



TEACHING & RESEARCH EXCELLENCE AT HKU ENGINEERING

To reward and promote excellence in teaching, the Faculty of Engineering recognizes the devotion and hard work of teaching staff annually with the "Best Teacher Award". Awardees are encouraged to take an active role in promoting teaching and learning in the Faculty and Departments. For the academic year 2008-2009, the Best Teacher Award goes to...

Best Teacher Award 2008-2009

Dr Siu-Ming Yiu

Assistant Professor
Department of Computer Science

Dr S M Yiu, a PhD graduate of the Department of Computer Science, is currently an Assistant Professor in the same department. Dr Yiu is selected as one of the two recipients of the Best Teacher Award 2008-2009 of the Faculty of Engineering in recognition of his excellence in teaching and his contribution in promoting good teaching within the Faculty. He received the same award for the academic year 2004-05.

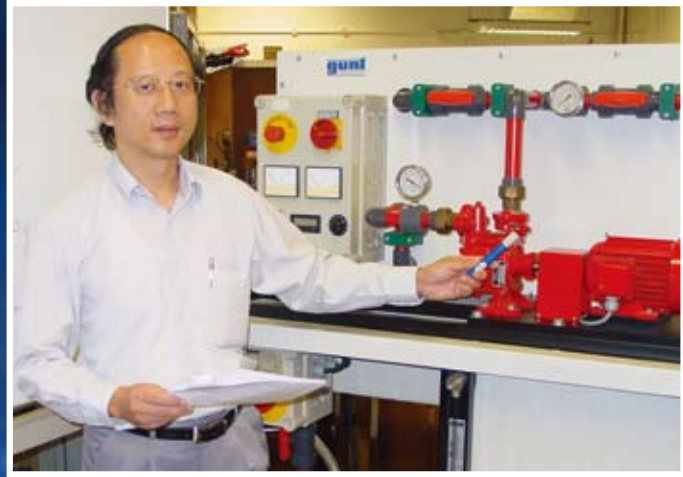
Dr Yiu's teaching philosophy is to motivate students to learn. He teaches students about the fundamentals, and gives them guidance on how to think and how to self-learn. He will explore different teaching methods and approaches to fit students of different background. He will also keep track of their progress, understand their problems and provide appropriate assistance.

Dr Yiu has learned a lot from his teachers (now his colleagues), including how to be a decent researcher and a good teacher. Inspired and influenced by his former teachers, he loves teaching and is very devoted to his research. He cares very much about his students, not only on their academic performance but also on their personal development. He is more than willing to spend time talking to students to understand their problems and give advice to them.

Students like Dr Yiu a lot (including those who were 'failed' by him). He has been consistently ranked among the top of all teaching staff in the evaluation exercises of courses by students, and was selected twice for the **Best Teacher Award** (2008-09 and 2004-05) by the Faculty of Engineering and received the departmental **Teaching Excellence Award** for five times from 2001-02. He also received the **Best Tutor Award** twice when he was a research postgraduate student in the department.

Dr Yiu's main research interest is in bioinformatics, a cross-disciplinary area in which computational techniques are applied to solve real-life biological/medical problems. One of his research projects, "Ineffective siRNAs and Improved siRNA Design Tool", was selected for the Research Output Prize by the Faculty of Engineering in 2006. The software tool has been actively used by researchers all over the world. He has been working closely with a number of external collaborators from famous research centres such as the Beijing Genome Institute (BGI) in Shenzhen and the Genome Institute of Singapore (GIS). In addition to bioinformatics, he is also interested in research related to computer security and cryptography. He has been a consultant for a local IT security company for more than 5 years.





Best Teacher Award 2008-2009

Dr Chiu-On Ng

Associate Professor
Department of Mechanical Engineering

Dr C O Ng graduated with a BSc degree in Civil Engineering from the University of Hong Kong and a PhD degree in Civil and Environmental Engineering from the Massachusetts Institute of Technology (MIT), USA. He became a staff member of the Department of Mechanical Engineering at HKU in 1997. His primary research interests include environmental fluid mechanics, mud slides, geomechanics, fluid flow and chemical transport in porous media, wave-structure interactions, and engineering applications of asymptotic methods.

Dr Ng strongly believes that critical thinking is the key to understanding and engineering students should develop dexterous hands as well as analytical and rational minds. He keeps emphasizing to students that problem solving requires deep understanding and correct interpretation of the subject matter instead of just focusing on the figures.

Dr Ng adapts his teaching to the needs of students in terms of contents and delivery. When introducing a new topic or concept, he will start with motivating students with examples of practical applications. He uses movies, videos, animations, graphics or class demonstration as visual aids. Moreover, students are encouraged to participate through problem solving, questioning and peer discussion. He always addresses the questions raised by students during or after classes.

Over the years of his teaching, Dr Ng has been supervising various students' projects. He also gives valuable guidance to students on course selection. Dr Ng meets students regularly to keep track of their progress.

On the research front, Dr Ng is active and well respected internationally in his area of expertise. His work has been continuously published in reputable journals and he has been receiving good citation index.

Dr Ng received the First Class Prize of Natural Science Award by the State Ministry of Education, China for his research achievements in the marine environmental mass transport modeling in 2007. He was also awarded by the Faculty of Engineering with the Research Output Prize in the Department of Mechanical Engineering in 2006. Over the past few years, Dr Ng has received honorary appointments from Tianjin University, Nankai University, Dalian University of Technology, Bangalore University, and Shanghai University.

Nanomechanics Research

Prof A H W Ngan

Professor, Department of Mechanical Engineering

At HKU Engineering, a team led by Prof A H W Ngan of the Department of Mechanical Engineering has been conducting research on “nanomechanics”, interpreted here as the science of the mechanical behaviour of nano-scale materials and structures. When involving materials with nanometric dimensions in load-bearing design, a difficulty is that their properties scatter a lot. Prof Ngan has performed pioneer work on understanding the physical nature of, as well as constructing models to describe, such scatter. Prof Ngan has also developed novel protocols to test such small structures, including a series of rate-jump methods for accurately measuring the elastic properties of these small materials in different experimental platforms. Based on achievements in these fronts, Prof Ngan was selected as a Croucher Senior Fellow in 2009.

