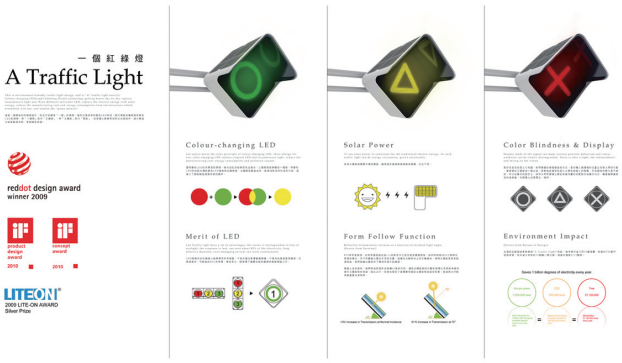
Awards and Commendation

YunTech Department of Industrial Design Wins Three International Design Awards



"A Traffic Light"

Cheng-tsung Fan, Po-jin Wang and Yao-chieh Lin, students of the Department of Industrial Design of National Yunlin University of Science and Technology (hereafter called YunTech), followed the instructions of Professor You, Manlai and Yuan-liang You and won worldwide recognition by gaining three international design awards for the work they designed together called "A Traffic Light".

As the way it is called, "A Traffic Light" is environment-friendly and composed of only "one" light bulb which makes it different from the traditional traffic lights. Its designers applied the color-changing LED technology to replace the traditional incandescent lamp and single-color LED and used "solar energy" as its power resources to replace "electric energy". This work, serving as a public facility that everybody uses every day, is designed and completed with expectation to reduce energy consumption and possible pollution during its manufacturing process.

After being honored last year by the Red Dot Design Award, this outstanding design “A Traffic Light” was praised again by three other awards this year, those including iF Product Design Award, iF Concept Award and 2010 IDEA Silver Award. At the moment of receiving the award, student Cheng-tsung Fan became the first student to gain three international design awards before graduation.

Student Cheng-tsung Fan (left), Yao-chieh Lin (middle) and Po-jin Wang with award medals

YunTech Doctoral Student Cheng-wei Chen Receives Outstanding Thesis Award from Taiwan Association of Chemical Sensors

Held by the Association of Chemical Sensors in Taiwan, the “2009 Academic Thesis Evaluation” aimed at awarding prize to the most outstanding papers or patents published during 2009 and 2010 in the field of bio-medical or chemical sensors. Five journal papers were praised with the outstanding thesis award this year and one of which was jointly presented by Professor Jung-chuan Chou of YunTech Department of Electronic Engineering and Graduate School of Optoelectronics and Cheng-wei Chen, doctoral student of YunTech Graduate School of Engineering Science and Technology. This award-winning paper entitled “Fabrication and Application of Ruthenium-Doped Titanium Dioxide Films as Electrode Material for Ion-Sensitive Extended-Gate FETs” was published in the IEEE Sensors Journal (Vol. 9 (3), pp.277-284, 2009). Besides receiving this laudable award, student Cheng-wei Chen was honored with the fifth Technical and Vocational Excellence Award issued by the Ministry of Education in January 2010.

The award-winning paper focused on the application of a novel ruthenium-doped titanium dioxide (TiO_2: Ru) film to an ion-sensitive extended gate field effect transistor (ISEGFET) sensor for pH and calcium ion detection. For the preparation of the TiO_2:Ru sensing film, a specific processing for metal modification of TiO_2 thin film was deposited by a co-sputtering system. After thermal annealing treatment, material analysis of the sensing layer was measured by SEM, Hall measurement system and electrical detection system. The average sensitivity of TiO_2: Ru for hydrogen ion detection was about 55.20 mV/pH (concentration range between pH1 and pH13). In order to prepare the calcium ion sensor, the sensing membrane of polymer materials was based on TiO_2: Ru ISEGFET-based sensor by physical adsorption. The average sensitivity of the calcium ion sensor in the concentration ranging between 1 M and 1 times10^{-3} M $CaCl_2$ was about 29.65 mV/pCa. In addition to having high linearity and sensitivity as its advantages, the device is low-cost, easy to be produced and can be kept with dry storage solutions. It is expected that the device can be developed further in the future for the purpose of home healthcare, thus reducing medical resource waste and improving the efficiency of immediate detection as well as disease control.

