TAIPEI TECH POST



BIMONTHLY <u>NEWSLE</u>TTER

NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY



2 Taipei Tech Commencement 2019 Tech Company CEO and Gangster-turned-pastor Speak at Taipei Tech 2019 Commencement Ceremony

3 Global

Taipei Tech and the University of Cincinnati Joins Hands in Smart Sensors and Al Program

4 Penn State MRI Director Visits Taipei Tech, Moving Potential Partnership Forward

5 Research

Taipei Tech Brainwave Reader for Mental Diseases Earns TWD Sixty Million Investment

6 Achievements

Taipei Tech Industrial Design Wows Crowd with Problemsolving Designs

7 Achievements

Taipei Tech People -Jorge Sanchez

8 Model APEC

Taipei Tech Hosts Model APEC, Aims to Broaden Students' Global Perspectives

Publisher	Executive Editors	Editors	English Copy Editor	Visit Us	1
Sea-Fue Wang	Cherng-Yuh Su Ho-Chiao Chuang	Yun-Hua Yang Chia-Yu Hung Jessie Lin Siao-Jing Chen	Chia-Yu Hung		

TAIPEI TECH COMMENCEMENT 2019

Tech Company CEO and Gangsterturned-pastor Speak at Taipei Tech 2019 Commencement Ceremony



Taipei Tech hosts its 2019 commencement ceremony on June 1, 2019. Paul SL Peng, chairperson and CEO of AU Optronics Corporation and a Taipei Tech alumnus, and Dr. David Tai Hao Lu, a gangster-turned-pastor, were invited to give commencement speeches.

Peng graduated from Taipei Tech in 1979 and has been devoting himself to the technology industries for over three decades. Under his leadership, AUO undergoes reorganization and product repositioning and becomes profitable again. He is also devoted AUO to education, cultural preservation, and sustainability by providing funding and engaging with local communities. His work has earned him an Outstanding Corporate Sustainability Professionals Award from the Taiwan Institute for Sustainable Energy in 2018.

In his commencement speech, Peng mentioned that he grew up in a farming family and needed to herd cows and worked as a construction worker when he was young. During his career that spans more than thirty years, Peng spends more than one third of the time working as an expatriate, nine years in Malaysia and four in Suzhou, China. According to Peng, being an expat has trained him to open his mind and broaden his horizons. He encourage graduates to take any opportunity to work in a multicultural environment.

Peng is also committed to the development of Taipei Tech. He holds a key role in Taipei Tech Elite Union, a Taipei Tech alumni association that bridges Taipei Tech and the business world, and has established several internship, scholarship, and research projects between AUO and Taipei Tech. Peng is conferred an honorary doctoral degree in the 2019 commencement ceremony.

Dr. David Tai Hao Lu gave a speech entitled "The Sword and the Sheath," depicting his life transformation from a top-ranking gangster in the Bamboo Union to a pastor. Lu converted to Christianity when he was last in prison and, upon release from prison, studied and obtained PhD in education from California International Theological Seminary and PhD in philosophy from Peking University. He now works with offenders and dropouts. Drawing from his own experience, Lu encourages students to build moral character and "do not think any virtue trivial, and so neglect it; do not think any vice trivial, and so practice it."



GLOBAL

Taipei Tech and the University of Cincinnati Joins Hands in Smart Sensors and AI Program

Taipei Tech joins hands with the University of Cincinnati (UC) in opening joint courses and programs on smart sensors and artificial intelligence. The new partnership starts with a pilot education collaboration (PEC) program in artificial intelligence, commencing in May 2019. An opening ceremony was held on May 6 to celebrate the commencement of this program and the partnership between Taipei Tech and UC.

"The PEC program marks a great beginning of the partnership between the two schools," said Taipei Tech President Wang Sea Fue, "and although it is a five-week program, we also have the summer program in big data and internship with UC lined up for July 2019."

Taipei Tech and UC are also in talks of a dual master's degree program. Once confirmed, Taipei Tech students can obtain a bachelor's degree from Taipei Tech and a master's degree from UC by completing three years of study at Taipei Tech, one senior year and a master's program at UC.

"As a leader in higher vocational education in Taiwan, Taipei Tech is the gateway to the world for our students," said Wang. "We want our student to enjoy the abundant resources and connections of Taipei Tech. This partnership with UC further expands the opportunities of our students." Dr. Paul Orkwis, Dean of the UC College of Engineering and Applied Science, mentioned that many leaders of internationally-renowned Taiwanese companies are alumni of UC, like president of MediaTek M.K. Tsai and vice chairman of Sampo Corporation Eric Chen.

"We are very similar to Taipei Tech: also one of the oldest technical education institutions in the US, well known as a practical research University, 'a cradle of entrepreneurship' that has produced many notable alumni," said Orkwis.

Of the one hundred sixteen students who applied to the PEC program, thirty-nine students were admitted after passing a portfolio review and a two-stage entrance interview in English.

