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Previous issues of the Tsinghua Newsletter can be found on the website at http://news.tsinghua.edu.cn/publish/newsen/7160.
PBC School of Finance Established at Tsinghua

The PBC School of Finance, Tsinghua University (SFTU) was established on March 29th, 2012. It was founded jointly by the People’s Bank of China (PBC) and Tsinghua University on the basis of the Graduate School of PBC.

Wu Xiaoling, the former deputy governor of the PBC, will serve as the dean of the school and the chairman of the council. The governor of the PBC Zhou Xiaochuan will be the honorary dean of the School, and Liu Hongru, the first Chairman of the China Securities Regulatory Commission, will be the honorary chairman of the council.

The PBC School of Finance will recruit experienced and senior faculty members and researchers from around the world. It will be committed to building itself into a world-class financial institute, educating professionals for financial sectors and providing policy analysis and counseling services to PBC and other financial and supervision organizations.

Tsinghua University President Chen Jining attended the ceremony and awarded certificates. While delivering a speech at the ceremony, he referred to the Graduate School of PBC as the first higher education institution in China to educate senior experts in finance. Over 30 years, it has become a renowned institution for financial education.

Departments of ME and EE Celebrate their 80th Anniversaries

This year marks the 101st anniversary of Tsinghua University and the 80th anniversaries of its six departments, including the Department of Mechanical Engineering, the Department of Precision Instruments and Mechanology, the Department of Thermal Engineering, the Department of Automotive Engineering, and the Department of Electrical Engineering (DEE). More than 1,000 alumni, faculty members, students, and distinguished guests from all walks of life attended the ceremonies in April.

The event to celebrate the 80th anniversary of the mechanical engineering discipline was held in the New Tsinghua Xuetang on April 28th.

The discipline of mechanical engineering was established in 1932 as a part of the College of Engineering. After a journey spanning eight decades, the School of Mechanical Engineering was established, encompassing the Department of Mechanical Engineering, the Department of Precision Instruments and Mechanology, the Department of Thermal Engineering, the Department of Automotive Engineering, the Department of Industrial Engineering, and the Fundamental
Three Tsinghua Alumni Win Sloan Research Fellowships

Three Tsinghua alumni, who are working at universities in the US, have won 2012 Sloan Research Fellowships. Dr. Chen Xi and Yang Junfeng have both won fellowships in Computer Science while Liu Tong has been awarded a fellowship in Mathematics.

While at Tsinghua Chen Xi gained his B.S. in Physics in 2003 and a Ph.D. in Computer Science in 2007. Yang Junfeng obtained his B.S in Computer Science in 2000 at Tsinghua. They some 1,500 engineers and managers in the electricity generation and electrical manufacturing sector. Among the alumni, there are 36 members of the Chinese Academy of Engineering and the Chinese Academy of Sciences.

The Department has spared no efforts in its research into power systems and its automation, high voltage and insulation technology, electrical machinery and electric equipment, electrical theory and new technologies, and power electronics and power drives. Its faculty has won 33 National S&T Awards and over 160 prizes at the provincial and ministerial level. Between 2007 and 2011 the department had 201 patents granted and published 58 monographs and 2,803 research papers.
An exhibition of ink and color paintings by Yuan Yunfu, a senior professor with Tsinghua’s Academy of Art & Design, opened to the public on May 11th at the Palace Museum in Beijing.

The exhibition, featuring dozens of Yuan Yunfu’s paintings and works in ink, was held at the Shenwumen Tower Gallery in the Palace Museum.

Over 600 people attended the opening ceremony, including Tsinghua University Council Chairman Hu Heping, and Feng Professor Yuan Yunfu

Crimson Lotus Blossoms and Green Leaves

A part of the painting “The Yangtze River”

Yuan Yunfu’s Paintings Exhibited at the Palace Museum

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At the ceremony Yuan Yunfu donated five of his representative works to the Palace Museum, including the Yangtze River, Twin Cypress Trees at the Imperial Palace, Golden Lotus Pond, Himalaya, and Crimson Lotus Blossoms and Green Leaves, which were also displayed at the exhibition.

Having been committed to art for 60 years, Professor Yuan Yunfu is a renowned artist and art educator in China. As a prolific artist, his works have embraced traditional Chinese paintings, oil paintings, watercolors, and illustrations in ink.
Tsinghua Crowned in ISC’12 Student Cluster Competition

A team from Tsinghua University was crowned “Overall Winner” in the ISC’12 Student Cluster Competition held in Hamburg, Germany, from June 17th to 20th. HPC Advisory Council Chairman and the Competition Committee Chairman Gilad Shainer announced the results.