Doctoral student Cheng-wei Chen receives the Outstanding Thesis Award of the Association of Chemical Sensors in Taiwan

Student Mei-chih Chou of Department of Creative Design Receives 2010 President's Education Award

Mei-chih Chou, a junior of YunTech Department of Creative Design, was one of the only seven students across Taiwan who were granted the "2010 President's Education Award". No matter how tough life has been challenging her, she never allows herself to be defeated by any difficulties. With perseverance and persistence she has made her own life and been recognized through the outstanding performance she has achieved.

Miss Mei-chih Chou is currently at the age of 48. When she was only ten months old, she was affected by poliovirus and became a severe physically disabled victim. Beginning from the occurrence of the disease, her parents brought her to travel around Taiwan, seeking possible rehabilitation. For a period of time she used to stay alone at a rehabilitation center and this experience nurtured her strong and independent personality.

As the access-free facilities were unsatisfactory on campus at that time, Miss Chou gave up the chance for further studies once she graduated from the junior high school. At age 20, she, accompanied by a wheelchair, studied art design at the Catholic Chu Ai Mercy Hospice for the Disabled in Changhua and started her pottery vocational training. During the time when she received the training, the life was full of frustrations and difficulties. However, she always could overcome these unfavorable circumstances and gain happiness from pottery making. After 20 years of hard work, she found a way for herself and became an artist and cultural worker dedicated to the pottery creation.

Miss Mei-chih Chou is working on pottery creation

At age 41, she restarted her school life and enrolled in the extension program of Sinying Senior High School. She graduated with outstanding academic performance and won the second prize for the pottery category at the ninth National Skills Competition for the Disabled and the seventh International Abilympics. When she was 45 years old, Miss Chou obtained the admission from YunTech Department of Creative Design and started the study for her bachelor degree.

Thanks to her distinguished performance, she was recognized as the member of "Taiwan Craftsmanship Development Association" in 2006 by the National Taiwan Craft Research and Development Institute, Council for Cultural Affairs, Taiwan. In September 2009, she was assigned to conduct the "Community Craft Cultivating and Development Project" sponsored by the same institute. In 2008, she cooperated with the Department of Industrial Design of Chaoyang University of Technology and implemented the "Project on The Development of New Craft Designers".

Academic Exchanges

2010 Cultural and Heritage Symposium

Besides the issues on Taiwan's cultural heritage that had been discussed in the past ten years, the tenth Cultural and Heritage Symposium held by YunTech Department of Cultural Heritage Conservation was expected to bring deeper concerns and more intensive discussions over conservation technology, historical resources maintenance, innovative management and philosophy. The symposium took place from May 15 to 16, 2010.

Professor Su-fen Yan, director in the Department of Conservation and Preservation of National Palace Museum and Professor Shu-cheng Tseng, dean of College of Visual Arts at Tainan National University of the Arts, were invited to deliver keynote speeches on the conservation of cultural property and the endorsement campaign to bring the Wusanto Reservoir

System into the World Heritage. Besides, various professionals were invited and took part in the symposium discussion and panels, those including Dr. Ming-huey Wang, director of Taiwan Indigenous Peoples Society and professor of National Taiwan Normal University and Professor Chih-chang Lai in the Graduate Institute of Taiwan Culture of National University of Tainan. At the symposium, several videos about the local cultural heritage in Yunlin County were demonstrated. These videos not only enriched the symposium and made it more diverse, but also infused a new phenomenon into the academic circle of cultural heritage conservation.

2010 Mobile Creativity Workshop

The “Mobile Creativity Workshop” was established in 2003 by the Research Center of Design and Art of Tongji University, China in response to the design requirement of the Simens in Germany. In its fifth year of establishment, the “2010 Mobile Creativity Workshop” took place under the cooperation between the Research Center of Design and Art of Tongji University and the College of Design of YunTech.

