



NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY

TAIPEI TECH POST



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Taiwan Handmade Paper Showcases in France

Paper is edible? Paper gowns are washable? Puli Township in Nantou County, Taiwan is the only remaining place of production for handmade paper. Through the active assistance of Taipei Tech Cultural Vocation Development Department, Assistant Professor Chiu-Lan Liu, six handmade paper mills will display their products at the Musée des Maisons Comtoises in France, in an exhibition entitled "Paper is Not Dead". Some of the products that the six paper mills will showcase include edible paper with various flavors, washable clothing and accessories, and handmade paper nightlights.

Liu studied for her PhD degree in Art History and Archaeology at Paris-Sorbonne University, and specialized in art, museum studies, archaeology, and French. When Liu went to Puli Township to conduct fieldwork on the handmade paper industry, she discovered that although there are only six remaining handmade paper mills, each developed a wide variety of paper, and the resulting cultural and creative paper products are exquisite. Liu felt that the hard work of the paper mill industry over the years should be internationally recognized.

She contacted the Musée des Maisons Comtoises and arranged for the exhibition of the six paper mill's products from September 6 through November 2, 2014. During the exhibition, the paper mills will share their experience and learn from the handmade paper industry from other countries. Each paper mill will provide 30 different types of writing paper, five 2-D and five 3-D creative products. After the exhibition, all work will be featured in the museum's permanent collection.



Paper gowns

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Hoping to increase the visibility of Taiwan, Guansing Paper Mill ingeniously created paper nightlights with the shape of Taiwan as the design. The nightlights are made out of PVC heat-resistant boards and LED light bulbs, making the nightlights extra safe. The outermost layer is covered with paper. When the nightlights are turned on, the light highlights the design and the texture of the fiber.

Washable paper is made from the pulp of strong mulberry bark and natural dye made from persimmon. The paper is soft and light, water and weight-resistant, and can be hand-washed for more than 10 times. The paper does not tear easily and can be made into articles

of clothing such as paper clothing, paper shoes, and paper purses. At present, a piece of water-resistant paper measuring 90 cm by 180 cm costs 27.00USD. Many customers buy the paper for arts and crafts projects.

As for edible paper, it will drastically change French people's concept of food. Guansing Paper Mill already developed over 50 types of edible paper made from fruit and vegetable fibers, including pineapple, chocolate, and malt sugar. Eating paper has become a novel and fun food trend. (photos: ipuli.tw and xuexuecolors.org)

Taipei Tech collaborates with NVIDIA to establish Embedded GPU Joint Lab

Professor Huang and NVIDIA VP of Solution Architecture and Engineering



On July 8, NVIDIA hosted the annual GPU Technology Workshop in Taipei and attracted over 600 government officials and industry and academic leaders. During the workshop, NVIDIA announced that the company will collaborate with Taipei Tech to establish the Embedded GPU (graphics processing unit) Joint Lab (NVIDIA-Taipei Tech Joint Lab), and donated a Jetson TK1 development kit to Taipei Tech. In addition to preparing students to become experts in GPU technology, this project is also committed to develop embedded GPU technology and provide solutions for business partners using this technology, such as applying parallel computing technology to automobiles, robotics, and other large mobile devices. Taipei Tech alumni are successful leaders in Taiwan's IT industry. NVIDIA and Taipei Tech plan to leverage expertise and resources to play a significant role in the robotic supply chain.

The GPU Technology Workshop held in Taipei this year included discussions on three major future trends: Virtual Desktop Infrastructure, High Performance Computing, and professional visualization & design. This event began with an opening speech from the Vice President of Solution Architecture and Engineering at NVIDIA, Marc Hamilton. The opening speech was followed by the exciting keynote speech from Taipei Tech Honorary International Chair Professor Bormin Huang on the latest computing development of GPU and the latest advancement in space science applications. Professor Huang is a research scientist and CUDA fellow of the Space Science and Engineering Center at the University of Wisconsin-Madison and was a principal investigator of a NASA-funded project. In this joint project, Professor Huang will serve as the director of

the NVIDIA-Taipei Tech Embedded GPU Joint Lab.

Professor Huang said, demands in massive data computing pushed the growth of GPU. Its computing speed is much higher than the commonly seen CPU (central processing unit). Using larger memory bandwidth and faster data transfer rate, a few GPU would be equivalent to many supercomputers in the past. GPU is expected to be used in earthquake and tsunami simulation analyses; in automobile systems, GPU can recognize pedestrians and animals in addition to automatic parking.

