

### Decade of Achievement: Only the Beginning

It is exciting to know that HKUST's Engineering School has achieved so much in only a decade. As it celebrates its tenth birthday, the School has won international recognition for the high caliber of its faculty and students.

The School has blazed a trail and made its technological mark in the short time since its inception. Our faculty members have won numerous top prestigious international awards. The School set up the first licensed Internet Service Provider "Supernet" and contributed the international multimedia standard "MPEG-4" and many others. It offers superbly-trained graduates who can hit the ground running in both the academic and private sectors.

"In a world in which technologies change overnight, transforming workplaces and often creating whole new industries, the School keeps close links with business and government," says the School's Dean, Prof Kang L Wang.

"We offer courses tailored to meet the needs of the business sector as well as society. This not only enhances our students' practical problem solving ability, but also ensures that we keep our feet on the ground and stay in contact with the real world," says Prof Yeou-Koung Tung, the Associate Dean of the School.

"There is no room for 'ivory tower' attitudes because if you don't keep a close eye on what's happening, you're likely to be overtaken by the real world," he says.

Prof Ting Chuen Pong, the Associate Dean of Engineering, says the School faces innumerable challenges. At the forefront of these are attracting and keeping high-quality faculty and students, while working with the government and the business community to create a strong technology base which is vital to Hong Kong's future development.

"Building on our achievements in the past decade, HKUST's School of Engineering endeavors to embark on new frontiers in the decades to come," says Prof Wang.



The Engineering School's Computer Science students ranked among world's top 1 percent of student programmers for two years running at the ACM International Collegiate Programming Contest in 1995 and 1996.



The first World Wide Web Consortium Office outside the United States, Europe and Japan was inaugurated at HKUST on 13 November 1998.



Prof Roland Chin of Computer Science and Prof Tongxi Yu and Prof Jay Chung Chen of Mechanical Engineering of HKUST were appointed as adjunct professors of Peking University in the Adjunct Professor Mutual Appointment Ceremony in November 1999, under the Academic Alliance formed between the two universities in 1998.



The fast motion estimation algorithm co-developed by Prof Ming L Liou, Prof Oscar Au, and a PhD candidate, Mr Alexis Tourapis, of the Department of Electrical and Electronic Engineering has been recognized as a new standard for MPEG-4, the international standard for multimedia applications.

## Decade of Achievement Only the Beginning

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### HKUST Ranks Top in IEEE Journal Publication Output

In a recent survey of publication output in journals and international conferences sponsored by the Institute of Electrical and Electronics Engineers (IEEE), the most respected and world's largest engineering professional body, HKUST's Department of Electrical and Electronic Engineering ranked No. 1 in the number of papers published in the prestigious *IEEE Transactions on Electron Devices* during 1998-2000.

The department also ranked 8th among top universities worldwide in the number of papers presented in the International Electron Devices Meeting (IEDM), one of the most prestigious international conference in semiconductor and integrated circuit technology, during 1994-2000.

"The result exceeds our expectation. It is very encouraging, especially to a young department like ours," says Prof Philip Chan, Head of the Electrical and Electronic Engineering Department.

"The department has fewer research resources compared with top research universities in the United States, and yet we come out very well against the world's best research universities in these areas," he says. "In ten short years, we have established a strong research base with very high-caliber faculty members, hard-working students and state-of-the-art laboratory equipment," Prof Chan says.

## Message from the Dean



This year, HKUST celebrates its tenth anniversary. In the past ten years, we have come a long way. Both our faculty members and our students have achieved international reputations. As you will see in this first issue of *HKUST Engineering In Focus*, our faculty members have received numerous international accolades for both academic and research excellence. Our students have received awards in international competitions and our graduates are in demand in Hong Kong and abroad. We are proud of the fact that our alumni are recognized for their service and dedication.