The PEC program is part of a Ministry of Education initiative to bring in education model of world-renowned universities and cultivate technical professionals with high global mobility. Taipei Tech excels in the fields of smart technology and sensor technology and therefore receives a three-year funding to venture in international collaboration in these fields.

<complex-block>

GLOBAL

Penn State MRI Director Visits Taipei Tech, Moving Potential Partnership Forward

Dr. Clive Randall, director of the Material Research Institute (MRI) at the Pennsylvania State University, visits Taipei Tech in late May to start preliminary talks to build a research partnership. With its strong capacity in applied science and technology, Taipei Tech has entered into partnership with several international academic institutes in recent year.

Taipei Tech and Penn State have been seeking to forge a long-term research alliance that shares research resources. Representatives from both universities have paid frequent visits to each other in the past few years and have formed mutual understanding of the research environment and initiatives in each university. The visit from Penn State this time is a step forward to future collaboration.

Dr. Randall's one-day visit begins with a morning presentation on the Material Research Institute at Penn State. The presentation covers the organization model, researcher cultivation, research priorities, and an overview of annual grants and external funding. One of the major strengths of Penn State is its cross-disciplinary education model that enables students access knowledge in different fields.



Dr. Randall delivers a speech to the faculty and students of the College of Engineering

In the afternoon, Dr. Randall is introduced to the three major research centers of Taipei Tech. He is impressed with the Precision Analysis Material Research Center and talks extensively with Vice President Yang Chung-Kuang, who is one of the key directors of the center. The visit continues to the Center of Smart Textile Technology, with introduction from Prof. Chang Shu-Mei, chairperson of the Department of Molecular Science and Engineering, and to the Center of EMO Materials and Nanotechnology, introduced by President Wang Sea-Fue.

At the end of visit, Dr. Randall delivers a speech to the faculty and students of the College of Engineering, discussing the strategic plan and operations of MRI and the ongoing research projects of their faculty.



RESEARCH

Taipei Tech Brainwave Reader for Mental Diseases Earns TWD Sixty Million Investment



Statistics from the World Health Organization shows that over three hundred million people suffer from depression worldwide, causing enormous social and financial burden to the society. A team led by Prof. Liu Yi Hung of Taipei Tech Department of Mechanical Engineering has designed and implemented a brainwave reading system that can screen for potential depression patients. The team received TWD sixty million investment from Campal Electronics, a tech giant in laptop manufacturing and smart healthcare, to found Hipposcreen Neurotech Corp (HNC) and continue the research and development and marketing of this technology.

HNC plans to initially focus their effort in detecting depression with their brainwave reader system. The company schedules to finish the product testing by the end of 2020 and to release the product to the market in 2021.

"Our technology is currently unrivaled both in Taiwan and in the world," said Liu. "It is also the first investment in smart healthcare system that focuses on head that Campal Electronics made. Liu further indicated that the typical way of diagnosing depression has been through interviews with psychiatrists. This process is long and laborious, and it often requires that the patients show signs of impaired abilities before the diagnosis can be confirmed. The brainwave reader designed by Taipei Tech researchers can evaluate and indicate the possibilities of depression, dementia, and other psychological disorder. Liu believes this will be a great aid to medical professionals.

"Signal detector is one of the research fields that has gained great traction in recent years at Taipei Tech," according to Taipei Tech President Wang Sea Fee, "and we are also pouring resources into the application of signal detector in healthcare and cloud computing." Wang also commended the research team for establishing partnerships with the Center for Depression, Anxiety and Stress Research at Harvard University and several medical institutes in Taiwan. The team was also invited to give a talk at the 57th Annual Meeting of Taiwanese Society of Psychiatry in 2018.

Liu's team is also the receiver of many awards and startup funds. They include the outstanding startup company award in the Innovation & Startups Program in 2017 and the outstanding team in the Taiwan Tech Arena Program in 2018, both programs are backed by Taiwan's Ministry of Science and Technology. The team also received accelerator fund from the Tech Venture Club of Industrial Technology Research Institute.



The brainwave reader designed by Taipei Tech researchers can evaluate and indicate the possibilities of depression, dementia, and other psychological disorder

ACHIEVEMENTS

Taipei Tech Industrial Design Wows Crowd with Problem-solving Designs



Eleven graduation projects of Taipei Tech industrial design students stand out from more than 6,300 projects from sixtyfive schools in Taiwan and are nominated in fifteen categories in the 2019 Golden Pin Design Award. Designers of these nominated projects address problems concerning the environment, inconvenience of daily life, and cultural preservation through their projects.

The Solo Cooker by Zheng Zixuan is intended for busy individuals who live alone in a rental room without a kitchen. The project is a set of compact, modular cookware that is extremely mobile. The set includes a grill pan, a frying pan, a steamer, and electricity-powered heating system. It also comes with a companion smartphone app that users can set the temperature and time for cooking, making it a convenient, space-saving, and safe alternative to a full-fledged kitchen.