In the workshop, NVIDIA also invited over 20 experts, professors, and partners from Taiwan's industry and academia. Together, they demonstrated the major research and application of GPU technology in various fields. The seminar topic speakers shared with participants the benefits and wide influences of GPU technology and demonstrated the application of GPU technology in education, scientific research, and commercial fields. GPU technology will deepen collaboration between industry, government, and academia.

Taipei Tech President Leehter Yao said, "We are very honored to be the first university in Taiwan to collaborate with NVIDIA on this project. Taipei Tech has a long history in cultivating outstanding professionals in engineering research and development, and contributed greatly to Taiwan's electrical engineering and computer science industry. With the expertise of Professor Bormin Huang and the most innovative hardware provided by NVIDIA, this project will certainly lead the way to the next wave of development in Taiwan's tech industry."

Taipei Tech Shines at 2014 iF Concept Design Awards

The Germany-based iF Concept Design Awards is one of the world's oldest international design awards, and it is one of the four biggest design awards along with Red dot (also Germany), Idea (U.S.), and G-mark (Japan). Last year, Taipei Tech ranked 12th place among world universities and jumped to 4th this year. In this intense global competition of 10,847 submissions from all over the world, Taipei Tech outshone other participants with at

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least four winning projects and another eight reaching the top 300 finalists.

Love the outdoors, want to soak in the sun, but afraid of getting sunburned? Taipei Tech Department of Industrial Design student Guan-Hao Pan and Hsueh-Jeh Hsiao used their working holiday experience to win the iF Concept Design Award. When Pan was working at the Yellowstone Park in the U.S. over the summer, he noticed that even though all sunscreens have PA or SPF labels, many people don't know when to re-apply sunscreen or often forget entirely and their skin end up peeling. Pan also got a painful sunburn himself. When he returned to Taiwan, he and Hsiao developed a photochromic stamp on the cap of the sunscreen bottle for users to stamp their arms before applying sunscreen. The black stamp will turn red as the sunscreen absorbs UV light and runs low, accurately remind users when to re-apply sunscreen and prevent sunburn. "Sun Stamp" was selected as one of the top 100 projects in this year's iF Concept Design Award.

Taipei Tech students also won the exclusive Haier Special Prize with "Golden Proportion Health," which underlines the importance of a balanced diet. Bing-Han Lin, You-Yi Lin, and Hung-Po Ou Yang, also students from the Department of Industrial Design, developed a plate specially designed for children according to the appropriate portions of different food groups. The idea is for children to achieve healthy diets by measuring the right amount of carbohydrates, vegetables, fruits, meat, and milk into a "food group golden ratio". You-Yi Lin said not only will the plates prevent childhood obesity and undernutrition, the plates will also be produced with eco-friendly materials.

Yet more students from the Department of Industrial Design, Hsin-Li Wang, Wei-Cheng Huang, Chiung-En Chang, Pei-Chih Deng, have won the

Haier Special Prize with "Thawer," which allows users to choose which part of the frozen food they wish to defrost. Wang loves to cook, but finds thawing specific parts of steaks difficult. At a dinner, Wang and his lab mates came up with "Thawer," a cutting board with thermoelectric generating module technology that allows users to thaw specific parts of foods. "Thawer" solves the difficulty of cutting frozen meat and keeps the unused parts fresh. It will no doubt become a kitchen tool coveted by chefs.

Graduate student Pei-Chih Deng and Ju-Ting Yang won silver at the International Bicycle Design Competition – iF with "City Scooter". Deng and Yang enjoy using the bike-sharing system (Youbike) that Taipei offers. During peak hours, however, it is difficult to find an untaken bike. Deng and Yang came up with "City Scooter," which can be locked with Taipei metro system's "easycard" and has a memory function that records the scooter's adjusted height when last use by the easycard holder. Users can store electricity when they use the scooter by transforming kinetic energy into electricity. "City Scooter" is 1/5 the size of a YouBike and is foldable. It is sure to become another popular transportation means for Taipei citizens and relieve the high use of Youbikes.

Department of Industrial Design and Graduate Institute of Innovation and Design, Dean Chiwu Huang said, "Over the years, Taipei Tech has cultivated many outstanding designers from various fields. This time, students shone on the international stage with designs inspired by astute observations from daily life. No doubt this is the best recognition for young designers and their creativity."



Taipei Tech Students Grab Diplomas, Professional Licenses, and Job Offers all in 4 Years



Mid-May, it is oddly quiet in the automotive factory of Taipei City Vocational Development Institute. Over the past eight months, starting early in the morning, the factory was filled with the din of 40 Taipei Tech students hammering metal sheets. Today they are gathered in the auditorium, wearing suits instead of their coveralls and waiting for their round two interviews with car companies. The desire to show what they've got is written across their youthful faces. From local car makers to BMW, Ferrari, and Audi, a total of 23 domestic and foreign automobile manufacturers are eager to hire these students.