Five teams from Germany, USA and China participated in the competition. This is the first time that Chinese students have won in international supercomputer competitions.

Tsinghua’s team consisted of six fourth-year students. Five of them, Xu Shizhen, Cheng Pengqi, Lv Zihong, Liao Junfeng, and Ren Yiheng are from the Department of Computer Science and Technology, while Yang Yi is from the Institute for Interdisciplinary Information Sciences. Associate Professor Huang Xiaomeng from Tsinghua’s Center for Earth System Science supervised the team.

In the competition, students were required to design and build a small cluster on the ISC exhibit floor and then race to demonstrate the greatest performance across a series of benchmarks and applications. The winning team would be the one scoring the highest aggregate points. Gilad Shainer said in an interview that they were surprised to see such a brilliant team from Tsinghua University and they performed very well.

Irish PM Enda Kenny Delivers A Speech at Tsinghua

Irish Prime Minister Enda Kenny visited Tsinghua and delivered a speech entitled “Ireland and China in a Changing World” in the university’s Main Building on March 28th. Mr. Declan Kelleheer, the Irish Ambassador to China, and Mr. Luo Linquan, the Chinese Ambassador to Ireland, accompanied him on his visit.

During his speech, Mr. Kenny introduced Ireland’s economic and social transformation and achievements. He talked about their experiences in development and the challenges they now face in the current global situation. He noted, “There is an important lesson for the future in our experience: that it is not only the volume but it is also the quality of economic growth that matters.”

Mr. Kenny also emphasized that the Irish government hopes to further develop the mutually beneficial and strategic partnership between Ireland and China. He said, “We will work to broaden cooperation further into science, high technology, food and agriculture as well as trade and investment”.

Tsinghua University has built a good relationship with esteemed Irish universities, including the University of Dublin, Trinity College Dublin, and University College Dublin.
The men’s basketball team from Tsinghua University won the 2012 STAR Beijing Undergraduate Basketball Tournament on April 15 with an eight-game win streak.

Seventy-five teams from about 40 universities and colleges in Beijing took part in the tournament. In the two week event, the men’s basketball team from Tsinghua University competed with teams from eight universities.

Founded in 1950, the team has had numerous remarkable achievements. Tsinghua has taken the crown in the Northeast Division of the Chinese University Basketball Association or CUBA, the most competitive and popular college basketball competition in China.

The annual Graduate Career Fair was held on the Tsinghua campus on March 16th, 2012. Over 300 employers such as large state-owned enterprises, local governments, colleges and universities, and key research units attended the fair and provided more than 6,000 job opportunities for the graduates.

About 6,500 students will graduate from Tsinghua University in 2012. Around 4,000 of them, including 1,000 undergraduates and 3,000 graduates, will become employees.

Since the fall of 2011, the Student Career Center has held 358 recruitment fairs that have attracted over 1,800 exhibitors, with a year-on-year growth of 10%.

Last year, about 80% of the graduates went to work in government institutions and key national enterprises.
A multidisciplinary research team led by Professor Quanshui Zheng at Tsinghua’s Center for Nano and Micro Mechanics (CNMM) has made an important breakthrough in one of the biggest challenges in the world of physics - the search for zero friction. Their experiments demonstrated superlubricity on a micrometer scale under ambient conditions.

For thousands of years scientists have been struggling with the question of minimizing or eliminating friction between solid objects - such as wheel and axle. Statistics show that a large proportion of the world’s energy is consumed to overcome friction in one form or another. Friction and wear is costing developed countries as much as five to seven per cent of their GDPs. Many small devices cannot be miniaturized further because interfacial friction increases considerably as the surface-to-volume ratio increases.

Superlubricity, also called structural lubricity, occurs when there is structural incommensuracy between two crystalline solid surfaces, leading to the systematic cancelling out of the frictional force on the atomic scale. Superlubricity is an ideal solution to reduce friction and wear. During the past twenty years, superlubricity has only been observed on the nanometer scale and under high vacuum conditions.

Professor Zheng’s experimental discovery broke this limitation. His team’s experiments are based on a self-retraction phenomenon that occurs in lithographically manufactured graphite mesas, observed for the first time a few years ago by the same group led by Professor Zheng in collaboration with Professor Zhu Jing and Professor Xue Qikun from Tsinghua University.