This year, we added two interdisciplinary programs to our degree offering. Our bioengineering program is the first in Hong Kong. Bioengineering is one of the most exciting disciplines to emerge in the last decade. Bioengineering offers the potential to cure cancer from genetically engineered drugs as well as the potential to administer effective health care by repairing the body cell by cell. The study of bioengineering makes bio-medical knowledge immediately available to doctors by combining electronics and computer science with bio-medical practice and informatics. Our faculty and students from different disciplines are working together to study this new exciting area.

Likewise, environmental engineering is important to secure a sustainable and safe environment. Our faculty and students in our environmental engineering program are pursuing an interdisciplinary approach to providing innovative solutions to environment problems.

Innovation, creativity and entrepreneurship are the forte of engineering. One of our missions is to help develop a high-tech industry base. That is why we started a new High-Tech Entrepreneur Program (HTEP) aimed to help our students become technology entrepreneurs. The program teaches students how to turn novel ideas into viable businesses. Students will learn in practical workshops both how to initiate a startup and technical know-how.

As Hong Kong becomes a knowledge-based society, we are committed to excellence in engineering education and cutting-edge research to add to the sum of human knowledge. Our future is challenging. With your support, we believe we can meet the challenges that lie ahead.

With warmest regards,

Kang L Wang  
Dean of Engineering

## HKUST Wins CASA/SME Award

HKUST is the 2001 winner of the University LEAD Award presented by the Computer and Automated Systems Association of the Society of Manufacturing Engineers (CASA/SME). The LEAD award honors industry and research groups for Leadership and Excellence in the Application and Development of integrated manufacturing.

"It is difficult to win this prestigious international award. Only one recipient a year worldwide is awarded for its program excellence," says Prof Mitchell Tseng, Director of HKUST Advanced Manufacturing Institute and the founding Head of the Department of Industrial Engineering and Engineering Management.

The LEAD Award Committee was particularly impressed by HKUST's rapid progress in implementing plans for education in production engineering and engineering management.

The award recognized a joint effort from HKUST's Advanced Manufacturing Institute, Departments of Industrial Engineering and Engineering Management, Mechanical Engineering, Electrical and Electronic Engineering, Chemical Engineering and Computer Science.

## Prof Chung-Yee Lee to Lead IEEM Department



Prof Chung-Yee Lee, a renowned researcher in production scheduling and operations management, assumed duty as the Head of the Department of Industrial Engineering and Engineering Management (IEEM) on 20 August 2001. Prof Lee obtained his PhD in Operations Research from Yale University in 1984 and was appointed the Rockwell Professor of Industrial Engineering at Texas A&M University in 1996.

He was the editor of the Institute of Industrial Engineering's (IIE) *Transactions on Scheduling and Logistics*.

## International Honors and Awards

- Prof Kin-Man Lee of the Civil Engineering Department and his research team were presented the Thomas A. Middlebrooks Award for their paper "Effects of placement method on geotechnical behavior of hydraulic fill sands" by the prestigious American Society of Civil Engineers (ASCE). Prof Lee's team is only one of two non-US research groups to have received the award in its 45-year history.
- The paper "Traffic assignment and traffic control in general freeway-arterial corridor systems," (1994) by Prof Hai Yang of the Department of Civil Engineering and his coworkers was the only paper from Asia selected to be one of thirty classic papers published by Elsevier Science's highly cited journals: *Transportation Research (Parts A & B)* in the past 34 years.
- Prof Ming L Liou of the Department of Electrical and Electronic Engineering was awarded the Institute of Electrical and Electronics Engineers (IEEE) Circuits and Systems Society Mac Van Valkenburg Award and the IEEE Third Millennium Medal in 2000.
- Prof Ricky Lee of Mechanical Engineering was selected as the recipient of the 2000 JEP Best Paper Award by the American Society of Mechanical Engineers (ASME) *Transactions: Journal of Electronic Packaging*.
- Prof Tongxi Yu of Mechanical Engineering won a China Higher-Education Science Award (First Class) in May 2001.
- Fellowship: \* Prof Bertram Shi and Prof Kei May Lau of Electrical and Electronic Engineering have been elected Fellows of the prestigious IEEE. \* Prof Tongyi Zhang of the Mechanical Engineering Department has been elected a Fellow of the American Society of Materials (ASM) International.
- Prof Jingshen Wu and Prof Tianshou Zhao of Mechanical Engineering have been awarded "State Key Laboratory Research Fellowships" from the Education Ministry of China for 2001. Prof Wu was also a recipient in 2000.

