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NATIONAL TSING HUA UNIVERSITY

CONTENTS

a Club One Hundred with NTHU faculty members.

UNITY IS STRENGTH: THE ALUMNI GYMNASIUM IS OFFICIALLY OPENED

With the support of over 100 alumni in Taiwan and abroad, the NTHU Alumni Gymnasium is officially opened on November 15th in the presence of approximately 50 alumni from "Club One Hundred" at the grand opening. Ms. Chi Cheng, the Chairman of Hope Foundation, as well as one of NTHU's honorary doctorate recipients also attended the ceremony and expressed her admiration for the University's emphasis on physical education. During the opening ceremony, President Lih J. Chen presented an Exceptional Contribution Award to Mr. Ming-De Hsu, the Director of the Division of University Development and a NTHU alumnus, for his contributions to his alma mater. President Chen expressed his gratitude and stated that with the opening of this new gym and the devoted cooperation from alumni world-wide, NTHU will not only have a first rate facility but also a solid foundation to build her bright future. Following the tradition established by President Mei Yi-chi, Tsing Hua not only puts a great effort in the area of science and arts education but also physical education. Moreover, since the re-establishment in 1956, NTHU has carried on the tradition of emphasizing the importance of sports activity and the maintenance of one's physical fitness. Consequently, NTHU stands out among 165 Taiwanese universities and won the 2012 Outstanding Sports Performance Award, which was presented by the Ministry of Education and is proudly displayed in the Alumni Gymnasium.

President Chen stated that the Alumni Gymnasium is the first gymnasium entirely supported by the donations from alumni since the establishment of Tsing Hua more than 100 years ago. He thanked the members of Club One Hundred for raising more funds than needed --- beyond original target of NT$100 millions to a grand total of NT$172 millions!

The Chairman of the Alumni Association, Mr. Tzu-Chang Tseng who is also the Chairman of Unimicron Technology Corp, stated that the alumni would give their full support whenever NTHU is in need, and shared the stories of many alumni from all over the world who enthusiastically joined Club One Hundred when President Chen called for it; and how he surprised his colleagues with his fitness as he often works long hours and stays overnights in his company. "Engaging in sports is a habit which has kept me healthy and fit. I have developed my love for sport during the time I studied at NTHU" he stated firmly.

Mr. Ming-De Hsu is actively involved in the Club One Hundred since its establishment in February 2010, he indicated that despite of the lack of staff support, the Office of University Development managed to raise over

NT$100 millions for the university by applying successful strategies and providing value-added rewards to the donors. "Many institutions in Taiwan have attempted to imitate NTHU's concept of Club One Hundred, but none has done as well," he said proudly.

The Alumni Gymnasium is a three-story steel-reinforced-concrete and ecologically green building, certified as a Gold Class Green Building by the Ministry of the Interior. It is located behind the baseball field with an area of 2,050.98m^2 and floor area of 2,834m^2, and is equipped with energy-saving ventilation, lightening and shading. The entire building is also made of recycled and environmental friendly materials and seismic steel, with solar panels on the rooftop to be installed in the near future.

b The Director of University Development, Mr. Ming-De Hsu, receiving the Exceptional Contributions Award.

c Mr. Tzu-Chang Tseng, the Chairman of NTHU Alumni Association and Unimicron Technology Corp, stating his love and full support to his alma mater.

d President Lih J. Chen thanking the alumni.

e Ms. Chi Cheng expressing her admiration and respect for NTHU's emphasis on sports.

f Members of Club One Hundred unveiled the monument.

g President Chen and Chairman Tseng at the opening game.

THREE NTHU PROFESSORS WON NATIONAL PROFESSORSHIP AND ACADEMIC AWARD

Recently, The Ministry of Education announced the recipients of the 16th National Professorship and the 56th National Academic Award. For their exceptional achievements, two NTHU professors were awarded with the National Professorship: Prof. Sue-Lein Wang of the Department of Chemistry, and Prof. Bor-Sen Chen of Electrical Engineering. In addition, Prof. Hsing-Wen Sung from the Department of Chemical Engineering also received the 56th National Academic Award.

Prof. Sue-Lein Wang specializes in crystallography and solid-state inorganic structural chemistry with a focus on porous and fluorescent materials. During her 26 years at NTHU, she has established a state-of-the-art laboratory for the synthesis of crystal-form nanoporous materials. Prof. Wang's research team uses the hydrothermal and solvothermal methods in combination with organic structure-directing agents or templates to synthesize metal phosphates featuring extra-large channel structures. This challenges the limits of pores in the framework of zeolite-like phosphate. Her laboratory has made significant findings in the studies of oxidation state, location/environment of the activation center, gas absorption properties, and the magnetism of transition metals in frameworks.

In recent years, Prof. Wang has also achieved innovative breakthroughs in the field of nanoporous materials. To enhance the international reputation of NTHU, she named her discoveries after NTHU. Each NTHU-n has developed into a canonical crystal-form nanoporous system featuring unique and diverse chemical and structural qualities. These systems have been frequently cited in articles published in top journals and have been included in several important works in the field. In addition to the hydrothermal and solvothermal methods, Prof. Wang has developed the Deep Eutectic Solvent (DES) method, which is a green solvent system for synthesizing nanoporous materials. "Under her leadership, the DES system, and the new findings will have a profound influence on future applications," said President Lih J. Chen.

Prof. Wang's achievement is demonstrated in 275 SCI papers she has published and three patents for lanthanum-free fluorescent powder she has won. Moreover, the latter has the potential for inorganic-organic hybrid nanoporous fluorescent materials to become a new generation of fluorescent powder. This significant breakthrough will have a great impact on the future solid-state LED lighting technology.

Prof. Wang expressed her gratitude for the excellent research environment provided by NTHU and research funding from the National Science Council (NSC); she also thanked the Ministry of Education for the National Professorship Award.

Last but not the least, she thanked her research associates and said "my achievement today relied entirely on team effort!"

