be working with more higher education institutions to build public appreciation for national archival collections through diverse promotional efforts.

Hu Hsien-lun, Taipei Tech's library director, emphasized the uniqueness and rarity of the gold and copper mining industry archives from the National Archives. These archives are crucial historical materials documenting Taiwan's mining development and have been registered as part of the World Memory National Register by the Ministry of Culture's Bureau of Cultural Heritage. A notable theme of the exhibition is the Jinguashi Mine, which was once renowned as the primary source Asia's premier precious metals. In addition to preserving on-site relics and showcasing mining culture at a museum, the National Archives uses this portable exhibition to show geological maps, engineering blueprints, and vintage photos that illustrate TMMC's development and Jinguashi Mine's history. The aim is to educate students about Taiwan's local mining history and support the deepening of historical memory and culture preservation.

TAIPEI TECH

Publisher
Sea-Fue Wang

Executive Editors
Chien-Wen Wu

Editors
Imin Chang
Sheng-Wen Huang
Siao-Jing Chen

English Copy Editors
Sheng-Wen Huang
John Chen

pmp

Taipei Tech Post
Read Online