## Recycling Coal Ash into Environmentally Friendly Building Materials

Prof Zongjin Li, Associate Professor of HKUST's Civil Engineering Department, will employ extrusion technology in the development of novel building materials with pulverized coal ash, an industrial waste produced by electricity-generating plants. He will work with 3E Envirotech Products Co Ltd. to recycle coal ash into high strength bricks, wall panels, light-weight aggregate, high-quality filler materials and masonry blocks with two-way joints.

The joint project involves an investment of HK\$8 million by 3E. Under the agreement, both sides will develop an extruder for the manufacture of coal ash-based wall panels and other building materials. The collaboration will help recycle coal ash, estimated to be in millions of tons each year, greatly minimizing the pollution caused by this industrial by-product. It will also minimize construction waste, save land, energy and production costs.

"Compared with the traditional casting method, extrusion is a flexible technology, showing great improvement in strength, toughness, ductility and durability," says Prof Li, who is also the Director of the Advanced Cement-Based Building Products Cooperative Research Center at HKUST.

"Universities and industry can join hands to translate results of technological research into commercial products in a cost-effective way that ensures the sustainable development of the environment," says Mr Ding Wang, Chairman and Chief Executive Officer of 3E. "The applications of coal ash have not been fully utilized in Hong Kong. Tapping the strengths of Prof Li's extrusion technology, we can develop a whole series of advanced building materials that will benefit the construction industry and the environment eventually," he says.

## Researchers help Youngsters' Pronunciation with Speech Recognition Technology

Hong Kong students have been criticized in recent years for having poor spoken English. To address this criticism, Prof Man Hung Siu of Electrical and Electronic Engineering and Prof Brian Mak of Computer Science joined forces to develop a multimedia software application called "Pronunciation Learning via Automatic SpEech Recognition (PLASER)" to teach English pronunciation and listening skills.

"Most students are shy. They do not get enough practice in the classroom," said Prof Siu.

"School teachers don't have enough time to monitor each individual's learning progress," added Prof Mak.

Unlike many rival language products, PLASER can determine if a student says an English word correctly and can track individual students' progress.

PLASER, which targets Form 1 and Form 2 secondary school students, is a two-year project funded by the government's Quality Education Fund with the participation of seven secondary schools.



(From left) Prof Kang L Wang, HKUST's Dean of Engineering; Prof Tony Eastham, HKUST's Acting Vice-President for Research and Development; Mr Ding Wang, Chief Executive Officer of 3E; and Mr Donald Chau, Chief Financial Officer of 3E at the signing ceremony on 2 June 2001 on the HKUST campus.



Prof Zongjin Li (far left) showing the extrusion process to Mr Ken Richardson, Senior Manager of Redland Precast Concrete Products Ltd. (second from right), one of the industry partners of the Advanced Cement-Based Building Products Cooperative Research Center.

## A Brighter Future for the Local Optoelectronics Industry

Researchers at HKUST are developing new technologies for the manufacture of high-brightness inorganic blue/green light-emitting diodes (LEDs) to help the local optoelectronics industry sharpen its edge in a fast-growing world market.

"Currently local LED companies have to rely on overseas suppliers for processed LED chips as Hong Kong lacks both the technology and infrastructure to develop its own inorganic LEDs," says project coordinator Prof Kei May Lau of the Electrical and Electronic Engineering Department, an expert in compound semiconductor materials and devices.

This three-year project, awarded HK\$15 million by the Government's Innovation and Technology Fund, is designed to help local companies develop new products, nurture local talents and, ultimately, spawn new investment in the LED chip fabrication market. HKUST researchers will collaborate with international and local LED companies to develop technologies for prototype production of gallium nitride and related inorganic LED structures that emit in blue/green spectral regimes. These LEDs are made with compound semiconductors, materials with relatively high complexity that have found increasing use in photonic and high frequency device applications. As these advanced LEDs are very difficult to fabricate, they are always in high demand.