Prof. Bor-Sen Chen's research expertise is in the field of control and systems, signal processing and communication, and systems biology, as well as in automatic control and signal processing. Prof. Chen has been dedicated to strong control and focused on designing controlling system to accomplish tasks under the conditions of internal perturbations and external disturbances. This design was applied to control the robust cutting forces of lathes and machines tools. In recent years, Prof. Chen has concentrated his research on bioinformatics and systems biology. He applied systems and control theory to genes and protein networks in systems biology and designed robust biochemical circuits under various types of disturbances.

In 2010, his Robust Genetic IC Circuit Design: System Engineering Approach Project was included in the Academic Summit Program of NSC. Prof. Chen's Genetic Circuit Design Lab will play a vital role in future engineering design in synthetic biology and to promote the use of IC in Taiwanese biological circuit design. "Prof. Bor-Sen Chen has made outstanding achievements in various fields," said President Chen, "over the past 30 years, Prof. Chen has published approximately 200 SCI papers that have been cited approximately 4,000 times."

Prof. Chen believes that the excellent research environment at NTHU allows scholars to fully realize their research abilities and creativity. Although he is at the age of retirement, his love for research remains inexhaustible. "NTHU, keeps up with the good work!" said Prof. Chen.

Prof. Hsing-Wen Sung's researches include biomaterials in drug/gene delivery carriers, cardiac tissue engineering, regenerative medicine, medical devices, and medical imaging. In recent years, he has focused on the development of a nanoscale oral-drug-delivery system for the absorption of proteins, polysaccharides, and nucleic acids. If this clinical application is successful, the technology will benefit numerous patients because the current macromolecular drugs can only be administered through injections. This research was published in 2007 in Biomacromolecules, which attracted attention internationally and was reported by the media in the United States, United Kingdom, and Germany.

This oral protein drug delivery system is currently a hot research topic worldwide. Prof. Sung not only has been invited by top academic journals to write review articles but also received 57 patents in the United States, Taiwan, Australia, Canada, and mainland China. Moreover, this technology is transferred from NTHU to the U.S. companies such as: NanoMega Medical Corporation, Novo Nordics (currently the largest insulin pharmaceutical company in the world) and Eli Lilly (a major U.S. pharmaceutical company) for animal testing.

Prof. Sung's research team has also developed the porous myocardial patch, cell-sheet, and cell pellets for tissue regeneration, ventricular function reconstruction and myocardial infarction. This research has obtained five U.S. and two Taiwanese patents, and is currently cooperating with St. Jude Medical,

a major U.S. manufacturer of cardiovascular medical devices for product development. His research laboratory is also integrating conductive polymer materials with previous research findings and tries to achieve a new discovery for cardiac resynchronization and myocardial infarction.

Prof. Hsing-Wen Sung thanked his students for their dedication and creativity, and expressed his gratitude to the cardiac surgery team at the Taichung Veterans General Hospital, the research team at the Medical Imaging Center of the Chang Gung Memorial Hospital at Linkou, and the stem cell research team at the Food Industry Research and Development Institute for their long-term cooperation. "The partnership with these institutes was vital for conducting high-quality research projects," said Prof. Sung. He also thanked his family for their total support that allowing him to focus on academic studies.

ⓐ The 16th National Professorship Award recipient, Prof. Bor-Sen Chen, Department of Electrical Engineering with Mrs. Chen.

ⓑ Prof. Hsing-Wen Sung of the Department of Chemical Engineering, a recipient of the 56th National Academic Award.

ⓒ The 16th National Professorship Award recipient, Prof. Sue-Lein Wang, Department of Chemistry.

Former NTHU President, Dr. Chung Laung Liu, former Beijing Tsing Hua President, Dr. Gu Binglin, President Lih J. Chen of NTHU, Party Secretary of Yunnan Normal University, Dr. Liaoyuan Ye and Vice President of Xiamen University, Dr. Wu Daguan. (From left to right)

IN MEMORY OF PRESIDENT MEI YI-CHI

"To cultivate oneself as a virtuous person; to contribute to the good of the society and to leave a legacy with ones words and writings" are the three paths leading to immortality, according to Chinese sage. Dr. Mei Yi-chi, the late president of NTHU was one of the few gentleman scholars who had beautifully accomplished all these lofty goals in his lifetime. As an educator, he advocated that a university should be an institution concentrates on cultivating talents, nurturing innovativeness, and never lost sight of the important mission of training her students not only as proficient professionals but also roundly educated persons. Mr. Zhong Xiubin, a famous Chinese author, once characterized President Mei as a stellar representative of his generation and considered him as a towering giant in education amongst Confucius, Wang Yang-ming and Zeng Guofan, the three famous educators in Chinese history.

To commemorate the contributions that President Mei Yi-chi had made, NTHU held a commemoration seminar on October 26th and 27th to mark the 50th anniversary of President Mei's passing. Distinguished guests invited include Academia Sinica Academician, Dr. Lee C. Teng; former President of Beijing Tsing Hua, Dr. Gu Binglin; Party Secretary of Yunnan Normal University, Dr. Liaoyuan Ye; former President of NTHU, Dr. Chung Laung Liu; Vice President of Xiamen University, Dr. Wu Daguang and renowned Chinese author, Mr. Zhong Xiubin as well as NTHU Writer-in-Residence, Mr. Yue Nan. The seminar covered various subjects that President Mei Yi-chi advocated as ideal facets of a sound education program.