The workshop was held across the Taiwan Strait and organized with different topics according to the local characteristics of each location where it took place. For the workshop in Mainland China, the focus was “Visual Communication & Ecological Experience” while the topic “Town & City: Yunlin Cultural & Creative Workshop” was chosen for the activity in Taiwan. The latter focused on the quality agriculture, local craft and space arrangement in Yunlin County. Through the combination of local products and culture, it provided all the participants with the chance to discover the deeper value of Yunlin County as the agricultural capital of Taiwan and to recognize the potential power of traditional industry.

The workshop participants including students and teachers were of great renown in both the academic and industrial circles. Through the workshop a communication channel across the Taiwan Strait was established through which the exchange of ideas and cultures became possible and was successfully implemented. By the on-site visit and observation, students had opportunity to learn from the professional scholars from Taiwan and China and improve their innovation, design and implementation abilities. Thanks to the great success of the workshop, the participants including scholars, professors and students, broadened their horizon and became the ones who benefited the most from it.

2010 Taiwan International Cultural Design Camp

Held by YunTech Department of Creative Design and Taiwan Design Center, the “2010 Taiwan International Cultural Design Camp” took place from August 23 to 27, 2010 and attracted students from around the world such as Brazil, Singapore, Malaysia, Australia and others. It was expected that during the camp a new digitalized

The group E for Shibi Community Design

Ms. Yao-hua Su, creative director of Taipei Artist Village, delivers a speech

version of creative design could be developed and that through an open communication between different cultures fruitful results could be gained and inspired.

As part of the camp, the “International Forum of Taiwan’s Digital & Cultural Design” was arranged and Professor Chang-franw Lee, dean of College of Design, was invited to deliver a welcoming and opening speech. In addition to Taiwan’s eminent designers in the realm of cultural creative design, various worldwide recognized professionals were invited to the forum, those including Mr. Alexis Mailles, a renown artist from French, Ms. Yao-hua Su, creative director of Taipei Artist Village, Mr. Matthew Poh Meng NG from Singapore, Mr. Mark Chang, design director of Phalanx Creative & Design and Professor Yueh-hsiu Cheng as well as Laura Hsieh in YunTech Department of Creative Design. Several issues that the attendees concerned about were discussed through speeches and experience sharing, such as how to apply Taiwan’s cultural characteristics to lifestyle design by switching cultural elements and how the cultural values can be added to enhance the competitiveness of both the designers and the works they create.

“After the cultural exchange and experience sharing with the designers from around the world, my horizon has been broadened and my imagination has been inspired.” said student Liu. During the camp, both domestic and international students acquired basic understanding about the cultures of other countries and at the same time earned a broader international vision.

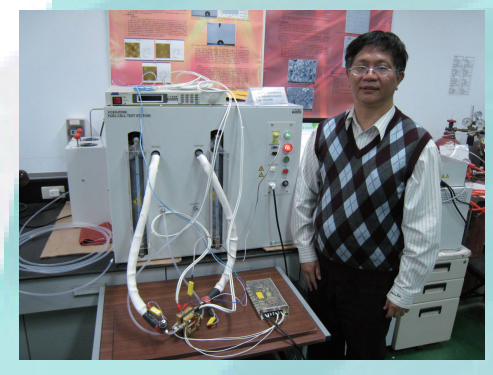
Domestic and international students conduct an enthusiastic discussion

Outstanding Performance

Green Technology–Fuel Cell

Coal, petroleum and other chemical fuel materials create the world’s civilization and constitute the energy that promotes and activates a nation’s development. However, for the increasing world population and each nation’s pursuing industrialization, the fossil fuels that every nation has relied on are under the crisis of shortage. What even worse is that the greenhouse gas emitted from the combustion of these fossil fuels, which occupies the 75% of the emissions of all the energy systems, has caused the climate change and various disasters in the world.