"Through the project, we will design, fabricate and test prototype LEDs before transferring the technology to industry. Local companies can in turn design their own devices for specific applications in terms of color, brightness and efficiency, to be integrated with their systems. All in all, they can produce LED products with unique features, lower cost and greater flexibility," Prof Lau says.

"Moreover, Hong Kong will also benefit from a pool of locally trained experts specializing in LED device design and processing," she adds.

## Pearl River Estuary and Coastal Water Monitoring System

Prof Jay Chung Chen of the Department of Mechanical Engineering and his team completed a Chinese government sponsored project, "Pearl River Estuary and Coastal Water Monitoring System" in the first quarter of 2001. Prof Chen was honored with the prestigious title "先進個人稱號" by the Chinese Ministry of Science and Technology.

This was a two-year multi-million dollar project in which a shore-based monitoring system, satellite remote sensing systems, coastal radar systems, shipboard sensor systems and mathematical models are integrated for the purpose of environmental monitoring and predictions.

Prof Chen also participates in a HK\$18 million Pearl River Estuary Pollution Project (PREPP), which is now in its final stage of completion. The grant was awarded by the Hong Kong Jockey Club under the Chief Executive's Community Project.

The R&D work includes coastal and oceanographic investigation of various parameters affecting the Pearl River estuary and its coastal water environment, scientific data analysis, and establishment of a network of shore-based and shipborne monitoring systems.

## New Product Analysis Center to Upgrade the Local Semiconductor Industry

The Semiconductor Product Analysis and Design Enhancement (SPADE) Center at HKUST has recently been established to enhance the competitiveness of the local semiconductor industry in an increasingly lucrative world market.

Support of HK\$14.9 million was awarded by the Innovation and Technology Fund (ITF) for the Center's initial three years of operation. To complement the ITF support, more than 20 local semiconductor companies have lent their support to the Center with a sponsorship of HK\$2,400,000.

Positioned at the forefront of semiconductor research, HKUST is the only university in Hong Kong equipped with a complete microelectronic fabrication line and with the know-how to provide support for the local semiconductor industry.

Currently, small- and medium-sized enterprises (SMEs) in the semiconductor industry go to Taiwan or Singapore for product analysis, design enhancement and failure analysis services because they do not have a critical mass of expertise themselves. As a result, they cannot produce high value-added semiconductor products or improve their product development.

The SPADE Center, to open by the fourth quarter of this year, will be equipped with state-of-the-art facilities to conduct product analysis, design enhancement and failure analysis. The Center will attract international semiconductor companies to set up their design houses in Hong Kong and more importantly, will entice local experts to stay in Hong Kong.

Prof Johnny Sin, Project Coordinator and Professor of HKUST's Department of Electrical and Electronic Engineering, estimates that the establishment of the SPADE Center alone will help boost Hong Kong's share in the world market by 30%, amounting to HK\$17.85 billion (US\$2.3 billion). In 2000, the total market value for the worldwide semiconductor industry was estimated to be at US\$195 billion, with the Asia Pacific region accounting for about US\$44 billion, 4% of which is attributed to Hong Kong.



The availability of product analysis services at HKUST is one of the decisive factors for ON Semiconductor to establish its regional head office, including a design center, in Hong Kong. "We believe the establishment of SPADE is meaningful as it will provide a basic semiconductor product analysis laboratory infrastructure in Hong Kong, which can help ON Semiconductor to conduct its product analysis at lower cost and in faster cycle time," said Mr Henry Leung, President of Asia Pacific, ON Semiconductor, a global broadband and power management chips supplier and the largest sponsor of SPADE.

"The Center could help lower our manufacturing cost, increase our competitiveness as well as provide training for our staff," said Mr Johnny K H Tsui, Managing Director of ASTEC Custom Power (HK) Ltd, another sponsor of SPADE.