Chen Guoqiang, a student from Malaysia, designed the River Cleaner out of his passion and love for surfing. Through research, he has discovered that 90% of plastic waste in the ocean comes from the river. Chen addresses this problem by utilizing the force of water flow to power the helix-shaped River Cleaner and direct and capture floating garbage. Once captured, the garbage goes into a container where it will be picked up regularly.

Other projects include the Fan and Chair Symbiosis, the Toaster Player, and the Steel Fence Chair. The Fan and Chair Symbiosis is a fan that can be easily turned into a chair during winter when there is no need for a fan. The Toaster Player is a toaster that adapts the form of a vinyl record player, where the "turntable" is where the user puts the bread and the "arm" is actually a radiator made of quartz. The Steel Fence Chair combines a traditional Taiwanese bench and the stainless steel window frame commonly found in Taiwan.

"Taipei Tech Department of Industrial Design is one of the earliest of its kind in Taiwan," said Taipei Tech President Sea Fue Wang. "Our industrial design students have been frequent winners of the iF Design Awards and the Red Dot Design Awards, and it attributes to their ability of turning the nuances of their daily life into their inspiration for the designs."



The Solo Cooker by Zheng Zixuan

ACHIEVEMENTS

Taipei Tech Coding 365 Brings Programming Education To More People



Through the Digital Innovation Program of the Ministry of Education, Taipei Tech started its first coding camp, Coding 365, in July 2018. Fifty students from high schools and universities throughout Taiwan joined the camp and spent the summer learning programming and project management skills.

Coding 365 is modeled after the open programming education program offered by École 42 in France. The participants, regardless of their background, learn coding and work on projects together. In the 2018 Coding 365 program, all students learned the Python programming language and Scrum project management concepts in the first two months, and forty of them chose to continue working together on projects and formed their own book clubs after the two months. Students can then present their projects and receive feedback from veteran programmers working in the industry. On May 3, 2019, Taipei Tech hosted a conference demonstrating these projects.

Mou Zhanyou is a Coding 365 student from Song Shan Senior High School and has previous coding experience. He works with his team to develop Super Resolution Bot that can automatically increases the resolution of an image. It can be broadly used to sharpen close-circuit monitor images, astrological images, and medical images. Liao Xuhong from Taipei Tech and Zheng Yuzhen from National Chung Hsing University create a bot that processes news articles using semantic analysis algorithm and generates a list of phrases and words used in the different media outlets. With this technology, they hope to help consumers see the political tendency of news media and later broaden the application to see financial trends.

"Coding skill is in high demand right now," said Yang Shih Hsuan, Dean of Taipei Tech Office of Academic Affairs, "but many people do not know where to start learning." Coding 365 is set up to fill this need by providing environment and curriculum with free tuition and lodging and scholarship for students, adults, or the underprivileged, with help from the Ministry of Education.

"It is also a challenge for the instructors since the program offers no credits nor a degree," said Lee Chao Hsien, project head of Coding 365. "Instructors need to come up with activities and games to motivate the students." Lee is also thankful for students who have previous coding experience in actively assisting fellow students.

MODEL APEC

Taipei Tech Hosts Model APEC, Aims to Broaden Students' Global Perspectives

The participants composed of high school and university students from throughout Taiwan took part in the event



Taipei Tech hosts a full-day APEC workshop designed to familiarize participants with APEC procedures and goals for 2019 on June 6. One hundred participants composed of high school and university students from throughout Taiwan took part in the event.

The event starts with an introduction to the APEC HRDWG (Human Resources Development Working Group) and the issues that it concerns with. The speakers are a senior Ministry of Education official who has participated in APEC Education Network meetings and a senior researcher from Taiwan Institute of Economic Research. The event also features sharing from students who have participated in APEC events in the previous year.

A Model APEC SOM (Senior Official's Meeting) takes place in the afternoon. Participating students are grouped into one of APEC's twenty-one member economics and in topic-based panels. Each member economy needs to give a presentation on a designated topic, taking into account the priorities of their own economy and of HRDWG. Each presentation is immediately followed by comments and questions from other economies. After the presentations, students representing the different member economies also need to seek endorsements from each other in order to gain support for the grand prize, or in a real SOM meeting, the full funding from APEC.

With support from the Ministry of Education, Taipei Tech has become one of the major hosts of many projects that APEC HRDWG runs and has gained praise from many APEC member economies. This year, work is extended to educate young adults, especially students, for a better understanding of international meetings and the ways to voice ideas in order to gain international support.

As a leading technical and vocational education and training (TVET) institute, Taipei Tech is rich in educational resources and vibrant in human and science capacity. Taipei Tech currently houses two projects commissioned by the Ministry of Education, the Working Group to Internationalize Technological/Vocational Education in Taiwan and the Asia-Pacific Youth Innovation & Entrepreneurship Project, to bring Taiwan's TVET and startup experience to countries in Asia Pacific. In the 2019 APEC HRDWG meeting in Chile, Taipei Tech's effort even gained verbal recognition from some member economies, starting "worth praised as the most successful project."