President Lih J. Chen stressed that "President Mei is the eternal president of the two Tsing Hua across the Strait." He pointed out that this seminar not only serve to commemorate President Mei, but also echoes his philosophy and core ideas on general education, physical education, globalization, academic freedom and campus democracy, post-secondary education programs as well as humanity education. President Chen further indicated that "President Mei is a legend, he was elected as the Dean of Academic Affairs at age of 37, and became the President of Tsing Hua at age of 42. He passed away at age of 73 in Hsinchu as the acting President of NTHU." Dr. Gu Binglin stressed that President Mei devoted his entire life to Tsing Hua, and shared a story that President Mei had once expressed a lack of interest in teaching to Prof. Zhang Boling, Dr. Mei's mentor; only to have the latter telling him to be patient. When Mei recalled this episode to his wife, Ms. Han Yonghua, he said "interestingly, my patience lasted decades and eventually my whole life."

A Chinese literature master, Mr. Chen Yinke, once said "A legal code will be an ideal code when it can be as concise as Mr. Mei's speeches." President Chen and Dr. Liaoyuan Ye pointed out that President Mei was a gentleman of few words and he was very conservative when it comes to expressing his opinions. However, his conservative nature should not be mistaken for his indecisiveness; rather, it was out of his respect for campus democracy. He often listens to everyone's opinions before reaching a decision, and when the decision was made it was the final one.

Mr. Yue Nan mentioned that the biggest problem an university president could face must be student strikes. Beijing University and Tsing Hua University were most noted as the two campuses where students striked most often during the civil war period. Incredibly, President Mei Yi-chi was able to settle many of such strikes peacefully and once again displayed his wisdom and charisma.

President Lih J. Chen closed the seminar by quoting Dr. Chien Shih-Lian, "Tsing Hua was ever so fortunate to be led by the educator of the century! Under President Mei's leadership, we solidified our foundation and status in the history. During critical times, we should always strive to excel and do our best so that we will not disgrace President Mei's lifelong devotion to Tsing Hua."

ⓐ Dean of the College of Humanities and Social Sciences, Dr. Ying-chun Tsai presenting his paper "Humanities Education and University Spirit."

ⓑ Prof. Kuang-Tai Hsu of NTHU presenting his paper "The Academic Foundation and the Development of University."

ⓒ Photograph of all guests attended the commemoration.

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A CROSS-STRAIT COOPERATION PLATFORM BETWEEN THE TWO TSINGHUA UNIVERSITIES

a President Lih J. Chen of NTHU (left) and President Jining Chen, Tsinghua University (right), holding the cooperative agreement.

b Sharing the same root, the two Tsing Hua are cooperating to create a brighter future for both.

A new platform has been established to foster cooperation between the two Tsinghua Universities on both sides of the Taiwan Strait. Prof. Lih J. Chen, President of National Tsing Hua University (NTHU), and Prof. Jining Chen, the newly appointed President of Tsinghua University in Beijing, signed a cooperative agreement for research programs on NTHU campus on October 8th 2012. Both Tsinghua have committed themselves to long-term cooperation in six areas: humanities and social sciences, management, biotechnology, nanotechnology, energy and environmental technology, basic scientific research, and information and network communication technology.

With this cooperative agreement, both universities will benefit from each other and create a win-win relationship. Funding is also provided by the two universities to promote long-term sustainable collaboration and to enhance cross-strait relationship in academic research. President Lih J. Chen indicated that "the cooperative research between faculty and researchers at both universities will soon yield outstanding results."

President Chen further stated that the two Tsinghua Universities share the same historical roots and have engaged in frequent exchanges. Recent events held at NTHU have demonstrated the profound relationship between the two institutions. These were: "The Legacy of Tsing Hua Grandmasters Forum" which was attended by the descendants of the masters; a press conference of the new book "Father-and-Son Wonders: A Heritage of Tsing Hua," written by the father and son Presidents of NTHU, Professors Hsien-Hsiu Hsu and Hsia-Sheng Hsu; The Commemoration of Governor Wu Kuo-Cheng and General Sun Li-Jen; and the commemoration of the 50th anniversary of the passing of President Mei Yi-chi, which was held at the end of last October. President Lih J. Chen emphasized that "the glorious past and the bright present of both Tsinghua Universities will ensure the achievement of a greater future."

"I really feel at home," said President Jining Chen when he visited NTHU. He has received numerous invitations from universities around the world since taking the position as the President of Tsinghua University on February 20th. However, he stated that "the first university that I visit must be our blood brother and will always be National Tsing Hua University!" President Jining Chen further stated that Beijing Tsinghua's cooperation with NTHU is designed to benefit the faculty and students, and is dedicated to reinforcing the relationship of both NTHU and Beijing Tsinghua.

President Jining Chen also indicated that interdisciplinary education programs offered at both Tsinghua

facilitated students' knowledge acquisition and the cultivation of pluralism. He believes that the effective implementation of IT technology in education can enhance resource sharing and benefit students immensely. President Lih J. Chen added that E-learning has been greatly promoted at NTHU; in 2009, NTHU has established an online program for technology management, in addition, faculty members have developed software programs for online assignments and examinations.

Prof. Shangjr Felix Gwo, Vice President of Research and Development at NTHU, also attended the signing ceremony and stated that since the beginning of research cooperation between the two Tsinghua Universities three years ago, there has been an increase in frequent collaboration between the teaching faculties at both universities. Starting with cooperation in science and engineering, coordination spread to the fields of humanities and social sciences in 2012, and there are a large number of projects in other fields being proposed. Prof. Gwo hopes that the research exchanges can deepen the cooperation to the extent of offering dual degrees and regular exchanges of scholars and faculty, and he expects to see more R&D achievements from both institutions. "The number of joint research projects proposed by faculty members from the two universities was 30 last year. This year, the number has reached approximately 30 more, and it involves faculty in diverse areas," said Prof. Gwo.

c Presidents Lih J. Chen and Jining Chen presenting the wreath at the Dr. Mei Memorial Garden.

d Faculty and students from the two Tsing Hua Universities at the Dr. Mei Memorial Garden.

This year is also the 50th year of the passing of President Mei Yi-chi. Many alumni of the two Tsinghua Universities have attended the ceremony to commemorate President Mei's educational philosophy and spirit. President Jining Chen also visited the Dr. Mei Memorial Garden at NTHU to pay his respect. In addition, he visited various NTHU research centers, including the Nuclear Science and Technology Development Center and the Brain Research Center to have a first-hand experience of these state-of-the-art facilities.