## Air Pollution Forecast by HKUST

The daily Air Pollution Index (API) forecast presently provided by the Hong Kong Environmental Protection Department to the media is the product of research work led by Prof See Chun Kot, Senior Lecturer of Mechanical Engineering, and the Center for Coastal and Atmospheric Research. The accuracy of the forecast is better than 85%.

### Engineering Students Shine at **Chip Olympics** Again

Two Engineering PhD students have developed novel techniques in the design and fabrication of integrated circuits (ICs) that could result in cheaper, smaller and more durable wireless devices such as mobile phones, MD players and pagers.

Vincent Cheung and Zhaofeng Zhang, both PhD candidates in the Department of Electrical and Electronic Engineering, presented their papers at the prestigious IEEE International Solid-State Circuits Conference 2001 (ISSCC)—or the "Chip Olympics"—in San Francisco from 4 to 8 February 2001.

To date, HKUST is the only university from Hong Kong and the Chinese Mainland to have its research papers accepted and presented at the world's top solid-state circuits conference.

This is the fourth time, and the third year running, Hong Kong students have been invited to present their research at the Chip Olympics alongside top industry and academic researchers. Intel, Sony, IBM, Lucent, NEC, Motorola, Hewlett Packard, Bell, MIT and Stanford are just a few of the companies and universities that also presented their latest research findings this year.

The microchip that Vincent has created will significantly reduce the size, weight and the power consumption of portable electronic devices including mobile phones, laptops, and CD and MD players. "At present, most analog ICs still need a supply voltage of at least 2.5V to achieve acceptable performance. Our novel technique enables the IC to perform at least ten times faster than existing designs," explains Vincent.

Zhaofeng has developed the world's first CMOS fully integrated single-chip pager receiver, while overcoming the problems of direct current offset and flicker noise commonly faced by direct conversion receivers. "This breakthrough allows us to implement small-size, low-cost ICs with the same capabilities as more complicated and expensive ICs," explains Zhaofeng.



From left: Vincent, Prof Howard Luong and Zhaofeng attended the Chip Olympics.

### Exploring Computer Animation at NYU

Gary Tam Kwok Leung, a final-year Computer Science student, took off for a three-week, full-time summer course titled "Computer Animation and Visual Effects" at New York University (NYU) from 6 to 24 August 2001.



Gary (third from left), with the other seven Hong Kong students and the NYU instructor and teaching assistant.

Offered by NYU's Center for Advanced Digital Applications (CADA), the course is regarded as one of the 15 best animation courses in United States by *Animation Magazine*. All of its instructors are working professionals in the industry who bring to the classroom a modern aesthetic sensibility and wealth of practical digital production experience.

Students are led into the fascinating world of real-life production, starting from the creation of 3D elements and ending with the manipulation of images using compositing tools.

"This was a fruitful journey. I learned not only novel computer animation techniques, but also about the American culture in great depth," says Gary.

The overseas summer study program was organized by the Hong Kong Productivity Council and funded by the Film Development Fund. A total of eight Hong Kong students from different tertiary institutions were selected to join the program.

### Triumphs in **International Student Paper Awards**

- The paper "An Analysis on the Refrigeration Mechanism of a Compressible Flow Oscillating in a Tube" by Guoqiang Lu (a PhD candidate in Mechanical Engineering) co-authored with Prof Ping Cheng of the department, was honored as one of the two Meritorious Student Papers for presentation at the 2001 Cryogenic Engineering/International Cryogenic Materials Conference held in July 2001.
- Lam Suk Han and Alton Chan Kam Fai, final-year students of Electrical and Electronic Engineering, won the first and third prizes in the IEEE 2001 Undergraduate Region 10 (Asia Pacific)

Student Paper Contest for their projects "Demosaic: Color Filter Array Interpolation for Digital Cameras" and "Multi Resolution Mesh Representation Using Vertex Cluster Contraction", respectively.