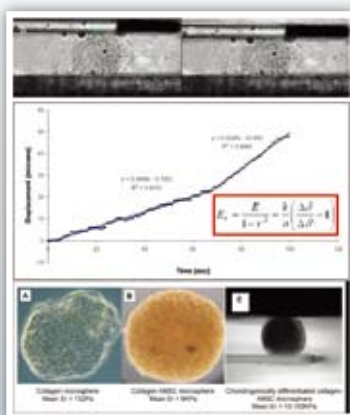
In multiple scientific disciplines, there is an increasing need to understand the mechanical behaviour of materials and structural units of sub-micron to nanometric dimensions. In engineering, devices are being designed to function with submicron sized material structures, and so their reliability depends critically on an accurate understanding of the behaviour of these materials and structures at the length scale concerned. In biological and medical disciplines, efforts are being made to correlate the mechanical properties of small building units of biological tissues with their functions and pathological changes, in an attempt to understand the nature of the relevant diseases, as well as to achieve better design of implants for the alleviation of these diseases. In biological or other systems, there are also many types of forces with very



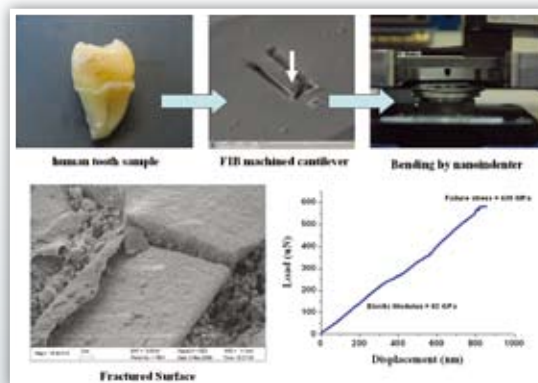
Prof A H W Ngan receiving the Croucher Senior Fellow Award from the Secretary for Justice, the Honourable Wong Yan Lung, on 24th March 2009.

small magnitudes, e.g. in the nano- to pico-Newton range, which are often ignored in traditional engineering, but are important to understand and explore as prime mover sources, for example, in nano/micro-scale engineering.

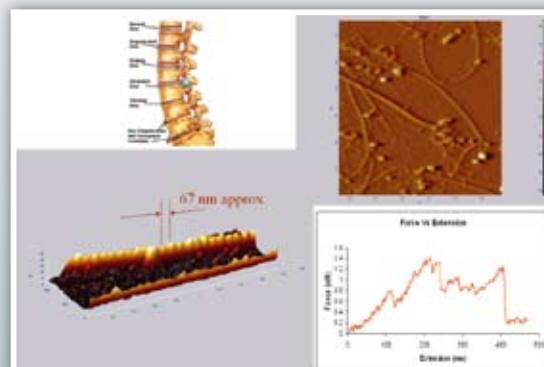
Since c.a. 2000, an equipment cluster has been established which enables forces down to nano-Newton level to be measured with sub-nanometric displacement resolution. Recently, a Special Equipment Grant from the UGC which, together with matching support from the University, amounts to ~HK\$4M, was secured to develop the existing nanomechanical equipment cluster into a state-of-the-art Bio-nanomechanics Laboratory in Hong Kong. Earlier on, a University Development Fund (UDF) also supported a new optical tweezer system which cost about HK\$2M. Together with the existing equipment including nanoindenters, scanning probe microscopes, focused-ion-beam milling system, etc, the new Bio-nanomechanics Laboratory will be equipped with equipment which allows not only seeing and characterizing, but also manipulating and shaping materials with nanometric dimensions. This laboratory should rival the best in the world, and will support collaborative research on a wide front, including many biomedical engineering applications.



A novel rate-jump method for accurate determination of elastic modulus of small tissue-engineering materials (collaboration work between A H W Ngan, B P Chan and K Y Sze within the Department of Mechanical Engineering).



Producing micro-cantilever specimens from localized regions in human teeth, e.g. enamel, dentine phases, and characterizing their mechanical properties. (Collaborative work between Y L Chan and A H W Ngan of Engineering, and N M King of Dentistry).



Characterizing nanometric sized collagen fibrils in human intervertebral discs (Collaborative work between D M K Aladin and W W Lu of Medicine, and A H W Ngan of Engineering).

My thoughts on teaching and research excellence...

Prof Y S Hung

Head, Department of Electrical and Electronic Engineering, HKU

The Department strives for research excellence in its strategic areas of development, and has a continuing plan of setting up advanced facilities to support our leading edge research. For example, over the last few years the Department has invested over \$3M in photonics research, over \$5M on an anechoic chamber with ultra high-frequency equipment for telecommunication measurements, and over \$10M on a high-field MRI scanner, and EEG and ultrasound machines for biomedical engineering. The Department is actively engaged in a clean energy initiative, with over \$20M funding, that integrates multiple disciplines including emerging technologies in renewable energy, information technology, micro grid and smart grid.

In terms of teaching, the Department has been exploring the use of mobile learning technologies for use in the classroom. We also

put emphasis on all-round development of our students, and provide them with a wide variety of opportunities to enrich their educational experiences. A good example is the engagement of our second year students in the summer of 2009 as part of their industrial training to help set up multimedia classrooms and solar energy installations in the Deyang City Primary School as a Sichuan reconstruction project after the earthquake.

I would like to welcome all freshmen to the Faculty of Engineering. As the Faculty is now running a common code admission scheme, I would suggest that students make use of this flexibility to fully explore their own interests. My advice for freshmen is to play hard, but work even harder and make use of the years at the university to prepare and develop themselves as whole persons for their future careers.

Organic/Polymer Semiconductor Optoelectronic Devices Research

Dr Wallace C H Choy

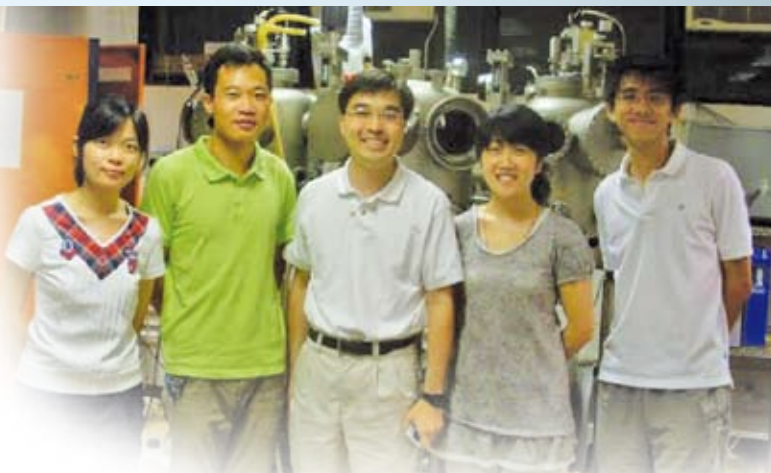
Department of Electrical and Electronic Engineering
The University of Hong Kong

Organic Semiconductor Optoelectronics

Since joining the University of Hong Kong, Dr Choy has been working on Organic/Polymer Optoelectronics such as organic light emitting devices and solar cells, and in particular optical design and device physics for improving efficiency, light response and behaviour, and thus the performance of the devices.

'The fundamental issues of energy crisis are the large and increasing energy consumption, and the inadequate and polluting energy sources. We therefore should simultaneously achieve reduction in power consumption and introduce green and sustainable energy sources,' said Dr Choy. 'Organic/Polymer optoelectronics is a promising candidate for addressing both issues. In fact, organic/polymer optoelectronics have several distinct features such as physical flexibility, low cost, simple fabrication, minimal restriction of substrate selection, and large area emission (for light emitting devices).'