PROFESSOR CI-LING PAN WON THE 19TH TECO AWARD

a Prof. Pan (second from the right) and other recipients of the 19th Teco Award.

Recently, the Teco Technology Foundation awarded the 19th Teco Award of the Electrical Engineering/ Information/Communications Area to NTHU professor, Dr. Ci-Ling Pan, for his vital contributions to the field of terahertz optoelectronics. The award ceremony was held on November 3rd 2012.

Prof. Ci-Ling Pan is renowned internationally as a leading researcher in the field of optoelectronics. As a pioneer in the field of terahertz optics and liquid crystal photonics, Prof. Pan has received numerous significant domestic and international awards in recognition of his achievements in these areas. Prof. Pan is the only Taiwanese Fellow in the Division of Laser Science (DSL) of the American Physical Society (APS). In addition, he is one of the several scholars who have been named both as APS Fellow and Institute of Electrical and Electronics Engineers (IEEE) Fellow. Prof. Pan also holds fellowships in all major international optoelectronics societies, including the Optical Society of America and the International Society for Optics and Photonics.

Over the past ten years, Prof. Pan has focused his research on ultrafast optics and terahertz optoelectronics. Many of his findings have substantial scientific merit and practical applications. Prof. Pan's most prominent contributions included: ion-planted semiconductors for ultrafast optoelectronics and components, terahertz emission and detection technologies and applications. Terahertz waves, or terahertz radiation (1 THz = 10^{12} Hz), refers to electromagnetic radiation with frequencies between approximately 0.1 and 10 THz, which are known as submillimeter waves or infrared light. Terahertz technology can be applied to disease diagnosis, environment monitoring, product quality control, communications, and the exploration of the universe.

The pioneering work of Prof. Pan and his wife, Prof. Ru-Pin Chao, in the field of terahertz liquid crystal optics was particularly valued by the review committee. Liquid crystal has massive and usable electric and magnetic fields, as well as light field-controlled birefringence. Consequently, liquid crystal optoelectronics, such as monitors, have been widely used. In 2002, Prof. Pan's Research team initiated the study of the optoelectronic properties of terahertz wave band liquid crystal and its application prospects. They developed various types of terahertz liquid crystal optical components, such as phase shifter, birefringent filter, polarizer, and phase grating. The liquid crystal terahertz phase shifter is the only device that can operate at room temperature and can achieve a phase shift of 360 degrees. "In the future, this device can be applied to other fields, including submillimeter

phase array radars and astronomical observation," said Prof. Pan.

In addition to his award-winning researches, Prof. Pan has also made major contributions to the education programs at NTHU. For more than 30 years, Prof. Pan has devoted himself to curriculum design and planning at the Institute of Photonics Technologies. President Lih J. Chen praised "Prof. Pan has cultivated numerous talented graduates, as well as postdoctoral researchers, in the area of optoelectronics, all his students are now actively contributing in the industry, academia, and research institutions." Furthermore, Prof. Pan served as a consultant at the Chung-Shan Institute of Science and Technology and the Industrial Technology Research Institute (ITRI). He oversaw joint research projects to facilitate the solution of critical issues related to national defense and industrial technology. His discoveries have resulted in numerous patents and technology transfers to domestic and international companies; 13 patents in Taiwan and 10 patents in the United States.

The Teco Award is a prestigious award presented by the Teco Technology Foundation annually to honor the lifetime achievements of scientists who have made significant contributions to scientific and technological research and the development of Taiwan. Since its establishment 19 years ago, nine NTHU professors have received this honor. They are: Professors Richard Chia-Tung Lee, Ching-Tsai Pan, Lih J. Chen, Yung-Sheng Liu, Show-An Chen, Chang Shih-Lin, Huey-Liang Hwang, Chen-Chi Ma, and Ann-Shyn Chiang.

b Prof. Pan giving his acceptance speech.

c Prof. Ci-Ling Pan and Prof. Ru-Pin Chao.

SIX PROFESSORS WON THE 2012 TA-YOU WU MEMORIAL AWARD

ⓐ Dr. Meng-Lin Li, Associate Professor of the Department of Electrical Engineering.
ⓑ Dr. Chieh-Yu Chang, Assistant Professor of the Department of Mathematics.

The National Science Council (NSC) announced the winners of the 2012 Ta-You Wu Memorial Award. Six NTHU professors received this award for their outstanding performances: Dr. Meng-Lin Li, Associate Professor of the Department of Electrical Engineering, Dr. Chieh-Yu Chang, Assistant Professor of the Department of Mathematics, Dr. Chien-Chung Fu, Associate Professor of the Institute of Nanoengineering and Microsystems, Dr. Chia-Min Yang, Associate Professor of the Department of Chemistry, Dr. Soumya Ray, Assistant Professor of the Institute of Service Science, and Dr. Ta-Jen Yen, Associate Professor of the Department of Materials Science and Engineering.

Prof. Meng-Lin Li is a researcher of biomedical ultrasounds, photoacoustic imaging, and relevant system design. He is dedicated to the development of innovative imaging techniques in biomedicine to enhance the clinical and academic value of ultrasound and photoacoustic imaging. Prof. Li's studies have won numerous thesis contests at domestic biomedical engineering technology seminars, and his relevant research findings have been reported in the *Engineering and Technology Newsletter* of NSC.

Prof. Li's primary research contributions are: a) the development of an imaging technique that enhances the resolution and imaging quality of photoacoustic and ultrasound imaging, b) a functional photoacoustic microscopic imaging system for the brains of small animals (his laboratory was the first research team to conduct systematic studies of transcranial functional photoacoustic imaging on small animals), c) an National Innovation Award winning imaging technique for identifying microcalcification in early breast cancer (clinical application of this technique may enhance diagnosis and biopsies of breast cancer), and d), the image-guided techniques for ultrasound thermal therapy and drug delivery.