- Linda Lok-wan Chow, a Mechanical Engineering MPhil student, was awarded the Best Student Paper in the International Symposium on Electronic Materials and Packaging (EMAP 2000) conference for her paper "Moisture Sensor using Reactive Sputtered TiO<sub>2</sub> film with Negative Substrate Bias", co-authored with Prof Matthew Yuen of the department.

## International Exchange:

### Much More Than Fun Times in a Foreign Country

Sally Ng Nga Lee, a final-year undergraduate student in Chemical and Environmental Engineering, has returned from the University of Minnesota where she went on exchange during her second year of study in 2000-01.

Why study overseas? Sally says there are several reasons.

"To understand more about the world and to meet people with different cultural backgrounds," she says. "It was a great experience to study at the University of Minnesota where the Department of Chemical Engineering and Materials Science has an excellent reputation."

Studying with students from all over the world was an eye-opener, Sally says. The students in the United States are more active in lectures than their counterparts in Hong Kong, she says. The students emphasize understanding the problems over knowing the final answers. If they don't understand, they ask questions.

Sally treasures the close friendships she formed with her Japanese roommate and her fellow classmates in Minnesota. "We spent a very special year of our lives together," Sally says. She will never forget how her classmates helped her during her toughest time in Minnesota when she took a few advanced courses without having an adequate background.

"I see a bigger world than before and I have become more independent and mature since the exchange," Sally says.

Sally found her experience overseas invaluable and exciting and strongly recommends other HKUST students join the program to broaden their horizons.

"I had a fruitful and fun year in Minnesota and I would say it's worth all the trouble," she says.

Sally thanks the Hong Kong Jockey Club for a generous scholarship that she has received since 1999. "The scholarship relieves the financial burden of my education on my family. I may not have been able to participate in this meaningful exchange program without the scholarship," she remarks.

The School of Engineering has established its student exchange program with over 30 institutions around the world, including the United States, Canada, Australia, Europe, Japan and Singapore.



*A fun day in the State Fair.*



*Sally (far right) having a dinner with other exchange students from Europe and Asia.*

## DHL Scholarship

### Supports Logistics Education at HKUST

Thanks to a generous donation from DHL Hong Kong, the "DHL Logistics Scholarship" has been established to recognize the best first-year undergraduate of HKUST's Industrial Engineering and Engineering Management (Transportation Logistics Management) program in 2001.

DHL Worldwide Express is dedicated to support the express distribution industry, which facilitates international trade. The company shows strong support for education programs in logistics and supply chain management.

HKUST's Department of Industrial Engineering and Engineering Management is the first department in Hong Kong to offer undergraduate degrees in transportation logistics management.

## Donation Fosters Expertise Training for Technology Advancement

"Hong Kong is now transforming itself into a knowledge-based and technology-led society. I certainly hope to contribute to and play a part in this exciting economic transformation," said Mike Cheuk-wai Chow (1996 MPhil graduate in Electrical and Electronic Engineering) who was among the first batch of awardees of the Jardine Matheson Scholarship.

"I am glad that I made the choice of studying at HKUST. It has excellent teachers and state-of-the-art research facilities. The knowledge I gained and the technologies I was exposed to at the University are at the cutting-edge of the semiconductor industry," said Mike who joined Motorola Semiconductor HK Ltd. after graduation.

"The benefit of science and technology to society is great, but the cost is high. I have had the privilege to learn from the very best, thanks to the generous support of donors. I hope that they will continue to share HKUST's vision and give full support to all its endeavors."



*Mike Chow, 1996 MPhil graduate in Electrical and Electronic Engineering.*

## New Academic Programs

### Nurturing the Entrepreneurial Spirit in Young Engineers

From September 2001, undergraduates in engineering can have a taste of what it's like to take an engineering concept from the drawing board all the way to the marketplace.

"One of our goals is to create a closely-knit high-tech entrepreneurial community in and around the HKUST campus," said program director Prof Phil Choong. "Students will be exposed to new technologies, will learn how to work closely with others, and will hone their management and communication skills - all of which are vital to their career development," added Prof Choong.