Nowadays, one-fifth of the electricity consumption is related to lighting and illumination. The consumption is expected to increase steadily with higher living standards. With the development of phosphorescent emitters, OLEDs with 100% internal quantum efficiency can theoretically be realized. Various



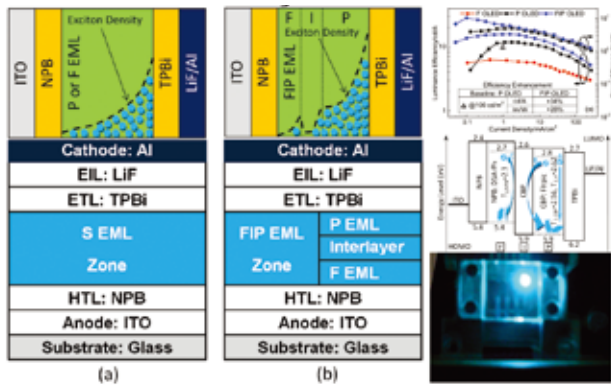
A recent photograph with students in Optoelectronics Lab in Department of Electrical & Electronic Engineering, HKU.

device architectures have been proposed and have successfully demonstrated this concept with peak external quantum efficiency of around 20% in experimental levels.

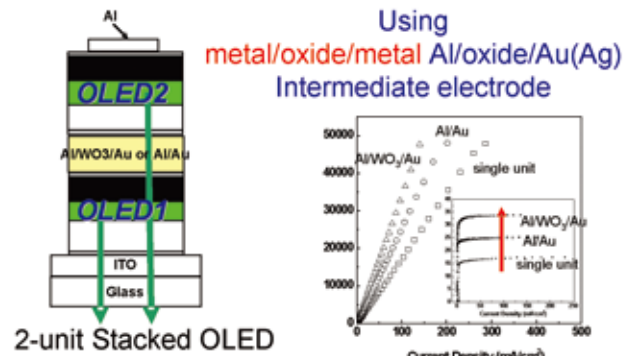
Regarding green solar energy, the cost of the most popular silicon-based solar cells is high. Moreover, silicon-based solar cells need to operate in good conditions for three to five years, just to compensate for the total energy used in manufacturing the cells. 'Organic/polymer solar cells with large absorption coefficient, simple and low cost fabrication process – such as the room-temperature process of roll-to-roll printing which can fabricate large-scale solar cells – are an attractive candidate for green energy source,' Dr Choy said.

Through rigorous and coherent training from previous working experience in the industry (Fujitsu), national labs (NRC Canada) and academic institutes, Dr Choy has gained solid knowledge in device physics and optical properties. These are extremely important for realizing high-performance organic/polymer

High Performance OLEDs: Efficiency Enhancement

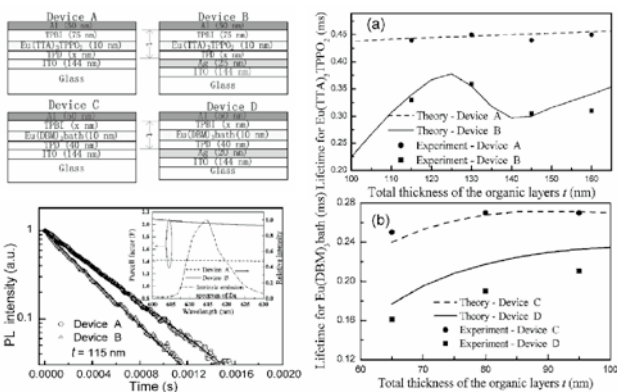


A fluorescence-interlayer-phosphorescence (FIP) emission architecture is introduced to enhance the power efficiency of blue OLEDs.



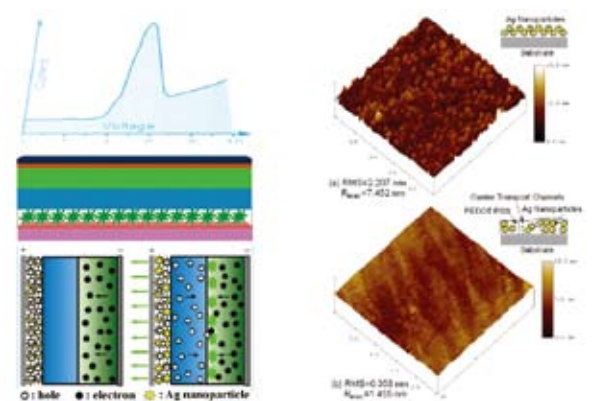
A structure of "metal-oxide-metal" is utilized for enhancing the efficiency in stacked OLEDs.

High Performance OLEDs: Microcavity Modified Architecture



The photon lifetime of emitters, used to be one of intrinsic properties of materials, can be engineered by our microcavity and surface plasmonic resonance structure for optimizing the performance of OLEDs.

Hybrid Organic/Nanoparticle Device with Strong Resonant Tunneling



A novel structure of organic/nanoparticle structure has been developed for offering the strong resonant electrical tunneling.

thin film and nanostructure optoelectronics. Since he joined Department of Electrical & Electronic Engineering, Dr Choy has published over 55 internationally referred journal papers, been invited to deliver three talks in international conferences and contributed to one US patent in the field. He has also received overseas visiting fellowships from the Engineering Faculty to visit George Malliaras's Group at Cornell University in 2008 and Prof Y Yang at UCLA in 2009 to conduct research in polymer solar cells and LEDs.

In China, he has collaborated with several leading groups in polymer/organic electronics including South China University of Technology, Changchun Institute of Applied Science, and Chinese Academy of Sciences. He has been serving as a technical consultant of HK-Ulvac (a member of the listed Ulvac Corp) since 2005. He has also served as a committee member in international industrial and academic conferences organized by various organizations such as IEEE, OSA and Plastic Electronics Foundation.

Sharing

Dr Choy finds international engagement and experience very useful.

'The opportunities to visit research groups during past few years have been particularly fruitful. They help expand my network in the field and lay solid foundations for further research,' said Dr Choy. 'In addition, staying with the groups for a prolonged period helps strengthen our mutual understanding of each other's research work. Since they have varying strengths and practices in running labs, I could learn about their strengths in research, conducting experiments, handling students and other issues.'

During one of his visits, the host professor severely and repeatedly challenged his work during his talk. The professor in fact severely challenged other speakers during their seminars. 'Although we might feel frustrated and uneasy and might not be able to answer the questions immediately, these serious challenges in the long run helped us understand more about the technology,' Dr Choy recalled. 'They helped us discover the intrinsic and crucial problems and clarify our research directions. We ultimately learned to solve the problems and accept (and even enjoy) the process of being challenged. This was crucial in helping us build the right attitudes in receiving and giving feedback.'

Collaboration with the industry for the development of renewable energy in Sichuan

The Sichuan reconstruction project was strongly supported by the industry. CLP Power and Jaiwei Solar China were supporting organizations of the project. They sponsored the uniform, solar energy panels and provided technical advice and training to the reconstruction team. The strong collaboration between the Department and the industry was a key factor for the success of the project.

Prof Ding Kongxian, Chairman of Jaiwei Solarchina Company presented the solar panels to Prof Y S Hung.



Engineering teachers and staff installed solar-energy panels on the roof of the reconstructed school using renewable energy to renew Sichuan.

First Sichuan-Hong Kong Interactive Class successfully conducted on August 5, 2009

Dr Wilton Fok, Dr Alfred Yu, Dr Philip Pong and Dr YC Wu, Department of Electrical and Electronic Engineering, led a team of 43 HKU students to Sichuan to design and install an online multimedia e-learning system for a reconstructed school - Yuanjia Primary School in Deyang. The system was successfully installed in three days on Aug 5, 2009, immediately followed by the First Sichuan-Hong Kong interactive class launching ceremony in the afternoon. During the on-line interactive class,



(Left) Ir Dr Hon Raymond HO Chung-tai, Member of the Legislative Council and Hong Kong delegate to the National People's Congress and Prof S P Chow, Pro-Vice-Chancellor, addressed the audience in the event.