Prof. Chieh-Yu Chang's research focuses on numerical theory,


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particularly the transcendence theory in the body of function. In recent years, he has been dedicated to the study of special values of the characteristic "P". He used the definition equations of algebraic groups and geometric phenomena to interpret the algebraic relationships among special values. "The special values of certain characteristic "Ps" are derived from geometric values or the values of important functions. The behaviors of the special values resemble those of the classical characteristic "0". However, the proofs of the interpretations differ significantly," explained Prof. Chang. During his doctoral study under his dissertation adviser, Prof. Jing Yu, Prof. Chang was fascinated by the depth and scope of this domain. In recent years, with support from the National Center for Theoretical Sciences of the NSC, he conducted a joint long-term study with Prof. Papanikolas of Texas A&M University to develop innovative techniques. The results of this study are at the forefront of this field. After four years of hard work, they proved the conjecture of Brownawell-Yu (published in the *Journal of the American Mathematical Society* in 2012)—the algebraic independence of periods and logarithms of Drinfeld modules. This finding effectively promoted Prof. Jing Yu's linear independence theory, and was published in 1997 in the *Annals of Mathematics* of Princeton University. Moreover, this theory is also a functional analogy of Alan Baker's theory, which was awarded the International Medal for an Outstanding Discovery in Mathematics. These achievements are recognized as a new milestone in the development of transcendence theory for the characteristic "P".

Prof. Chien-Chung Fu graduated from the Institute of Microstructure Technology of the Karlsruhe Institute of Technology in Germany, which is the origin of LIGA technology and specializes in LIGA and lithography. In recent years, Prof. Fu's primary research focus has been on lithography with various types of light sources, comprising X-ray lithography, ultraviolet lithography, and laser interference lithography. Moreover, the primary direction of his research development is nano structures and 3D functional microstructures. Using various materials, he is exploring the applications of these techniques in optics and biomedicine. Ultimately, Prof. Fu hopes to provide lithography techniques that can be applied academically and practically.

Prof. Chia-Min Yang studies the design and synthesis of porous materials and their applications in areas such as energy, green chemistry, and nano biomedicine. He has developed several innovative nano porous materials, and used synchrotron radiation X-ray to conduct on-site studies investigating the formation mechanism of porous structures. This enables the regulation of pore structure, pore size, and the morphology of materials.

In addition, Prof. Yang is developing unique selective functional paths that can cause functional groups or objects to graft or be deposited in certain positions in a nano space, and forming multi-functional nano composites. These materials have superior and special qualities and performances when applied in energy and green catalyses, molecular absorption and separation, and nano biomedicine. Prof. Yang's research findings have significantly contributed to fields such as

materials chemistry and nano catalysis biomedicine.

Prof. Soumya Ray is the first foreign faculty at the Institute of Service Science. His research focused on improving the design and management of Internet service. Prof. Ray examines social psychology, technology, and economics to explore behaviors that affect Internet users, as well as the switching costs of online services and information security. He has identified the key issues and developed strategic online service management, which has received a high level of recognition. Furthermore, Prof. Ray's current research centers on social computing involved in online communities, co-creation, and micro-blogging. Prof. Ray thanked the strong support and encouragement from the College of Technology Management, and he enjoyed the congenial academic environment created by the faculty and the students of the Institute of Service Science at NTHU.

Prof. Ta-Jen Yen started to teach at NTHU in 2005 after earning his PhD from the Mechanical and Aerospace Engineering Department at the University of California, Los Angeles. His research specialties and interests are metamaterials, plasmonics, silicon-based nanomaterials, and the interaction between nanomaterial and bio-systems. His academic contributions and breakthroughs in recent years include artificial magnetism, which has rewritten optics textbooks, negative refractive index media, invisibility cloaks, two-handed metamaterials, ultrasensitive and calibration-free bio-sensing and bio-imaging systems, radial nano silicon-based solar cells, and stem cell differentiation induced by silicon nanowires.

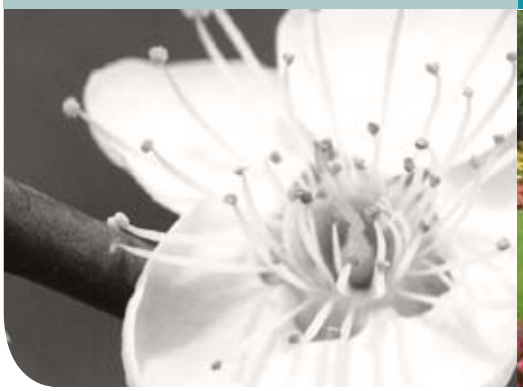
Prof. Yen's studies have been published in top international journals in various fields, including *Science, Advanced Materials, Biomaterials*, *Optics Express*, and *Applied Physics Letters*. Moreover, he has obtained numerous domestic and international patents and technological transfers. Prof. Yen attributes this award to the favorable academic environment at NTHU and the concerted effort of his research team. He is particularly thankful to his colleagues at NTHU and other universities who have provided him with valuable opportunities and learning experiences.

c Dr. Chien-Chung Fu, Associate Professor of the Institute of NanoEngineering and Microsystems.

d Dr. Chia-Min Yang, Associate Professor of the Department of Chemistry.

e Dr. Soumya Ray, Assistant Professor of the Institute of Service Science.

f Dr. Ta-Jen Yen, Associate Professor of the Department of Materials Science and Engineering.



PROFESSORS SHU-CH IN LIU AND YUH-JU SUN RECEIVED THE SUN YAT-SEN MEMORIAL AWARD

ⓐ Prof. Yuh-Ju Sun
ⓑ Prof. Shu-chin Liu
ⓒ Professors Shu-chin Liu and Yuh-Ju Sun with the Board Members of The Sun Yat-Sen Cultural Foundation at the award ceremony.