So how do these college freshmen come to be such skillful craftsmen in sheet metal forming technology, making major automakers scrambling to hire them?

The answer lies in the Automotive Engineering Technician Training Program of Taipei Tech, in collaboration with Taipei City Vocational Development Institute. In this program, freshmen students receive 1,600

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hours of training from senior masters at the Vocational Development Institute. They are taught auto repair, sheet metal welding, and other skills. Starting in their sophomore year—thanks to networking opportunities provided by their masters—the students will begin working at automobile manufacturing companies and earn the same amount as regular employees. At night and during the weekends, the students will return to Taipei Tech to attend classes.

When these students graduate, not only will they have a bachelor's degree from Taipei Tech and technician licenses, compared to other graduates, their résumés will also include three more years of solid work experience. The Automotive Engineering Technician Training Program allows students to prepare early for future employment and automakers to hire the best candidates.

The Energy, Refrigeration, and Air Conditioning Training Program—established by Taipei Tech last year, in collaboration with the Ministry of Labor-Work Force Development Agency—tells a similar story.

Last year, the program accepted 40 students. In their freshmen year,

students received 1,800 hours of training at the Work Force Development Agency and tested for their professional license. They were taught a wide range of skills, including welding, leak detection, repair, maintenance, and design. These students attracted 55 well-known enterprises seeking to fill 162 openings, which meant that each student had four jobs to choose from.

"Many employers have even complained to us that our program of just 40 students simply isn't enough to accommodate the industry's demand," Taipei Tech President Leehter Yao said.

In their sophomore and junior years, these students will work during the day and attend classes at Taipei Tech at night or during the weekends. These students will spend the same amount of time as other college students, but they will receive their diplomas and a set of practical skills all at once and become the most sought-after engineering technicians.

Students from both programs are favored by potential employers for their technical skills and positive work attitude. During interviews, employers are impressed by these students' willingness to learn. They are not afraid of hard work, employers report.

Cultivating young talents through these training programs, Taipei Tech, industry, and government institutes are solving labor shortage issues and promoting youth employment at the same time. Optimism abounds for both training programs.

Taipei Tech and Osaka Institute of Technology Joint Problem-based Learning Program



A Taipei Tech and Osaka Institute of Technology (OIT) intelligent vehicle competition took place at Taipei Tech on August 23. The Department of Mechanical Engineering of Taipei Tech and the Department of Electrical Engineering of OIT

jointly established a problem-based learning (PBL) program last summer. Problem-based learning helps students achieve a deep understanding of the subject and greatly increases students' retention rate through hands-on learning. The goal of problem-based learning is to cultivate practical engineering skills and professional skills in students.

"Problem-based learning allows students to learn professional knowledge and problem-solving skills, this is why we invited students and professors from OIT for the program," said Taipei Tech Department of Mechanical Engineering Associate Professor Ho-Chiao Chuang. Students from OIT brought the components of intelligent vehicles with them. Students from both countries were mixed together and divided into groups to assemble intelligent vehicles. They are either experts in mechanical engineering or electrical engineering. Each group must coordinate the talents of its members when they tackle various tasks including mechanical design,

wiring, and motor installation.

An added challenge is that the cost of additional materials cannot exceed 33.00 USD. With this small budget, the vehicles must overcome a bumpy racetrack with curves and downward and upward slopes—all in 60 seconds. These vehicles are equipped with sensors, welded components, and re-written firmware programs in order to pass the obstacles of the racetrack.

Sixteen students from each university participated in this program. They are not strangers to assembling intelligent vehicles, but international collaboration and competition is a fresh experience. A senior student from Taipei Tech, who has participated in competitions since high school, said that she heard of this program when it was first established last year and has longed to participate in it. In group discussions and during the re-modeling of the vehicles, she observed the careful thought processes of her Japanese colleagues. "This program has been a valuable learning experience," she said. Another senior student thinks that using software to re-model intelligent vehicles is nothing difficult compared to communicating with his Japanese colleagues, even though he taught himself Japanese. At times like these, the "international language" of gesturing is very useful.

"In addition to the appearance of the intelligent vehicles, the race, the designs, students' participation, and their daily presentations on the progress of the making of their vehicles are also used in the scoring criteria," said OIT Professor Hong Zhou. This year is the second consecutive year that Professor Zhou took his students to Taiwan to participate in the program. He is certain that this program has boosted students' creativity, improved their technical skills, and expanded their horizons. "Next year, Taipei Tech professors and students must come to Japan and be our guests!" he insisted.

Wish you have a great day ahead,

A handwritten signature in black ink, reading "Wenlung Li". The signature is written in a cursive, flowing style.

President

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