The project team's departure at the HK International Airport.

students from the earthquake hit Yuanjia Primary School at Sichuan had shared their experience with Hong Kong students via the system. They shared their learning experience and feelings about the earthquake and played interactive games using the newly installed system. The system has been designed aiming at linking students between Sichuan and Hong Kong in an easy and effective way in the future.

The move is also part of the "512 Sichuan School Rebuild Project", an initiative under HKU "512 Earthquake Roundtable" partnering with the 512 Young Engineer Alliance and the Association of Engineering Professions in Society (more details at <http://www.eee.hku.hk/~sichuan/>)

In HKU



In Sichuan

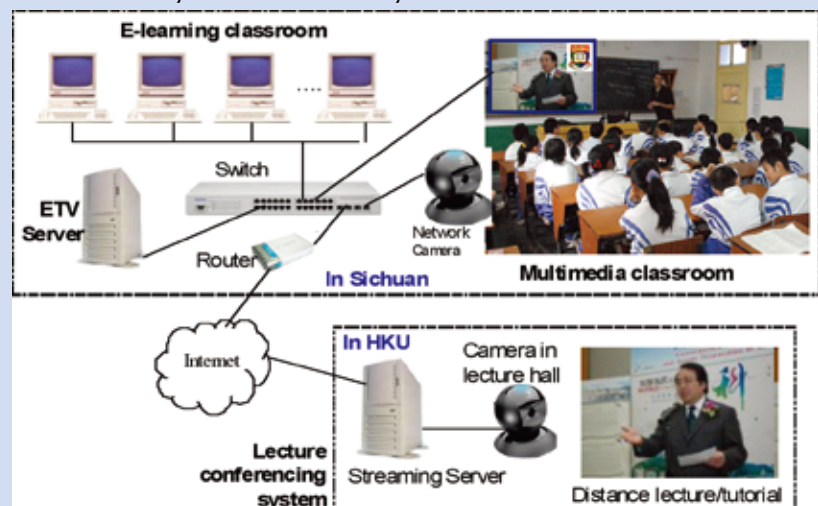


Guests and students were linked to the Deyang Yuanjia Primary School via the multimedia data link network.

HKU teachers and students built a Solar-powered Multimedia Satellite E-learning System for a reconstructed school in Sichuan in August 2009

From August 2 to 6, 2009, a team of HKU teachers and staff including Dr Wilton Fok (EEE), Dr Alfred Yu (EEE), Dr Philip Pong (EEE), Dr Y C Wu (EEE), Dr Sam Lam (EEE), Dr Lisa Deng (Education Faculty), Dr Elaine Chan (General Education Unit), Dr P T Ho (Computer Center), Mr Rex Ng (Education Faculty) and Mr Michael Yiu (CEDARS) led 43 HKU students to build a Solar-powered Multimedia Satellite E-learning System for a reconstructed school in Sichuan. In this project, there were a number of sub-systems including solar energy power grid, multimedia classrooms, satellite education TV system, e-learning system, educational TV server and computer laboratory. These systems had been installed by the team in only three days. A conceptual diagram of the system is shown on the right.

The system installed by the reconstruction team



This project is an initiative under HKU "512 Earthquake Roundtable", partnering with the 512 Young Engineer Alliance, the Association of Engineering Professions in Society and other organizations after the earthquake to relay the care of the community to the victims.



On July 5, 2009, Hon Henry Tong, the Chief Secretary of the HKSAR Government, visited the Yuanjia Primary School and inspected the progress of the project



On August 2, 2009, the HKU reconstruction team marched into the construction site to start the installation work of the project.



At 5 pm on August 2:
When the team arrived, the Multimedia Computer Laboratory was still empty.

Before and after...



At 2 pm on August 5:
The Multimedia Computer Laboratory was ready for the first Sichuan-HK online interactive class.

HKU to Kick Start Project WATERMAN – A Water Quality Forecast and Management System for Hong Kong

The Department of Civil Engineering and the Department of Computer Science of The University of Hong Kong jointly organised a Launching Ceremony on April 29, 2009 to officially kick-start Project WATERMAN - "A Water Quality Forecast and Management System for Hong Kong", a 3-year project funded by The Hong Kong Jockey Club Charities Trust.

The Launching Ceremony was officiated by Mr William Y Yiu, Executive Director, Charities, The Hong Kong Jockey Club, Ms Anissa Sean-Yee Wong, Permanent Secretary for the Environment / Director of Environmental Protection of HKSAR Government, Professor Lap-Chee Tsui, Vice-Chancellor and President of HKU and Professor J H W Lee, Pro-Vice-Chancellor and Vice-President of HKU and the Principal Investigator of Project WATERMAN.



(From left) Professor W Wang, Professor J H W Lee, Mr William Y Yiu, Ms Anissa Sean-Yee Wong and Professor Lap-Chee Tsui.

WATERMAN is a joint venture of the Croucher Laboratory of Environmental Hydraulics and the Department of Computer Science of HKU. The Project aims to develop an innovative environmental knowledge base for all of Hong Kong's waters including four major components: (1) Beach water quality forecast system; (2) Fisheries management system; (3) 3D Environmental Impact Assessment system; and (4) Educational platform. Further information on Project WATERMAN is available at <http://www.waterman.hku.hk>

Scholarship Presentation Ceremony 2008-09

The Scholarship Presentation Ceremony for 2008-09 held on April 14, 2009 in Loke Yew Hall was attended by recipients, parents, school principals, donors and Department staff. There were a total of 42 recipients including BEng and MSc students. The Guest of Honour, Mrs Carrie Lam Cheng Yuet Ngor, delivered a speech and presented souvenirs to sponsors thanking them for their generosity in offering contributions to the cause of academic excellence. It was a chance not only for the students to thank their donors personally, but also for them to interact and exchange with prominent engineers from industry.



SINOROCK2009, ISRM-Sponsored International Symposium on Rock Mechanics: "Rock Characterisation, Modelling and Engineering Design Methods"

The ISRM-Sponsored International Symposium on Rock Mechanics was successfully held from May 19 to 22, 2009 at The University of Hong Kong. The symposium was organised by the International Society for Rock Mechanics, The University of Hong Kong, the Chinese Academy of Sciences and the Chinese Society for Rock Mechanics and Engineering.

Professor J H W Lee, Pro-Vice-Chancellor of The University of Hong Kong; Professor Qian Qihu, President of the Chinese Society of Rock Mechanics and Engineering; Professor John Hudson, President of the International Society of Rock Mechanics; Ir K K Lau, Director of Drainage Services Department of the Hong Kong SAR Government, gave



2009 ISRM Chinese Lecture Tour: 1-day Rock Mechanics and Rock Engineering Course held on May 15, 2009

a warm welcome address in the opening ceremony. Professor W C Chew, Dean of the Faculty of Engineering of The University of Hong Kong, presented a souvenir to Ir K K Lau. Mr Malcolm Gibson, Professors John W Cosgrove, Qian Qihu, Bezalel Haimson, Shunsuke Sakurai, Wang Ju and Dr Gang Li delivered keynote presentation for this symposium, respectively. More than 200 experts introduced their scientific research achievements in areas that include Rock Characterisation, Modelling, Engineering Design Methods, Nuclear Waste, Sichuan Earthquake, and Hong Kong Project.