The Sun Yat-Sen Cultural Foundation (SYCF) recently announced the recipients of the 2012 Sun Yat-Sen Memorial Award for Academic Achievement, both recipients are NTHU professors: Dr. Shu-chin Liu of Institute of Taiwan Literature and Dr. Yuh-Ju Sun of the Department of Life Sciences. Prof. Shu-chin Liu won the Award with her impressive research accomplishments and publications. She indicated that her motivation to write *The Road of Thorns* is to rediscover the activities of Taiwaneses' intellectuals during the colonial period; to expound Taiwanese writers' collective desire for civil liberties and national freedom and cultural development. Prof. Liu demonstrated that Taiwanese students who studied in Japan during the last century were instrumental in bringing modern knowledge back to Taiwan. From the late 19th century to the early 20th century, students from China, South Korea, and Taiwan flocked to Japan to study and such a phenomenon has shaped the cultural and academic landscapes of East Asia. Studying in Japan, however, was a complex process combining a pilgrimage in search of knowledge, cultural learning, reflection and criticism of Japanese colonialism. For Taiwanese intellectuals, it was their goal to raise the educational level of their fellow citizens, and bring back new knowledge to struggle against the colonial system imposed on Taiwan. *The Road of Thorns* is a book based on the second generation of Taiwanese students traveling to Japan during the Showa Era. They arrived in Tokyo in the 1930s and were greatly inspired by the political activism of the Taisho Era. These students returned to Taiwan and started to support a Taiwanese cultural revolution in the 1940s, and the effects of that movement lasted after the end of World War II.

Prof. Shu-chin Liu expressed her gratitude to the judges at the SYCF, and Linking Publishing. She believes that writers who have sacrificed their youth and even their lives to promote Taiwan literature and culture were what touched the judges. She is donating half of her award to the Bliss and Wisdom Cultural Foundation to fund their

project in building the Bliss and Wisdom Religious Seminary, and the other half to the NTHU Fulfillment Scholarship to thank her alma mater and mentors for their guidance and inspiration.

Prof. Yuh-Ju Sun's fields of expertise are in X-ray diffraction, crystallography, structural biology, protein chemistry, and computer simulation. She thanked the Sun Yat-Sen Cultural Foundation for this recognition. Her research project was completed by a team of Taiwanese researchers, mainly composed of faculty and students in the College of Life Sciences at NTHU. The results of their study have been published in the internationally renowned journal *Nature* this year. Prof. Sun stated that this award is a proof of the ability of Taiwan's researchers and will inspire and encourage young researchers.

Prof. Sun expressed her gratitude to Prof. Rong-Long Pan for leading the research team in completing this "mission impossible". She would also like to extend her appreciation to the entire research team, her colleagues at NTHU and NSC for their encouragement and support, as well as to her students' undying passion for research and their persistence. Prof. Sun indicated "this honor given to my team is an honor given to NTHU and Taiwanese researchers." She also expressed her gratitude to her family for their continuous support, especially her husband, Prof. Chwan-Deng Hsiao, for being her best partner and workmate. "I couldn't have done it without his support and understanding."

A NEW MEMBER OF TSING HUA FAMILY: DR. JANE GOODALL RECEIVED NTHU HONORARY DOCTORATE

Dr. Jane Goodall, an internationally renowned primatologist and animal conservationist, has dedicated her life to the study of chimpanzee. Her ground-breaking research findings have changed anthropologists' definition of human as "tool-maker", and enhanced the growth and development of primatology. On November 10th, NTHU held a conferment ceremony at Cheng Kung Lakeside to award an honorary doctorate to Dr. Goodall. The event was attended by a large group of distinguished guests and visitors. President Lih J. Chen stated that Dr. Goodall has established 22 Jane Goodall Institutes around the world to continue the study of chimpanzees in Africa and to promote animal welfare and environmental conservation. For the Roots & Shoots Program, Dr. Goodall has made year-round trips around the globe to cultivate young people's care for the environment, respect for animals, and understandings of diverse cultures. Her contributions to humankind are profound and she is highly respected as a researcher and natural lover. Dr. Goodall's spirit resonates with NTHU's motto: "To Oneself Be True; Give Nature Its Due." President Chen urges that all NTHU persons should take Dr. Goodall as a role model and carry forward her life-long dedication to animal conservation, her educational spirit, love and respect for other. "Dr. Goodall is a living legend," President Chen asserted. Her study of chimpanzees altered humans' perceptions of themselves and redefined "humanity." She is regarded as a model among her peers and is one of the ten most influential women in history. President Chen further indicated "Dr. Goodall has hope for, and faith in humanity. She believes that during our one billion years of evolution, humans are still in the process of acquiring moral character. People can gradually reduce evil and become animals that possess true souls. However, she is concerned with humankind's ongoing collective destruction of nature. Citizens of developed countries take excessive consumption for granted. The exploding global population makes one wonder whether we would have sufficient time to complete our journeys before going extinct."

To begin her acceptance speech, Dr. Goodall greeted the audience by imitating the chimpanzee greeting---"Uh! Uh!" for which she received a thunderous applause. She shared the fact that her love for animals began when she was little, and told the audience that out of curiosity she once hid in a hen house for 5 hours just to watch how hens laid eggs; and when her family found her, they patiently listened to her new discovery. Dr. Goodall said to the audience "as a little girl, I had the spirit of a scientist. I kept raising questions, conducting experiments, and starting over again when failed." She further encouraged the audience by sharing what her mother had told her "if you want to achieve your dream, you must seize every opportunity, work extremely hard, and never give up." With the support from her mother, Dr. Goodall audaciously pursued her dream. Instead of obtaining a college education, she worked hard to save money for a trip to Africa. Later, she met Dr. Leakey, a world renowned anthropologist, and took the opportunity to conduct field research on chimpanzees. By immersing herself into a chimpanzee troop and observing their daily lives, rather than adopting conventional research methods, Dr. Goodall put herself into the wild, recognized each chimpanzee as individual and named each of them, and became a member of the troop. The findings were astonishing! She discovered that chimpanzees can select and make tools for hunting, they gather in groups, and even wage wars. These findings provided novel information for anthropological studies and ethological research. In 1965, Dr. Goodall obtained her Ph.D in ethology from Cambridge University. Dr. Goodall believes that the future lies in the hands of the youth. In her autobiography, *Reason for Hope, A Spiritual Journey*, published in 1999, Dr. Goodall indicated that she has high hope for the future because she believes in human intelligence, the resilience of nature, the passion of the youth, and humanity's persistence.