Professor Yen-zen Wang of YunTech Department of Chemical and Materials Engineering established an Advanced Materials Laboratory and over the past years has been devoted to the research of fuel cell, an alternative source of energy. The development and results of the research have attracted the attention of various enterprises and triggered the possibility of prospective academic-industrial cooperation. The focus of Professor Wang’s research can be divided into two parts. The first part is sulfonated polyimide proton exchange membrane for fuel cell applications. This series developed semi-interpenetrating polymer network (semi-IPN) sulfonated polyimide, network sulfonated polyimide and multilayer sulfonated polyimide (SPI) composite membrane for proton exchange membranes



Professor Yen-zen Wang with Proton Exchange Membrane Fuel Cell Module

for fuel cell (PEMFCs). The above development was completed with the main purpose of lowering production costs and the market penetration of fuel materials. The second part of the research is fuel cell assembly. The laboratory developed a bonding layer that can successfully enhance the connection of each component when a fuel cell is assembled so as to promote the efficiency of the fuel cell.

As efficient as the Nafion (DuPont), the cost of the membrane developed by Professor Wang's laboratory is even lower. It is strongly believed that if there is a possibility of producing this developed membrane in the future, it will occupy an important place in the market.

Tissue Engineering and Drug Delivery Research–Heal A Broken Heart

Heart disease or cardiopathy has become one of the leading causes of death in Taiwan. The myocardial infarction, a typical heart disease, is a critical killer who can take away young people's lives in a very short time. With the support of the National Science Council in the past few years, the Tissue Engineering and Drug Delivery Research Laboratory established by Professor Tze-wen Chung has cooperated with the professional group led by Dr. Shoei-shen Wang, professor in the College of Medicine of National Taiwan University, and focused research on thrombus dissolution and the regeneration of heart muscle cells for the treatment of myocardial infarction. They have made great progress in the research and published several papers in Biomaterials, the best journal in the realm of biomedical materials.

The laboratory of YunTech Department of Chemical and Materials Engineering has been devoted to the research on biomedical materials and the outcomes acquired are undoubtedly at the top in comparison with the research of the same field conducted by other technological universities. Those outcomes can be divided into two main categories: (1) targeted thrombus dissolution nanoparticle which is developed by the combination of nanotechnology and biochemical technology and able to shorten the time to smoothen blood flow so as to reduce the occurrence level of the irreversible death of heart muscle; (2) repair tape which is made of natural silk and can regenerate the "injured" heart muscle along with stem cell treatment and the treatment of differentiated cardiac muscles (which is called myocardial regeneration in regenerative medicine).

If one day those outcomes can be successfully applied to the heart-disease patients, they would feel less regretful in their lives. In respect of the application of repair tape to the treatment of cardiac muscles, it is approved through rat experiments that stem cells/ biomedical materials can regenerate already injured heart muscles. It is believed that in a near future, a further outcome will be developed and become beneficial to every person in need.

Laboratory for Stem Cells Research

Mix Idea, Mix Future–Graduation Exhibition of College of Design

Jointly held by the four departments of YunTech College of Design, creative design, digital media design, visual communication design and industrial design, the 2010 Graduation Exhibition "Mix Idea, Mix Future" took place from April 23 to 29, 2010 at the YunTech library and the Art Center. From May 6 to 16 in the same year the Department of Architecture and Interior Design conducted its graduation exhibition at the corridor of the YunTech auditorium.

Inspired by the concept of "DESIGN FREAK ³ - Turning

the “DESIGN FREAK ³” in order to start a new cultural renaissance”, the first exhibition of Department of Creative Design was conducted under three main topics, “Hybrid Culture’s Feedback (social issue), “Birthmark (original design)”and “HO-LE Culture Creative Complex (community activity)”. By following the path of these three ideas, a series of works were creatively designed in several fields, those including graphic design, packaging, products, handiwork, space design and web animation.