The exciting and experimental High-Tech Entrepreneur Program (HTEP) targets senior students who wish to tackle a new enterprise project as an option for the traditional final-year project. Students will propose, design, and develop product and system design ideas, as well as gain experience in applying for patents and marketing a product, under the guidance of industry consultants and university professors.

The program also comprises workshops and seminars to train young engineering students in areas like market evaluation and business plan formulation.

### School Pushes Bioengineering Envelope

Not content to sit on its laurels, HKUST Engineering School is broadening its technological research this year, offering two interdisciplinary postgraduate programs in bioengineering and environmental engineering.

Bioengineering is the bridge between the basic life sciences and engineering, with its foundation in all of the engineering sciences as well as the biological, medical, behavioral and health sciences.

"The bioengineering field holds huge potential for arming us in our battle against disease and extending life. Just ten years ago, we could not have envisaged being able to do this sort of work. Recent advances in many fundamental and applied biosciences make the future full of potential. HKUST must participate in this revolutionary field," said Prof John Barford, Associate Professor of Chemical Engineering, who has coordinated the formulation of the Bioengineering Program.

Speaking of the environmental engineering program, Prof Po Lock Yue, Head of the Department of Chemical Engineering and Director of the Environmental Engineering Program, said, "the Engineering School takes environmental issues seriously. We are actively expanding the Environmental Engineering Program to cover MPhil and PhD studies in addition to the existing MSc offered in this important discipline."

## Continuing and Professional Education

### Prime Technology Programs for Engineering Professionals

As the world enters the new knowledge-based millennium, HKUST's School of Engineering is doing its part to keep the community informed. Its Continuing and Professional Education Programs (CPEP) are designed to share advanced technological and management expertise with the community.

CPEP courses include 2 to 5-day short programs, an 18-month Master of Technology Management (MTM) program, a one-year Graduate Diploma in Computer Forensics program and a one-year Executive Diploma in Transportation Logistics Management program. Most classes are held on weekends.

"We have also tailored programs for local industry and government officials," said Mr Tin-yu Wang, the Associate Director of Continuing Education and External Development, for the School.

CPEP's technological "footprint" spans information technology (IT), microelectronics and electronic systems, transportation and logistics, geotechnical and structural engineering, construction project management, environmental engineering, building services, manufacturing technology, and material engineering, etc.

"Our first MTM in IT was launched in September last year. The 35 participants averaged more than ten years' experience in fields ranging from telecoms and IT, to banking and finance, to electronics and utilities," Mr Wang said.

The program includes company visits, study trips overseas, and other activities, including lots of invaluable networking opportunities. The new intake in 2001, together with the MTM in

Global Logistics Management program launched in August 2001 attracted 45 high-caliber professionals.



*MTM-IT Program  
2000-2001  
Study Trip, visiting  
Lung Cheung International  
Holdings Limited in  
Dongguan PRC.*

The Graduate Diploma in Computer Forensics is currently Hong Kong's only postgraduate computer forensics program and possibly the only one of its kind in Asia. This diploma is recognized by the Information Security and Forensics Society (ISFS). Since its inception, this program has successfully drawn over 100 professionals from different backgrounds including banking, law enforcement, legal practice, computer security and management.



*Class instruction for  
technology professionals  
in the state-of-the-art  
Information Technology  
Theater.*

If you would like to learn more about these exciting programs, please visit the CPEP web site at <http://www.seng.ust.hk/cpep> or ring the program office at 2358-6966.

## Campus News

## W3C Advisory Committee Meets at HKUST



HKUST hosted a biannual meeting of the Advisory Committee of the World Wide Web Consortium (W3C) on campus from 30 April to 1 May 2001. Attended by the W3C management team, including Director Tim Berners-Lee and around 200

representatives of W3C Member organizations, the meeting endorsed the recommendation of the Extensible Mark-up Language (XML) schema definition language for "next generation" electronic commerce systems, databases, and other applications involving the use of large volumes of data on the Web. For the first time in Hong Kong and Asia, HKUST also hosted the Tenth International World Wide Web Conference (WWW10) from 1 to 5 May 2001.