Opening Ceremony held on May 19, 2009

In April 2009, Professor David Cheung and his R&D Team at the Center for E-Commerce Infrastructure Development (CECID) began to research and develop a scalable centralized data security infrastructure. A novel technique called multi-factor encryption will be devised to control access privileges

for different data users, including those who need remote data access over the Internet and data storage on portable devices. This two-year project has received \$6.58 million funding from the Innovation and Technology Commission of Hong Kong Government and sponsorship from industry partners.

EEE Staff and Students in Service: Outreach Seminar for Gifted Secondary School Students



Dr Alfred Yu (middle left) and postgraduate students on the organizing team, together with Ms Karina Mok from HKAGE (middle right) and a few seminar participants.

To help introduce secondary-school students in Hong Kong to the field of biomedical engineering, an outreach seminar entitled “What is Biomedical Engineering?” was organized in collaboration with the Hong Kong Academy for Gifted Education (HKAGE). The seminar was held on August 14, 2009 (Friday) at HKU with over 40 gifted students joining the occasion.

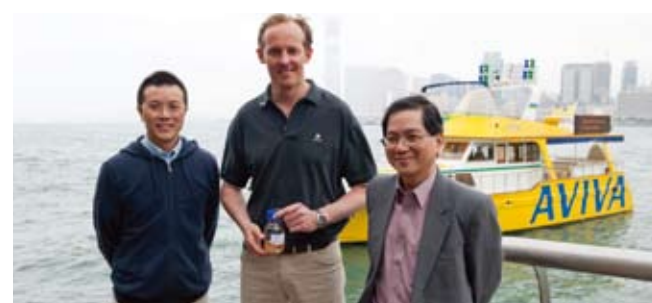
The seminar was delivered by Dr Alfred Yu and seven postgraduate students from the Biomedical Engineering Research Group (Donald Chan, Dave Cheung, Harry Chiu, Cmon Lai, Lawrence Poon, Ivan Tsang, Billy Yiu). In the plenary session of this seminar, the participants were given an overview of biomedical engineering and its various branches. It was followed by two interactive mini-lessons that gave participants a hands-on opportunity to try out medical ultrasound scanning and electrocardiogram measurements. Through this seminar, participants were able to develop their own working definition of biomedical engineering and give some examples on the societal impact of this discipline.



Participants learning how to make electrocardiogram measurements.

First Green Junk in Hong Kong

Professor Dennis Y C Leung and Dr Michael K H Leung converted a conventional cruising-boat into the first Green Junk in Hong Kong. The project was sponsored by Aviva Life Insurance Co Ltd. The main purposes of the Green Junk are to raise public awareness of environmental problems and to promote environmental-friendly products for mitigation of global warming. The solar photovoltaic panels and micro wind turbines installed can harness renewable energy to reduce greenhouse gas emission from the junk. Moreover, the junk is fully equipped



From left to right: Dr M K H Leung; Mr Simon Phipps, Managing Director of Aviva; and Prof D Y C Leung.

with highly energy-efficient products, such as heat pump water heater/air-conditioner, induction cooking appliance and LED lighting. It is also capable of monitoring the ambient air quality by portable weather station, respirable suspended particulates (RSP) monitor and ozone sensor for environmental analysis.

Prof Leung and Dr Leung continue their research to develop new technologies to further improve the environmental performance of the junk, such as the use of bio-diesel, smoke scrubbing system and airfoil-based micro wind turbines. The Green Junk is a successful entity for demonstration of green technologies.



The Green Junk.

William Mong Distinguished Lecture

Prof David Lorge Parnas delivered an interesting lecture on “Educating and Licensing Engineers Who Specialise in Software” on August 31, 2009. Prof Parnas gave his views on what should be included in an educational programme for engineers who specialise in software intensive systems and how should such programmes be structured. He also discussed why software developers should be licensed and subject to the same

regulation as engineers in the traditional engineering disciplines. The lecture generated a lot of interest among the audience.



Prof Parnas and Mrs Parnas (3rd & 4th from left) gathering with members of HKU Engineering after the lecture.



Prof W C Chew (right) presented a souvenir to Prof Parnas.

HKU Robot team received awards at ABU Asia-Pacific Robot Contest 2009 (Tokyo, Japan)

The robot team of HKU Faculty of Engineering, led by Dr K C Cheung of Mechanical Engineering Department, took the First Runner-Up and Best Artistic Design Award in the ABU Robot Contest held on Saturday, August 22, 2009 in Tokyo, Japan. There were 20 teams from 19 countries entering this contest (the host country, Japan, has two teams.) The team from Harbin Institute of Technology, China completed the required tasks in 19 seconds (winner) and HKU Engineering in 24 seconds (first runner-up). The result was an integrated effort of the Faculty and departments (Mechanical Engineering, Electrical and Electronic Engineering and Civil Engineering).

The HKU Robot Team was composed of current engineering students and graduates. The members are as follows:



The HKU Robot team.

- | | | | |
|---------------------------------------|------------------------|------------------|---------------------|
| • Dr Cheung Kie Chung
(Instructor) | • Lam Yau Kin | • Ko Kam Pan | • Li Tam Tan Fung |
| • Cheung Wai Yeung | • So Ngai Hin | • Kwok Tsun Fung | • Ng Wang Fei |
| • Tam Wai Shun | • Yip Tsz San | • Lam Kin Hang | • Yuen Ching Man |
| • Ma Ho Yuen | • Chang Yeuk Lan Karen | • Lau Kwan Lun | • Yuen Ho Yan Janet |
| | • Chong Chi Wa | • Leung Ka Kit | • Zhang Bo Yi |



Engineering Summer Camp 2009

The Faculty of Engineering organised the Engineering Summer Camp from July 27 to 30, 2009. A total of 99 students from local and overseas secondary schools participated in the camp. During the camp, the participants enjoyed various kinds of activities including hands-on projects, lectures, laboratory visits, field trips, hall games...The participants also got to hear current students and alumni talk about their thoughts about life at university and after graduation. All in all, the summer camp is a great opportunity for students who are considering future university studies to explore the various engineering disciplines in HKU, to experience university life, and to have fun!



Registration Day

The Registration Day was held on August 4, 2009 with an aim to give freshmen an opportunity to have a 'first touch' of The University of Hong Kong. During the day, students obtained information about faculties, departments, residential hall, university associations, etc. Current students also gave guidance to freshmen about HKU.



Orientation Day

The Engineering Orientation Day was held on August 15, 2009. A total of 120 freshmen joined the event held on HKU campus and they participated in different activities such as mass games and ghost tours. Through the Orientation Day freshmen got to familiarize themselves with HKU.



Orientation Camp

The Orientation Camp was held from August 6 to 8, 2009. More than 140 freshmen joined the camp and participated in various activities including detective game, society game, water war and camp fire. The freshmen met a lot of new friends and spent enjoyable and meaningful time at the camp.