They used a microprobe to shear the top of a graphite mesa, leading to a delamination of the graphite mesa. After releasing the shearing force by raising the microprobe, the sheared top flake spontaneously returned back to its original position, driven by the reduction in surface energy that the shearing produced.

CNMM’s team estimated the upper bound of the frictional shear stress to be 0.02-0.04MPa, far below the widely accepted threshold for superlubricity, a frictional shear stress of 0.1-1.0MPa. When deliberately rotating the top flake with a microprobe, researchers found that the self-retraction completely disappeared at certain angles (a so-called lock-in effect, where the atomic lattices match up commensurately at the interface). These lock-in angles exhibit a clear 6-fold symmetry, consistent with the crystal symmetry of HOPG (highly oriented pyrolytic graphite) in the basal plane. Additionally, in the lock-in states, experimentally measured values of the friction shear stress are increased over three orders of magnitude, up to 0.1GPa.

Researchers from the team indicate that these results provide compelling evidence that the self-retracting motion is a direct manifestation of structural lubricity on the micrometer scale. A particularly significant observation for future practical applications is that this structural superlubricity can be achieved under ambient conditions and exhibits excellent reproducibility.

Professor Motohisa Hirano, who originally discovered the phenomenon of superlubricity in the early 1990s, described this discovery as “a big advance” and “It could lead to implementing superlubricity [as a] lubricant for future practical use in mechanical engineering, including [devices for] saving energy.”
Tsinghua Expands Innovative Drug Discovery Collaboration with Bayer HealthCare

Dr. Andreas Busch, a member of the Bayer HealthCare Executive Committee and Bayer's Head of Global Drug Discovery, commented on the collaboration: “The decision to further develop this successful research collaboration underlines Bayer’s commitment to China as an important component of its innovation strategy.”

From this year a Chair Professorship in life sciences supported by Bayer will be established at Tsinghua’s School of Medicine. The honor of the first chair professor will be awarded to Dr. Dong Chen, noted for his remarkable scientific accomplishments and renowned reputation in immunology.

Welcoming the signing of the new agreement, Tsinghua’s Vice-President Professor Yuan Si said: “The Bayer-Tsinghua Joint Research Center for Innovative Drug Discovery has already established itself as an interface to foster communication and collaboration between leading experts from Tsinghua University’s School of Medicine and School of Life Sciences and researchers from Bayer HealthCare.”

New Energy-Efficient LED Lighting for Great Hall of the People

A lighting design by Associate Professor Tang Lintao from Tsinghua’s Academy of Arts and Design won the bid for the Great Auditorium’s Starring Ceiling Renovation Project on April 20th. The starring ceiling of the Great Auditorium is a symbolic image of the Great Hall of the People, which houses the annual National People’s Congress, China’s Parliament, and Chinese People’s Political Consultative Conference.

Professor Tang’s design will use LED (light-emitting diodes) lights to illuminate the ceiling of the 10,000-seater Great Auditorium in a more energy-efficient way.
Inspired by the structure of honeycomb, Professor Tang’s innovative “vertical convection radiating structure” completely solved the problem of the heat island effect, a bottleneck which limits the use of high voltage LED indoor lighting products. The structure takes advantage of natural convection to accelerate heat radiation. Using Professor Tang’s design, the number of chips necessary to provide the same luminous flux would be reduced by 60 percent. With a longer life expectancy and a lighter weight, the design also shortens assembly time and cuts logistics costs. The new design can also combine the LED lamps with the outlets of the fresh air system, using fresh air to facilitate heat radiation.

After the renovation, the electricity consumption of the ceiling will be reduced by 70 to 80 percent. The project is a demonstration of the “Energy-saving and Emission-reduction” policy advocated by the National Development and Reform Commission.

Research Institute in Shenzhen Pioneers Technical Transfer

In the 15 years since its establishment, Tsinghua University’s Research Institute in Shenzhen has successfully built a bridge between research achievements and industry.

Professor Feng Guanping, as first head of the Institute for 15 years, realized his dream of serving society with his knowledge. When he was appointed as the director of Tsinghua’s R & D Office in 1993, he noticed that hundreds of scientific and technology achievements won national awards or were granted patents every year, but few of them went into industrial application. In 1996, Professor Feng volunteered to go to Shenzhen after the Institute was established jointly by Tsinghua and the Shenzhen government. He wanted to make some changes in China’s existing technology transfer scheme.

