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According to Science



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the Risk of Sudden Death

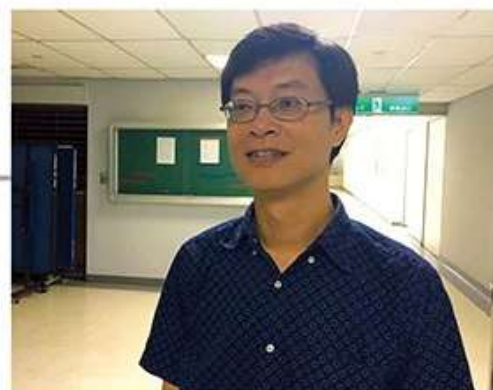
Choose the Right Air Purifier According to Science

Taipei Tech research team from the Institute of Environmental Engineering and Management conducted a study of comparison the effectivity between 11 different air purifiers and deodorizer. The result showed that activated carbon-zeolite filter performs best in keeping nitrogen oxide which is a common indoor air pollutant away among its competitors. This research was presented on Taiwan Public Health Association Annual Academic Conference for the first time.

Chao-heng Tseng, Chairman of the Institute of Environmental Engineering and Management, noted that there are many air pollutants such as PM2.5 and formaldehyde. This research only focus on nitrogen oxide which came from vehicle exhaust emissions is almost everywhere. The impact is related to the floor and location one lives.

In speaking of reducing another ordinary air pollutant, i.e. PM 2.5, HEPA is the best choice. Some customers believe that ozone generator can remove odor, but it is actually a no-go solution since it will not only cause damage to the environment but also harm respiratory tract according to Tseng.

Zong-Hai Yan, Doctor from the Chang Gung Memorial Hospital, Linkou Branch, noted that only N95-certified masks can prevent us from PM 2.5 outside of a building. But people often find wearing this type of mask is uncomfortable. Therefore, Yan recommend folk to try to stay in and close windows when air quality is horrendous.



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Taipei Tech Joint Hand with MIT on Autopilot PEV R&D

The first autopilot plug-in electric vehicle (PEV) developed by MIT Media Lab was displayed at the 2016 Microsoft IoT Expo on Oct 17. In the future, people can expect to use APP to reserve one of these eco-friendly vehicles at a nearby spot to travel in the city. To increase convince, passengers can even use smart card for current Metro system to pay for car rental rate.

Two of the MIT research team members are current students at Taipei Tech, i.e. Hong-Yi Liang from the Master Program of Computer Science and Information Engineering and Chang-Chi Zhang from the Department of Electrical Engineering.

Liang and Zhang worked in the same project about unmanned vehicles back in Taiwan. This June, they were invited by MIT Media Lab to be part of their project and design PEV's communication system. Liang was in charge of developing software program. Zhang handled software and hardware integration.

Chang-Chi Zhang noted that PEV uses AI, camera, and Lidar to analyze surrounding image and detect distance. It also uploads these data to cloud and calculates the best path according to traffic. Speaking of this trip to MIT, he said this is his very first time traveling aboard. With MIT research team, he participated in an unexpected exhibition in Andorra. On the opening press conference, they couldn't turn on the PEV in the beginning but fortunately clear this malfunction in a short period of time.



After three months staying in the United States, Zhang learned to communicate with people from different field and culture. MIT has rich practice courses and focuses on cross-disciplinary integration. He thinks those features are something that Taiwan vocational education could learn from. Furthermore, he had the opportunity to learn latest techniques and sharpen his language skill.



Taipei Tech Launched Second Professional Specialty System

Taipei Tech's 2016 Entrance ceremony was held on September 12. This year, we have 2088 freshmen. In the welcome speech, President Yao shared his personal observation with students. Yao noted that nowadays people need to develop second professional specialty to adapt to the fast changing trend of the globalized world. He took digital camera industry for an example. Ten years ago, talent demand was high in digital camera industry and you can make lots of money working in this field. But until today, smart phone almost replace the role of digital camera. It means that in addition to focus on core profession, students have to conduct disciplinary learning.



Traditional double majors and minor regulations not only require students to take additional credits besides their major credits but also prolong their academic years in most cases. In order to improve this situation, Taipei Tech established a brand new system called Second Professional Specialty. The Second Professional Specialty system encourages students to take courses from other Departments. For example, Department of Mechanical Engineering has Precision Manufacturing and Mechanical Design; Department of Electrical Engineering has Power Conversion and Automatic Control; Department of Cultural Vocation Development has Culture and Soft Power Skill Development Module; Department of Information and Finance Management has Finance Technology, and so on.

Overall, every Second Professional Specialty has 15 to 18 credits. The required courses and credits are designed by each Department. Because credits from taking other Department's courses are already be recognized for graduation in a certain amount in the current regulation, the Second Specialty won't cause extra burden for students. Furthermore, the name of Second Specialty will show on students' Diploma, Transcript for All Semesters, and other related certificates if students finished the requirements.

President Yao encouraged freshmen to take part in innovation and entrepreneurship and increase English competence. Also, it is important to have curiosity, imagination, creativity, logical thinking, and to sharpen their expression skills. In the end of speech, President Yao expect all of them could be prospective talents after four years of college life in Taipei Tech.

Medical Wearable Device Tells You the Risk of Sudden Death

Wearable device is in trend right now. Ren-Gui Li, Professor from the Department of Electrical Engineering and founder of Zoetek, has been working on healthcare applications for electrical and information techniques for years. The aim for Li is to develop medical wearable device that is different from what we could see on the current market. Li noted that most wearable devices focus on sport and entertainment purposes, but medical wearable device is gaining more



attention than ever since we are entering an aging society.

Li is the leader of medical mechatronics laboratory which made over 10 million NTD technology transfer income during 2012 to 2014. Recognizing the potential of medical mechatronics technology, Taipei Tech Innovation and Incubation Center helped Li to start a new company, Zoetek, which develops medical measurement device. Many products such as portable oxymeter/sphygmomanometer and intelligent health promotion bracelet are already available.

The intelligent health promotion bracelet can measure user's heartbeat, blood pressure, sleeping quality, and heart rate variability. By tracking user's heart rate variability, it can be used for sudden death risk calculation. In Li's opinion, integration of various useful measurements such as blood pressure instead of pedometer in wearable device can increase user's interests of usage.

The logic behind intelligent health promotion bracelet is Green LED, which can detect heartbeat and blood oxygen content. But Li said it is difficult to get precise data for all the optical interference in the environment. In order to make it work, Taipei Tech alumni lent a helping hand. EVERLIGHT and Lite-On Technology Corporation provided their research and develop energy for designing a special component for Li's bracelet. Under Taipei Tech alumni's strong support, the precision of intelligent health promotion bracelet can be elevated and now is under process for applying for medical equipment certification.

Leehter Yao, President of Taipei Tech, indicated that alumnus is strength for our teachers and students to start a business. Zoetek's R&D process and it made its way to Incubation Board for Startup and Acceleration Firms are two great examples to name a few.

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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