Congratulations

STAFF AWARDS

Professor J H W Lee received the 2009 American Society of Civil Engineers (ASCE) Hunter Rouse Hydraulic Engineering Award at the IAHR-ASCE Congress in Vancouver on August 14, 2009 and he also delivered the 2009 Hunter Rouse Hydraulic Engineering Lecture for the occasion.

Hunter Rouse (1906-1996) was a hydraulician known for his research on the mechanics of turbulence. He was a faculty member at the Massachusetts Institute of Technology, Columbia University, California Institute of Technology and Director of the Iowa Institute of Hydraulic Research. Rouse is remembered as the father of modern hydraulic engineering.

The Hunter Rouse Lecture was endowed in 1979 by the ASCE Environmental and Water Resources Institute (ASCE-EWRI) through personal contributions of engineers and engineering firms throughout the world to honor Rouse's contributions to hydraulic engineering. This is considered the premium award in the field and it is also the first time the honor is given to an Asia-based academic. Past recipients of the coveted award include Professors Donald Harleman from MIT, Norman Brooks from Caltech, Victor Streeter from University of Michigan, and Robert Street from Stanford.

As noted on the award citation, Professor Lee was selected for the Hunter Rouse Hydraulic Engineering Award "For outstanding contributions to environmental hydraulics, in particular, the study of jet flows and their application to outfall design, and for exemplary service to the international hydraulic engineering community."



Professor J H W Lee (right) received the ASCE Hunter Rouse Hydraulic Engineering Award at the IAHR-ASCE Congress

STUDENT AWARDS

CMA and Donors Scholarships 2008-2009, Sir Edward Youde Memorial Scholarships 2008-2009 & Best Paper Award of the Institution of Civil Engineers (ICE) Paper Competition:
Mr Chan Chun Wing (2009 graduate)

Chun Wo Foundation Scholarships 2008-2009:
Mr Chan Ho Yin Howard (Year 2 BEng student, 2008-2009)

The Institution of Civil Engineers (ICE) Paper Competition- the Award of Merit:

Mr Chan Hoi Yuen (2008 graduate)
Mr Lee Ka Ho (2008 graduate)
Mr Leung Wai Lok (2008 graduate)
Miss Wong Ying (2008 graduate)

Engineering Outstanding Students Scholarship 2008-2009:

Mr Ching Ho Jerome (Year 1 BEng student)
Mr Cheng Kai Tsun Nicholas (Year 1 BEng student)
Mr Chan Wai Hei (Year 1 BEng student)
Mr Leung Yu Wai (Year 1 BEng student)

The Providence Foundation Outward Bound Training Awards 2008-2009:

Miss Leung Ka Yi (Year 1 BEng student)
Miss Wong Sin Yan (Year 2 BEng student)

HKU Engineering Alumni Association Scholarship 2008-2009:

Miss Su Meini (Year 2 BEng student)

The Institute of Industrial Engineers - the Construction Division Student Paper Competition for 2008-2009:

Mr Sammy Wan (PhD student) won 1st place

The Lin Guo Kai Award for the Promotion of Sports Activities 2008-2009:

Mr Wong Chak Yin (2009 graduate)

STAFF AWARDS

The IEEE Engineering in Medicine and Biology Society Hong Kong Chapter (<http://embs.ieee.org.hk/>) is the recipient of the 2009 EMBS Outstanding Chapter Award. Professor Paul Cheung served as the founding chair in 2006-07, while Dr Edmund Lam and Dr Alfred Yu are the current vice-chair and publicity officer & membership liaison, respectively.

STUDENT AWARDS

The Shun Hing JVC Scholarship 2008-2009:
Li Hong (EComE3)

The Chiap Hua Cheng's Foundation Scholarship 2008-2009:
Chen Yulu (EComE3)

The Simatelex Charitable Foundation Scholarships 2008-2009:

Lai Chengdi (EComE3)
Man Ka Ho (EComE3)

The Chan Wing Donor Scholarship 2008-2009:
Yew Kok Jin (EE1)

The International Conference on ICT in Teaching and Learning (ICT2009):
Mr Yeung Kai Wing (EComE3) won the eInnovation Competition Award - Student Project

The Hongkong Electric Co Ltd Electrical Energy Scholarship 2008-2009:
Chiu Tak Shing (EE2)
Lau Ka Yue (EE3)
Wong Tsz Chung (EE3)
Yew Kok Jin (EE1)

The Junefair Engineering Co Ltd Scholarship 2008-2009:
Diao Chen Xi (EE2)

Tiu Yat Ho (EE1)
Wong Chun Yiu (EE3)

The Parsons Brinckerhoff (Asia) Ltd Scholarship for Electrical Engineering 2008-2009:
Diao Chen Xi

The Yook Tong Electric Co Ltd Electrical Energy Scholarship 2008-2009:
Cheng Tsz Kwai (EE1)

The CLP Scholarships in Electrical Engineering 2008-2009:
Cheng Tsz Kwai (EE1)
Hung Tsz Kwan (EE2)
Lam Yuk Fai (EE2)
Mou Wai Ki (EE2)
Tam Ming Hei (EE2)

The Hang Seng Bank Community Service Scholarships 2008-2009:
Mr Leung Chung Ming (EE3)

The Hitachi (H.K.) Ltd. Scholarships 2008-2009:
Mr Cai Xun (EComE3)

The Azeus Systems Scholarships 2008-2009:
Hui Man Choi (InfoE3)
Ng Wai Lok (InfoE3)
Tsang Wai Lun (CE3)

The Apple Worldwide Developers Conference Student Scholarship 2009:
Mr Shi Ruichao (Information Engineering final year)
Mr Johnny Yeung (post-graduate student)

The Croucher Cambridge International Scholarship (awarded jointly by the Croucher Foundation and the Cambridge Overseas Trust):

Gordon Fu (postgraduate student) received the award for his PhD studies in University of Cambridge, UK

The 2009-2010 Fulbright Scholarship for dissertation research:
Mr Kevin C Chan (year-3 PhD candidate) will spend 10 months in USA for PhD dissertation research

The ATAL Engineering Scholarships 2008-2009:
Wong Tsz Chung (EE3)

HKU Engineering Alumni Association Scholarships 2008-2009:
Chen Yulu (EComE2)

The KONE Elevator (HK) Ltd Scholarship in Electrical Engineering 2008-2009:
Wong Chun Yiu (EE3)

Microsoft Research Asia Fellowship:
Miss Hong Jun (second-year PhD student)

The Entrance Scholarships in Electrical and Electronic Engineering 2008-2009:
Liu Guan Nan (EComE1)
Wen Ge Zheng (EComE1)
Wen Hao Fu (CE1)
Yao Jing Wei (EComE1)
Yu Hui Ting (CE1)

STAFF AWARDS

Outstanding Earth Champion Hong Kong 2008 (awarded by the Earth Champions Foundation):
Professor D Y C Leung

Outstanding Researcher Award, HKU & Guest Professorship by Harbin Institute of Technology, China:
Professor J Lam

Croucher Senior Research Fellowship (awarded by Croucher Foundation):
Professor A H W Ngan