ⓐ Dr. Jane Goodall with NTHU faculty and staff members.
ⓑ Dr. Goodall believes that the future lies in the hands of the youth.
ⓒ President Chen and NTHU staff members showing support to the Jane Goodall Institute by wearing Roots & Shoots t-shirts.
ⓓ Dr. Jane Goodall, a new NTHU member (center) presenting Mr. H to President Lih J. Chen (left) and Prof. Hsiao-chin Hsieh, Dean of the Commission of General Education (right).
ⓔ Dr. Goodall at the Green Market.

PRESIDENT CHEN CHAIRED THE AEARU 18TH AGM AND 31ST BOD

ⓐ President Chen giving welcome remarks at the reception dinner.
ⓑ President Lih J. Chen with the representatives of AEARU members.

Under the leadership of President Lih J. Chen, four faculty and staff members attended the 18th Annual General Meeting (AGM) and 31st Board of Directors Meeting (BOD) of The Association of East Asian Research Universities (AEARU) on November 1st to 3rd, 2012. These two meetings were held on the campus of Seoul National University (SNU) and were organized by the Office of AEARU Secretariat, which is currently headquarters at NTHU, and the International Office of SNU.

During the first part of BOD meeting, AEARU Secretariat reported on the financial status and the sponsorship program of the Association, and it was followed by a discussion of sponsorship applications received from members.

At the AGM, there was a discussion on the proposed Constitution Amendment and a vote of AGM members was taken. The proposed amendment was approved with majority votes which will allow the organization to accept three new members in the near future.

During the second part of AGM, there were 5 speakers representing their institutions and two additional guest speakers. The first guest presentation was Mr. Phil Baty, the editor of Times Higher Education Ranking, reporting on the methodology of Times' ranking. And the second guest speaker was Prof. Kurt Deketelaere, the Secretary-General of League of European Research Universities (LERU), who was invited by President Chen to attend the AGM and to brief the representative on LERU, its organization and activities.

After the guest presentations, there were five presentations made by AEARU members. First by President Si-Chen Lee of National Taiwan University (NTU), who briefed the AGM on the AEARU Environmental and Energy Workshop that was organized by NTU last March. The second and third presentations were by President Susumu Satomi of Tohoku University and Vice President of the University of Tsukuba, Prof. Yutaka Tsujinaka; they both shared their point of views on the topic of Future Research Topics Suitable for AEARU Universities. Lastly, the Associate Vice President of Korea Advanced Institute of Science and Technology (KAIST), Prof. Chang D. Yoo, reported on the Enhancing Undergraduate Education Program implemented on his campus.

NTHU HONORED WITH THE FIRST THOMSON REUTERS TAIWAN INNOVATION AWARD

ⓐ Prof. Shangjr Felix Gwo at the 2012 Thomson Reuters Taiwan Innovation Award ceremony.

ⓑ Prof. Gwo with other award winners.

The Thomson Reuters Taiwan Innovation Award was presented to NTHU in Taipei recently to recognize her outstanding record of innovative research. Prof. Shangir Felix Gwo, Vice President of Research and Development, represented NTHU to accept this Award and stated that NTHU has been very successful with her strategy to assist faculty and researchers to win patents and create intellectual property (IP) in recent years. Such university-assisted patents, are highly valued by domestic and international industries. He thanked the Thomson Reuters Corporation for presenting NTHU with this award recognizing her outstanding accomplishments and excellent innovations in the development of applied technology. The Thomson Reuters Taiwan Innovation Award was presented for the first time this year by the Thomson Reuters Corporation, which evaluates the standards of candidates' patent quantity, patent approval rate, degree of globalization, and innovative influence.

Significantly, the number of patent applications submitted by NTHU increased dramatically in recent years; 25 in 2009 and 250 in 2011, an increase of ten times within 3 years. Moreover, the number of certified patents was 49 in 2009 and 108 in 2011, an increase of 220%, of which 68% (73/108) were certified internationally. In addition, from January to October, 2012, NTHU has won 84 certified patents in the United States.

Furthermore, according to the Thomson Reuters DII database, the citation percentage of NTHU's patents has reached 49% (370 times/ 753 cases) in last ten years. Calculating based on the 630 full-time faculty members, the average achieved by each faculty member is 1.2 certified patents. This further clearly indicates the university's outstanding capability in innovative research.

In addition to NTHU's influential patents, her contribution in academia-industry cooperation have also been exceptional. Prof. Gwo stated that the university has successfully developed 119 companies, of which 61 were established by faculty members and students, and eight of these are now listed or over-the-counter companies, which is 15% of the total listed or over-the-counter companies developed by domestic institutions. In 2007, the number of licensed IP rights was 25 with a value of NTD$10,231,000; in 2011, these numbers had increased to 88 with the value of NTD$39,012,000, an increase of 281%. Consequently, NTHU has won the National Science Council Excellent Technology Transfer Center Award for the last five consecutive years.