Professor Feng thought that he and his colleagues could learn from overseas practice and build up an incubator which provides
Twelve Students Win Boeing Scholarships

Twelve Tsinghua students from seven schools and departments, including six undergraduates and six postgraduate students, won this year’s Boeing Scholarship in March. Each of them was awarded 1,500 US dollars.

The Boeing Scholarship, established by the Boeing Company in 2010, aims to encourage well-performing Tsinghua students and promote the links and collaborations between the company and the University.

Each year, the top students from certain departments can apply for it. Their majors cover computer science, materials science & technology, building science & technology, environmental science, engineering physics, industrial engineering, and industrial design. The requirements include ranking among the top 10% in the class or having published a number of scientific papers in the last academic year.

Beside the Boeing Company, many famous multinational companies have set up scholarships with Tsinghua, which include Samsung, China National Petroleum Corporation (CNPC), China Petrochemical Corporation (Sinopec), and Hitachi.

Though Professor Feng’s main task is the industrialization of research achievements, he still spares one third of his time to do research. Until now, the Institute has been awarded four invention prizes and applied for about 200 patents.

Talking about what he is going to do after retirement, Professor Feng said, “I still have two more dreams. One is to incubate two globally advanced high-tech projects with RMB 100 billion in total output value. The other is to launch a charity foundation together with some of my students to help children in impoverished areas with their education.”
Law School Students Offer Legal Counseling for Rural Residents

This April, a group of postgraduate students from Tsinghua’s School of Law went to Sansi Village, Yanqing District in Beijing and offered legal services for rural residents. During their trip, the students made presentations to explain basic knowledge of law and offered legal counseling for local villagers. They also printed brochures on rural legal cases and distributed them to villagers.

To prepare for the service program, the students did field surveys in advance and collected legal issues which local people were most concerned about, including rural homestead proprietary rights, transfer of contracted land use rights, marriage and heritage affairs.

One of the students said, “After days of communication with rural residents, we got a deeper understanding of real conditions in the countryside and knew more about the villagers’ legal demands. We are happy to be helpful.”

This program was funded by the local government to support partnerships between universities and villages and encouraging more college students to participate in basic-level management.

International Cooperation & Exchange

Seminar for Chinese and Brazilian Universities’ Collaboration

A three-day seminar on Enhancing Higher Education Internationalization: Opportunities for China and Brazil, co-hosted by the China Scholarship Council (CSC) and the Brazilian Federal Agency for Support and Evaluation of Graduate Education (GAPES), opened on March 26th at Tsinghua University. Delegates from 43 Chinese universities and 20 Brazilian universities attended the Seminar.

With the aim of promoting cooperation and exchanges in higher education between China and Latin American countries, the Seminar was also held in response to the Plan for Studying in China launched in 2010 by the Chinese government and the Science without Borders Program of the Brazilian government.

During the three-day Seminar, Chinese and Brazilian delegates had in-depth one-to-one talks about cooperation, and the Brazilian delegation visited some Chinese universities.

The Plan for Studying in China aims to develop China into Asia’s most populous destination for international students by 2020 when the number of incoming students to the Chinese mainland is expected to reach 500,000.

The Brazilian government also launched The Science without Borders Program in 2011, aiming to select 100,000 Brazilian students to study abroad between 2011 and 2014 in an effort to promote the internationalization of Brazilian higher education.
Indonesia’s President Susilo Awarded Tsinghua Honorary Doctorate

Indonesia’s President Susilo Bambang Yudhoyono was awarded an Honorary Doctorate by Tsinghua University on the afternoon of March 23rd.

At the ceremony, Tsinghua’s President Chen Jining congratulated President Susilo and extended his best wishes. "With efforts from both sides, exchanges in education and culture between China and Indonesia will result in more flourishing outcomes," said President Chen Jining.

President Susilo then delivered a speech entitled “Indonesia-China Strategic Partnership for Peace and Prosperity in the Asia-Pacific Region”. He briefed the audience on Indonesia’s development and reform over the previous 15 years, as well as the cooperation between China and Indonesia in various fields. He also stressed the importance of peace in the area to the development of countries across the Asia and Pacific region.

President Susilo was elected President of the Republic of Indonesia in 2004 and re-elected in 2009. During his presidency, relations between China and Indonesia have enjoyed a smooth development. In 2005, a China-Indonesia strategic partnership was established which has led to substantial progress in exchanges and cooperation in business, defense, security, culture and other fields.