STUDENT AWARDS

The Hong Kong Youth Design for the Elderly Competition 2008-2009:
Yung Hon Ki Kenneth (Champion prize)
Law Cheuk Kit Keith (Second prize)

JEC Outstanding Engineering Project Awards 2007-2008 – Silver Award:
Miss Chan Hei Man (BSE)

Miss Law Tsui Yuen Jenny (BSE)
Mr Liu Hon Lam Clement (ME)

BUDA Group-UtilityINFO (HK) Ltd Prize 2008-2009:
Ng Chun Wai (ME graduate 2009)
So Ngai Hin (ME graduate 2009)

Chiang Chen Industrial Charity Foundation Scholarship 2008-2009:
Chau Chi Wai (ME Year 2)

Chiap Hua Cheng's Foundation Scholarships 2008-2009:
Tsang Cheng Hou Alan (ME graduate 2009)
Tang Yik Sau (ME Year 2)
Leung So Sum (ME Year 1)

CMA and Donors Scholarships 2008-2009:
Tang Kit Wai (ME Year 3)

Engineering Outstanding Students Scholarship 2008-2009:
Chan Hiu Fung (ME Year 1)
Leung So Sum (ME Year 1)

Lin Wai Juen (ME Year 1)
Wong Man Long (ME Year 1)

HKIE Building Services Division Scholarship 2008-2009:
Yau Tik Choi (BSE Graduate 2009)

KONE Elevator Scholarship 2008-2009:
Lai Yuen Yee (BSE Year 2)

Parsons Brinckerhoff (Asia) Ltd Scholarship 2008-2009:
Lai Yuen Yee (BSE Year 2)
Lam Chun Hon (BSE Year 2)

Simatelex Charitable Foundation Scholarships 2008-2009:
Lui Graham (ME Graduate 2009)
Wong Man Long (ME Year 1)

Sir Edward Youde Memorial Scholarship 2008-2009:
Leung So Sum (ME Year 1)

STAFF AWARDS

The International Information Systems Security Certification Consortium, Inc [(ISC)²] - honoree in the category of Senior IT Security Professional for the third annual Asia-Pacific Information Security Leadership Achievements (ISLA) program of (ISC)²:
Dr K P Chow (Center for Information Security and Cryptography (CISC))

STUDENT AWARDS

The 2009 Amway Pan-Pearl River Delta Region Universities IT Project Competition – Bronze Award:

Mr Hung Hing Cheong (graduate)
Miss Leung Sze Ki (graduate)
Mr Yuen Wai Hung (graduate)

Y W Kwok Scholarships 2008-2009:
Mr Chan Ping Fai (final year BEng student)

Simatelex Charitable Foundation Scholarships 2008-2009:
Mr Tong Chiu Man (second year BEng student)

The 33rd Annual IEEE International Computer Software and Applications Conference (COMPSAC 2009) – Best Paper Award:
Mr Bo Jiang (PhD student)

Mr Zhenyu Zhang (PhD student)
Prof T H Tse (Professor, The University of Hong Kong)
Prof T Y Chen (Professor, Swinburne University of Technology, Australia)

The Azeus Systems Scholarship 2008-2009 & HSBC Hong Kong Scholarship 2008-2009:
Miss Mak Yiu Ying (final year BEng student)

The Entrance Scholarships in Computer Science 2008-2009:
Divine Fung (first year BEng student)
Ping Lam (first year BEng student)
Wan Ho Lun (first year BEng student)

Alumnus Ir Mak Chai Kwong shared his experience on Sichuan reconstruction with our students

Alumnus Ir MAK Chai-kwong, Permanent Secretary for Development (Works) HKSAR, delivered a seminar titled 'The Post-quake Reconstruction after the 512 WenChuan Earthquake' on July 27, 2009. He shared his experience on Sichuan reconstruction with the HKU Sichuan Reconstruction Team who went to Sichuan to construct a rebuilt school in August 2009. The seminar was jointly organized by the Hong Kong University Graduates Association and the Department of Electrical and Electronics Engineering.



Ir Mak Chai Kwong shared his experience on the Sichuan reconstruction project with HKU staff / students and HKUGA members

EEE alumnus Dr Lee Yui Bor, the Non-executive Director of CLP, shared his successful story at CLP Power, the Hong Kong's Biggest Electricity Utility

CLP, the largest electricity utility in Hong Kong, organized a career talk for HKU engineering students on February 11, 2009. While serving over 80% of Hong Kong's population, CLP also has extensive investments in the Asia-Pacific region. The company recruits talents through well-coordinated scholarship, sponsorship, internship and Graduate Trainee (GT) programs, through which students get to understand the industry.

During the talk, HKU alumnus Dr Lee Yui Bor, currently Non-executive Director of CLP, shared his success story with the audience. Dr Lee's first full-time job was being an intern at CLP in 1968. After postgraduate studies, he joined CLP again in 1976 and worked there for 30 years until retirement. In the 80's, his career grew along with the expanding economy of Hong Kong and China. He took part in projects enhancing power system stability such that blackouts were minimized. Developing the 400kV system from paper to reality gave him a great sense of achievement. "Looking back, it was both challenging and interesting to be a professional engineer," concluded Dr Lee. "I am grateful that CLP has always been an employer with



integrity in business practices and engineering professionalism. With the support of management, I had always made difficult decisions with a clear conscience." Lastly, Dr Lee reminded us that career success depended on personal competence and performance.

The GT program aims at fostering professional engineers in the power industry and developing high-potential graduates to become future leading engineering experts. It is a 2-year structured training program accredited by HKIE as a Scheme A Program which fulfills the requirements to obtain HKIE's Corporate Membership. The program is open for students majoring in Electrical, Electronic and Mechanical Engineering. The number of intakes depends on business needs and the quality of candidates. This year's intake target is more than ten. The successful candidates will be offered some basic training in CLP's Training School first. After that, they gain practical experience by working in different line departments, which provides broad exposure and networking opportunities.

In terms of management support, department heads are assigned as mentors and senior managers take up the responsibility of engineering supervisors.

The GT program demonstrates CLP's commitment in people development. In recent years, many CLP GT have won the Trainee of the Year Award of HKIE.

Alumnus Dr Y B Lee shared his success story

EE Alumnus Ir C C Ngan from CLP Power shared expertise on renewable energy with students preparing for the Sichuan reconstruction

An Electrical Engineering alumnus Ir C C Ngan represented CLP Power to share their expertise in solar energy system design and installation with around 40 students who went to Sichuan this summer to install renewable energy and multimedia e-learning classrooms for a reconstructed school in Sichuan.



Students learned a lot of practical design and engineering issues from Ir Ngan. CLP Power is one of the sponsors of this mission. They sponsored the travelling expense of a team of students to install renewable energy in that reconstructed school. There were 4 more teams who were responsible for multimedia classrooms, computer laboratory, e-learning education program and media, respectively. These teams were funded by the Sichuan Earthquake Roundtable Fund sponsored by HKU.