A LEGACY SHOULD NOT BE TURNED INTO ASHES: COMMEMORATION OF A GOVERNOR AND A GENERAL EDUCATED AT TSINGHUA

This year NTHU has organized several commemoration events to mark the 50th anniversary of the passing of President Mei Yi-chi. On September 21, The Commemoration of Governor Wu Kuo-Chen and General Sun Li-Jen; a famous civil official and a gallant military officer nurtured at Tsinghua, was held as part of the commemoration in President Mei's honor. The commemoration attracted many distinguished guests from all over the world; several former subordinates of General Sun from around Taiwan and abroad came to share their memories of General Sun. On this special occasion, Mr. Rong Dooh, the eldest son of General Irving Wu Dooh, who served as the Military Attaché in India, donated important files of the expedition force led by Gernal Sun to NTHU. Mr. Jie Jun, the adopted son of General Sun Li-Jen, donated the *Records of the New 1st Army's Counterattacks in Northern Burma* to NTHU, as well as photos of the early years of General Sun, and the manuscript of his book *Father of Soldiers: A Portrait of General Sun Li-Jen*. Moreover, Taiwan Provincial Governor, Mr. Junq-Tzer Lin, stated that his office has maintained a complete record and related documents of Governor Wu Kuo-Cheng and all former governors, and that they would be happy to share it with NTHU.

President Lih J. Chen stated that last year, during the centennial of NTHU, the university not only reviewed the past, but also reflected on the outstanding alumni who had shaped the social development of Taiwan. "President Mei Yi-chi cultivated numerous talents that made outstanding contributions to the political and economic development of Taiwan, and the two of these celebrated alumni served as the Commander-in-Chief of the Army in the Office of the President and as the Governor of Taiwan during the critical period when the Nationalist Government retreated to Taiwan. Following the national government's relocation in Taiwan in 1949, Taiwanese society experienced chaos and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turbulence. During this period, these two men played vital roles in politics and military, and constructed a strong foundation for the development of Taiwan.

President Chen further quoted Mencius' and emphasized that a historical person should be understood within his historical context, and we should not blame them or exaggerate our compliments based on our present standards. During the chaotic era, the lives of Governor Wu and General Sun altered suddenly at the height of their careers; they were both forced to exit political and military stages respectively. President Chen concluded, "a mill cannot grind with water that has already passed." He proposed that, rather than lamenting over the past, NTHU students should aspire to use words and actions to prevent their legacy from turning into ashes. That is, we should strive to prevent past tragedies from repeating.

According to Dr. Fang-Shang Lu, Curator of Academia Historica, Governor Wu entered politics immediately following his return to China from the United States. He served as the Mayor of Hankou City before the Sino-Japanese War, and as the Mayor of Chongqing during the war time, Deputy Minister of Foreign Affairs, and the Mayor of post-war Shanghai, and maintained an intimate relationship with President and Mrs. Chiang Kai-Shek. In 1949, he was appointed as the Governor of Taiwan. Dr. Lu explained that during Governor Wu's term as the Provincial Governor, he was dedicated to promote local self-governance and tax reform. Governor Wu resigned in 1953 following several fierce confrontations with high-level officials about the arrest of dissident. In May 1953, Governor Wu and his wife exiled to the United States.

According to Mr. Ma Jun, the Director of the Modern History, Shanghai Academy of Social Sciences, Governor Wu Kuo-Cheng was admitted by Tsinghua University at the age of 14 as the youngest among 60 classmates who enrolled at Tsinghua that year. Governor Wu later studied at Princeton University and earned a doctoral degree at the age of 23. Mr. Ma stated "Nankai High School inspired Wu Kuo-Cheng's identification with Western ideas, and Tsinghua University accelerated his understanding of them."

Dr. Jie Jun, a Chemistry Professor at the University of Waterloo, Canada, and the adopted son of General Sun Li-Jen, explained that General Sun had summarized his education at Tsinghua with four words: virtue, intelligence, sport, and teamwork. General Sun's educational philosophy was "abilities are honed through experience; insights are developed in hardship; courage is based on careful planning; and effective strategies rely on information." Dr. Jie further explained that General Sun paid a great deal of attention to education because he considered education is the foundation of national development. He discovered, nurtured and treasured talents for the country and encouraged them to discover other gifted people.

Dr. Hong-Yuan Chu, a researcher at the Institute of Modern History of

ⓐ President Lih J. Chen with Mr. Rong Dooh (left) and Dr. Jie Jun (right).
ⓑ Curator Fang-Shang Lu of Academia Historica.
ⓒ Mr. Ma Jun sharing Governor Wu Kuo-Cheng's understanding of Western ideas.
ⓓ Prof. Hong-Yuan Chu recalling General Sun.
ⓔ Prof. Jie Jun explaining General Sun Li-Jen's value on education.

Academia Sinica, stated that among the numerous White Terror incidents following the 228 Incident, the largest and most comprehensive one was the imprisonment of General Sun and his subordinates. After reviewing relevant investigations, Dr. Chu concluded that General Sun was most unlikely to betray his country as he was accused. "General Sun's spirit will live forever through his descendants, in minds of people on both sides of the Taiwan Strait, and in the history of war," said President Chen.

General Sun Li-Jen graduated from Tsinghua University in 1923, and then he earned another bachelor's degree in civil engineering at Purdue University. However, he was determined to study at a military college and applied to the Virginia Military Institute (VMI), and repeated the junior years. His experience at VMI shaped his fortitude. On August 20, 1955, the Office of the President of R.O.C. issued an order for an investigation and dismissed General Sun from his position of Commander-In-Chief of the Army in the Office of the President. He was charges for participating in his subordinates' attempt to stage a coup d'état, sheltering communist spies, and plotting insubordination. General Sun was given a long-term house arrest and was not released until May 1988. On November 19, 1990, General Sun passed away, and at the funeral, his coffin was covered with the flag of Tsinghua University by Professors Hung Tung, Kan Lee, Chao-Shiuan Liu, and Chang-Hwa Chang. Three of General Sun's children were also alumni of Tsinghua.

f Distinguished guests attending the commemoration.

g Poster of The Commemoration of Governor Wu Kuo-Chen and General Sun Li-Jen.

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