Second Training Program for Senior US Officials

The second “China-US Government High-Ranking Officials Training Program” organized by Tsinghua’s Center for US-China Relations was held from April 23rd to 28th. Twelve senior administrative officers from the US Department of State, Ministry of National Defense, Department of Homeland Security, and other departments received the training.

The program featured lectures, interactive discussion, and
on-site surveys. Specially tailored courses included China’s grand strategy, China’s political system, international political changes and relations between China and the US. Also included were lectures on China’s military modernization, China’s military and defense policies, China’s foreign policy, China’s economic and trade policies, China’s energy security, and China’s policy-making procedures.

The Program also included a seminar with officials from the Center for China-US Defense Relations at the Academy of Military Science of the People’s Liberation Army. The face-to-face communication enhanced mutual understanding. The on-site observation and introduction also helped the American officials to know more about China and its internal and external policies.

Professor Sun Zhe, Director of Tsinghua’s Center for US-China Relations, is in charge of the training program. He said, “I hope the program will enable these officials to have a better understanding of China and help them in making China-related decisions.” The first training program was held at Tsinghua in 2010.

Tsinghua’s Center for US-China Relations also organizes courses for Chinese senior officers.

### Education Outlook

#### “Chang Jiang Scholars Program” Launches New Scheme

The Chang Jiang Scholarship Program, which was launched 13 years ago by the Ministry of Education, has some new features this year.

According to the Ministry of Education, fifty chair professors will be recruited from prestigious overseas universities each year. Each of them, with a three-year term, will be offered RMB 30,000 per month.

In recruiting distinguished visiting professors, it will mainly select outstanding associate professors from renowned overseas universities and increase the number from 100 to 150 per year. Their employment terms will also be extended to five years with an annual payment of RMB 200,000.

The new program attaches more importance to the development of universities in middle and western areas of China and the development of humanities and social sciences. The increment of distinguished professors will be mainly for such universities and academic areas. The age limit of applicants for distinguished professors in humanities and social sciences will be extended from 50 to 55.

The program, fully supported by central government funds, aims to encourage the universities to attract more leading international experts and strengthen collaborative innovations.
Chinese Universities Launch Engineering Doctoral Programs

Engineering doctoral programs have been officially launched in China this March. This new type of professional degree program is aimed at cultivating future leading specialists in engineering and technology.

At present, 25 higher education institutions, including Tsinghua University and the Graduate University of the Chinese Academy of Sciences, have been authorized to confer such doctoral degrees by the Academic Degree Commission of the State Council.

The programs mainly concentrate on four areas: electronics and information technology, biology and medicine, advanced manufacturing, and energy and environmental protection.

The universities will carry on the programs jointly with enterprises according to their specific needs. Mr. Sun Yegang, Deputy Director of the State Council’s Academic Degree Office, said that enterprises will take part in the whole process of education, including recruiting eligible students, working out educational schedules, building supervisor teams, teaching, practical training, and reviewing doctoral dissertations.

University Libraries Open to the Public

Over 110 libraries in Beijing set up the Capital Library Alliance in March. The Alliance plans to offer ten preferential measures for local citizens, including opening university libraries to the public. Thirty-four universities, including Tsinghua University and Peking University, have joined the Alliance.

The ultimate goal is to open the university libraries to the public free of charge, although specific regulations and standards need to be worked out and thorough preparations made.

There is a huge gap between China and developed countries in library resources. According to the China Statistical Yearbook 2011, by the end of 2010, there were only 2,884 public libraries in China. That is to say, there are 450,000 people to every library on average. In contrast, citizens in western countries enjoy more library resources. For example, there are 13,000 people for every public library in the US, 10,000 people in the UK, 6,600 in Germany, 5,000 in Finland, 4,000 in Norway, and 3,000 in Switzerland.

Mr. Ni Xiaojian, Secretary-General of the Alliance, said that to open university libraries to the public is a global trend. Lots of universities in the US, Europe and Australia have opened their libraries to citizens for free. A number of these university libraries have already been partly opened to citizens. Some university libraries issue them with a temporary reading card. Due to the limited resources, whether citizens from outside the universities can take books home or not still remains a problem.
Students’ Graduation Art Exhibitions held at the Gallery of Academy of Arts and Design

http://www.tsinghua.edu.cn/eng