From left: Dr Alfred Yu, Ir C C Ngai (CLP), Ms Peggy Chan (CLP), Dr YC Wu, Dr Elaine Chan and Dr Wilton Fok

DEPARTMENT OF CIVIL ENGINEERING

Prof M M Kumaraswamy gave a keynote address at the “International Conference on Construction Research Funding in the XXI Century: A Partnership between Academia, Industry, and the Public Sector” held in Illinois, USA from July 8 to 10, 2009. This conference was sponsored by the National Science Foundation, the International Development Grant Program at the University of Illinois (Urbana-Champaign), and the Worldwide Universities Network (WUN). Participants included academics, public officers, and construction industry practitioners.

Prof J H W Lee has been awarded a grant of HK\$602,000 from the Croucher Foundation to organise the Advanced Study Institute (ASI) on “Recent Developments in Nearshore Coastal Water Quality Research: Prediction, Hydro-biological Interactions and Management”, which will take place at the University of Hong Kong from December 14 to 19, 2009. The objective of the ASI is to update established engineers and scientists (from Hong Kong and the region) in academia, government, and industry of recent developments in the prediction and management of near-shore coastal water quality, with emphasis on fundamental research relating to the above aspects.

Dr S T Smith visited Chalmers University, Sweden in May 2009 to examine a PhD candidate in the capacity of Opponent. He also presented a seminar during his stay at Chalmers entitled “Anchorage of FRP Strengthening Systems”.

In his capacity as member of its International Scientific Committee, Dr S T Smith attended the 9th International Symposium on Fiber Reinforced Polymer Reinforcement for Concrete Structures from July 13 to 15, 2009 in Sydney, Australia. He presented the paper entitled “Shear strength and behaviour of FRP spike anchors in cracked concrete” and also chaired a technical session. Dr Smith also visited the University of Technology Sydney and the University of Sydney, in which he presented a seminar entitled “Anchorage of FRP Strengthening

Systems”. Lastly, Dr Smith visited The University of New South Wales as a guest of its Centre for Infrastructure Engineering and Safety (CIES) from July 20 to 24, 2009 and presented a seminar entitled “Strengthening of Civil Infrastructure with FRP Composites: Recent Advances”.

Prof S C Wong delivered an invited lecture on “Continuum modeling of traffic flow in an urban city” at the Eighth International Conference on Traffic and Granular Flow, June 22-24, 2009, Shanghai, China.

Dr W M Yan joined the Department of Civil Engineering as Assistant Professor in July 2009. He received his BEng, MPhil and PhD degrees from the Hong Kong University of Science and Technology in 1996, 1999 and 2003, respectively. He then worked as a Postdoctoral Fellow at the same university for 2 years, before a short stay at the Technical University of Hamburg-Harburg, Germany as a Visiting Scholar. Prior to joining HKU, he spent 4 years at the University of Macau as an Assistant Professor. His major research interests include experimental investigation and constitutive modelling of geomaterials, numerical modelling of soil-structure interaction problems, and soil responses at the particulate level. Dr Yan’s master thesis was awarded the Best Master Thesis of the Year in 2000, presented by ASCE (Hong Kong Section).

Dr A T Yeung made an invited presentation on “流動生物認證儀在物業身管理上的應用” at the 「IT與物業管理」研討會：如何善用資訊科技·提升物業及設施管理服務質素?, organised by the Office of the Hon. Samson Tam, Hong Kong, on May 22, 2009.

Dr A T Yeung presented an invited lecture “Extension of the useful lives of constructed facilities: Green management of construction and demolition materials,” at the SOE HK Symposium 2009, the Society of Operations Engineers Hong Kong Region, Hong Kong, in June 2009.

DEPARTMENT OF COMPUTER SCIENCE

Prof T H Tse served as the Steering Committee Chair of the 9th International Conference on Quality Software (QSIC 2009) held in Jeju Island, South Korea from August 24 to 25, 2009.

Dr Lucas C K Hui, Director of the Center for Information Security and Cryptography (CISC) in the Department of Computer Science served as one of the panelists of the Hong Kong/Guangdong Modern Information Services Industry Co-operation and Development Forum on Cross-Boundary eCommerce Development held on July 10, 2009 at Cyberport, Hong Kong. The event was organized by the Office of the Government Chief Information Officer and was held right after the Fourth Plenary Meeting of the Hong Kong/Guangdong Expert Group on Co-operation in Informatisation.

Miss Huang Songbo, an MPhil student, has been selected for the 2009 Microsoft IT Student Exchange Program and will receive sponsorship from the Office of the Government Chief Information Officer under the “Sponsorship Scheme for IT Exchange Programme”. Miss Huang did a 3-month internship at the Microsoft R&D Centre in Beijing.

Four BEng(CS) students, Loi Wai Hong, Tong Chiu Man, Wu Ka Ki Leslie, and Yip Ling, together with Dr Vincent Lau attended the Apple Worldwide Developers Conference (WWDC09) from June 8 to 12, 2009 in San Francisco, USA. The four students were required to submit a project proposal to Apple for consideration before they were accepted as student attendees of the conference. This trip was made possible by the support from Apple.com and the Department of Computer Science.

DEPARTMENT OF COMPUTER SCIENCE

Infosys Technologies Limited has offered Mr Tong Liang-liang an internship in India from July 2009 for 2 months. Mr Tong is an MPhil student under the supervision of Prof F C M Lau. His area of research is Computer Architecture.

Microsoft (China) Co Ltd offered Mr Jiang Bo an Internship in

Beijing from May 20 to August 20, 2009. Mr Jiang is a PhD student in software testing under the supervision of Prof T H Tse. He received best paper awards in two consecutive years from the 32nd and 33rd Annual International Computer Software and Applications conferences (COMPSAC 2008 and 2009).

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

Dr G Chesi attended the European Control Conference in Budapest, Hungary from August 24 to 26, 2009 and the Asian Control Conference in Hong Kong from August 27 to 29, 2009.

Dr G Chesi has been invited by IEEE to give a talk on "Homogeneous Polynomial Forms for Robustness Analysis of Uncertain Systems" in Ottawa, Montreal, Trois Rivières, and Quebec City in Canada. The seminars were organized by the IEEE Sections of these cities and by Concordia University. The first talk was held in Ottawa on June 15, 2009.

Dr G Chesi has founded the Technical Committee on Systems with Uncertainty of the IEEE Control Systems Society, for which he has been appointed as Chair by the society.

Dr Wilton Fok, Dr Alfred Yu, Dr Philip Pong and Dr Y C Wu collaborated with the University of Electronics Science and Technology of China (UESTC) and jointly organized an interflow conference for the students from HKU and UESTC. There were 26 EEE students and 17 students from other Faculties attending the conference.

DEPARTMENT OF INDUSTRIAL AND MANUFACTURING SYSTEMS ENGINEERING

The 7th CIRP-Sponsored International Conference of Digital Enterprise Technology (DET2009) will be held at the HKU Campus from December 14 to 16, 2009. The event will be organized by Department of Industrial and Manufacturing Systems Engineering, The University of Hong Kong (HKU), and supported by a number of sister universities and professional bodies. Over 100 papers have been submitted from over 10

countries covering contemporary topics in logistics engineering, supply chain management, product design and manufacturing. The event will provide a forum for academia and industrialists to disseminate, to all branches industries and businesses, information and knowledge on the most recent and relevant innovations, theories and practices in electronic business and digital enterprise technology.

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