The third graduation design exhibition of Department of Digital Media Design presented works of various categories, including animation, film, multimedia, interaction and games, and chose “i-Design” as its slogan to shorten the distance between designers and customers. The “i” itself represented the characteristics of digital media, such as information, internet and interact.

The design exhibition of Department of Visual Communication Design, “Everyone, Designer” transmitted an uncommon image of designer and gave an impression that each fetus, the most original source of life, can grow and become a perseverant and shining designer who designs his/her own life, contributes to society and family and heads firmly to his/her own dream. Such a design idea was presented in several ways, such as graphic design, creative products, films and animation.

Work presented by Department of Industrial Design - igrow

Expected to look as a birthday party, the exhibition of Department of Industrial Design “TURNING 23” recorded the first exhibition of its graduating students at the age of 23 and became a forever memory for them. The exhibition was divided into four categories, transportation, furniture & decoration, supplies and social welfare. Those not only fit in with people’s living and social tendency, but revealed unprecedented concepts as well.

Work presented by Department of Industrial Design – Daydreamer

Department of Industrial Design–The Cradle of Designers

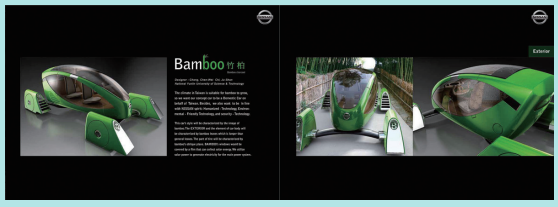
The Young Designers’ Exhibition was held on May 21, 2010 at the Taipei World Trade Center and various outstanding graduation works were presented and highlighted at the exhibition. Among the students whose works were exhibited, student Chen-wei Chang of YunTech Department of Industrial Design was one of the participants whose competency had been recognized before the exhibition. He was asked by two electric vehicle companies in Europe for his participation as part of their research and development groups. Student Chang was academically recognized by gaining various national design awards, one of which was the copper award of 2008 Nissan Design Competition in his second year at YunTech. This award-winning glory was also a turning point for his design career. Under the instructions of Professor Peng-jen Chen, he, as a sophomore, defeated more than four hundred groups of

students around Taiwan with the work that was chosen as the top 10 best works. When he won the copper award at the finals, he became the youngest student in YunTech Department of Industrial Design to be crowned with awards at the Nissan Design Competition.

After the award-winning performance at the Nissan Design Competition, the more confident Chen-wei Chang continued to win various creative awards at the Creative Bag Design Competition and the sixth as well as the seventh Creative Design Competition of Y.S. Education Foundation. In the third year, he applied the image of griffin and developed a car that is different from ordinary cars and characterized by an innovative shape. He presented this outstanding design through animation and received great praise from the three course teachers. He posted it to the CAR DESIGN NEWS, a professional design website, and continually received enthusiastic responses from the electric vehicle companies in France and the Republic of Serbia, discussing the possibility of further cooperation.

At the Young Designers' Exhibition from May 21 to 24, 2010, Chen-wei Chang presented a foldaway bicycle that was completed under the cooperation with his classmate Chia-chi Chang. As an ordinary senior high school student, he chose a technological university for his bachelor study and was assigned to be the teaching assistant for the design presentation course just because of his enthusiasm for drawing. It is expected that with perseverance and persistence he can one day become a shining design star.

Griffin designed by Chen-wei Chang



Bamboo Car designed by Chen-wei Chang

Publisher: Yeong-Bin Yang
Publication Office: National Yunlin University of Science and Technology
Chief of Newsletter of NYUST Editing Committee: Chu-Chin Hsieh
Chief Editor: Shinn-Hwa Chen
Executive Editor: Yi-Lan Dong
Translator: Yi-Ching Chou
Cover Design: Sheng-Hsiung Hsu
Tel: +886-5-534-2601
Fax: +886-5-532-1719
Address: 123 University Road Section 3, Douliou, Yunlin, Taiwan 64002, R.O.C.
http://www.yuntech.edu.tw
E-mail: aax@yuntech.edu.tw