## Hong Kong's First Geotechnical Centrifuge Opens at HKUST

The first of its kind in Hong Kong, the HKUST Geotechnical Centrifuge Facility (GCF) was formally opened on 3 April 2001 by Mr S S Lee, Secretary for Works of the HKSAR Government. He was joined by Dr Raymond Ho Chung-Tai, Member of the Legislative Council; Dr John Luk, President of the Hong Kong Institution of Engineers; Ms Ernestina Wong, Deputy Secretary General of the University Grants Committee; Dr Vincent Lo, the University's Council Chairman; Prof Chia-Wei Woo, the University's



founding President; and Prof Otto Lin, the University's Vice-President for Research and Development. The GCF possesses the world's first bi-axial shaking table, which can simulate earthquake effects on soil structures.

## AEARU Student Camp 2001



Forty students from leading universities in the Chinese Mainland, Japan, South Korea and Taiwan joined some 20 peers at HKUST for the Association of East Asian Research Universities (AEARU) Student Camp 2001 held from 29 July

through 4 August 2001. Around the highly topical theme "Technology and Society", campers participated in a variety of programs like talks, group games, company visits, project competitions, etc. Except for the first AEARU Student Camp, which was held in South Korea in 1997, this is the fourth time the camp has been held at HKUST since the summer of 1998.

## IUTAM Symposium

Prof Qingping Sun, Associate Professor of the Mechanical Engineering Department, chaired the International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on "Mechanics and Martensitic Phase Transformations in Solids" held from 11 to 15 June 2001 on the HKUST campus. About 50 renowned scientists from materials science, physics and mechanics were brought together to discuss different aspects and the latest advances of this active multidisciplinary field.



## CALENDAR OF EVENTS

## Oct

- 1-2 **2001 World Congress on Mass Customization and Personalization**  
(Enquiry: 2358-8965, <http://ami.ust.hk/MC01/MCPC.htm>)
- 7 **10th Anniversary Engineering Alumni Homecoming Dinner**  
(Enquiry: 2358-6960)
- 10 **Distinguished Lecture - "Aerosols and Climate"** by Prof John Seinfeld, Louis E Nohl Professor and Professor in Chemical Engineering, California Institute of Technology (Enquiry: 2358-7120, 2358-6960)
- 11 **Distinguished Lecture - "Recent Developments in Intelligent Transport Systems: Opportunities for the Private Sector"** by Prof Kan Chen, Professor Emeritus, University of Michigan (Enquiry: 2358-7092)

## Nov

- 3-4 **2001 International Robot Olympiad** (Enquiry: 2358-7000)
- 7-9 **9th Congregation** (Enquiry: 2358-6314)

## Dec

- 8-9 **International Symposium on "Geotechnical Centrifuge Modeling and Networking - Focusing on the Use and Application in the Pan-Pacific Region"** (Enquiry: 2358-0216)
- 9-12 **5th Asian Symposium on Biomedical Materials (ASBMS)**  
(Enquiry: 2358-7184)
- 12 **Teaching and Learning Symposium on "Teaching Innovations: Fostering a Creative and Collaborative Learning Environment"**  
(Enquiry: 2358-8037, <http://www.ust.hk/celt/tlsymp>)
- 28-30 **International Symposium on Plasticity and Impact (ISPI'01)**  
(Enquiry: 2358-7184)

All titles and dates are subject to revision.

## Don't be the Missing Link ...

Alumni relationship is an invaluable asset to the School. To foster the growth of our alumni network, please keep us informed of your recent news and send us your updated address and contact number via email at [seng@ust.hk](mailto:seng@ust.hk).

Stay connected and keep in touch!

*In Focus* is published biannually by HKUST School of Engineering. Its purpose is to communicate the School's developments and activities of interest to members and friends of the School. Comments, suggestions and contributions are welcomed.

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