Nanotechnology propels Hong Kong's industrial transformation

The newly established HKUST Institute of Nanomaterials and Nanotechnology will develop multiple-application nanomaterials and technologies that will bring foundation industries upstream, stimulate economic growth, and help develop Hong Kong into a global hub for nano-innovation and manufacturing.

More on page 4
Forging Ahead in Times of Adversity

Prof Paul Ching-Wu Chu

The recent SARS outbreak posed yet another critical challenge to the people of Hong Kong. I am proud to see that the community has triumphed through concerted efforts and professionalism, as exemplified by the medical officers battling the epidemic. The incident has also shown that research and the dissemination of information play a key role in our society—two areas in which HKUST faculty and researchers have devoted their efforts and gained recognition.

New institute demonstrates research strengths

A number of HKUST faculty members have been granted prestigious awards or fellowships, all of which epitomize HKUST's accomplishments in basic research. I am also glad to note that we have made good progress on the midstream research front too. HKUST has successfully secured research grants from the Innovation and Technology Fund (ITF), which allows the University and its industry partners to develop new applications in online multimedia services as well as nanomaterials and nanotechnologies. The work will result in higher value-added products and services, thereby enhancing the competitiveness of industry and business in Hong Kong.

The Institute of Nanomaterials and Nanotechnology (INMT) has been established with the largest grant ever awarded to a university by the Innovation and Technology Commission. The total four-year budget of HK$101.6 million includes industrial contributions of HK$11.8 million. With the participation of over 20 local and international enterprises, the INMT aims to develop functional nanomaterials and nanotechnologies that will move Hong Kong's foundation industries up the value chain and pave the way for new industries to emerge. The wide application of nanomaterials means that most industries, if not all, will benefit. It makes good sense, therefore, to invest in nanotechnology today if we wish to participate in the exciting revolution to be brought about by this frontier technology.

Tackling financial constraints

Universities in Hong Kong are facing increasing financial constraints. A 10% budget cut for higher education has been proposed for 2004-5. Cumulative reductions in recurrent grants might amount to 28% in 2006-7, according to the latest information we have. Such massive reductions will have a serious impact on Hong Kong's higher education, especially on an up-and-coming young university such as HKUST. I, and the heads of the other local tertiary institutions, expressed our grave concerns in a recent letter to the Secretary-General of the University Grants Committee (UGC). The University will try to tackle these financial constraints by exploring all means, such as internal savings, fundraising and refocusing our goals, without losing sight of our vision. Thanks to the stringent measures taken over the last few years, we have succeeded in reducing 23% of the non-teaching staff establishment since 1997-8. We will continue to reduce expenditure on non-salary items, which has already been stretched to the limit, while striving to maintain academic quality and to minimize as much as possible the impact of a slashed budget on faculty and staff.

Tertiary institutions are being encouraged to step up their fundraising efforts and to capitalize on the HK$1 billion matching fund from the UGC. In the year starting from 1 July 2003, the UGC will first dispense HK$500 million to the higher education sector on a first-come-first-served basis. Competition for the fund is expected to be very keen. We are devising a series of fundraising initiatives to mobilize every member of the HKUST community. Backing from individuals and the private sector is vital, and I urge members of the public to lend their generous support to HKUST.

The University will continue to forge ahead despite the many challenges it faces. The knowledge that our scientists and scholars have amassed can be transformed into an energy that fuels Hong Kong's economic revival. To this end, we will continue to work closely with business, industry and the Government to contribute to Hong Kong's well being.
Engaging with Society in Times of Change

In the past 10 years, Hong Kong has embarked on the path of building international strengths in research with significant results. Notwithstanding the tough times that lie ahead, the momentum generated must be maintained. At the same time, we must focus our efforts on priority areas of research, engage with Hong Kong as a technological player within the Pearl River Delta, and prepare our students for the changing geopolitical landscape.

Basic and applied research

Hong Kong in general and HKUST in particular should not depart from the academic strength built up over the past decade, even if such research does not have a practical economic impact in the near term. The fundamental research carried out by our faculty and researchers provides the building blocks for the knowledge of the future. Top quality research also enables faculty to pass on to students the latest discoveries, which in turn adds value to Hong Kong’s graduates and increases their competitiveness.

Applied research is the critical midstream development path that drives fundamental research towards commercialization. This R&D process requires tremendous effort, so we must be selective in where we direct our energy and resources. Here we must focus on areas that offer academic excellence as well as economic impact to the region.

Electronics/IT is one such area that produces immediate impact. Our research strengths in software, communications, IC technology, among others, combined with the manufacturing base across the border, could see Hong Kong build a reputation as a regional center in these niche areas.

Advanced materials and biotechnology require longer-term development but these are areas in which Hong Kong has enormous potential to develop into a regional center. It is imperative that investment in these dynamic fields be sustained.

However, with limited industry support to develop and utilize new technology within the territory, we must look beyond our borders and tap into the manufacturing and technology base in the region.

Technology transfer

Budgetary constraints do not necessarily mean curtailed vision. With technology transfer on the agenda, we shall continue to expand our vision beyond publications, patents and licenses (which are undoubtedly important), and look at the people who lie at the heart of this movement of know-how, from universities out into the community.

Faculty start-ups and spin-offs are examples of what universities can do in technology transfer. However, because of their limited number, they will primarily serve as role models. It is Hong Kong’s graduates who will lead technology transfer and produce the major impact on the economy and society. For it is these students who will go out in large numbers, work in industries, gain experience in start-ups, forge connections and hopefully move on to become successful technology entrepreneurs.

Students must become more attuned to the Chinese Mainland because of the vast opportunities it holds, and we must be prepared to change our students’ outlook. This is especially important at a time when the local job market can no longer absorb Hong Kong graduates, making it necessary for them to compete for work opportunities in the Mainland and the region. To give students a headstart, we need to forge connections with enterprises outside Hong Kong where graduates can work and build their experience.

Openness to change

Stringent times demand idealism tempered by practical reality. Such times require continued support for Hong Kong’s drive towards future discoveries and focused development of high-impact fields; fairness and transparency in allocation of resources; and a re-orientation of our students: both to prepare them for a changing environment in terms of job skills, and to broaden their horizons beyond Hong Kong. Above all, we must give full play to Hong Kong’s greatest assets: initiative, openness to change, and willingness to engage.

Prof Roland Chin took office as HKUST's new Vice-President for Research and Development (VPRD) on 1 June. A long-serving member of the University, he started as a Professor of Computer Science in 1992 and served as Head of the Department from 1996 to 2001. He was then seconded to the Government's Applied Science and Technology Research Institute Inc. (ASTRI), where he was Vice President of Information Technology, before rejoining HKUST as VPRD.

Prof Chin received his PhD from the University of Missouri in 1979. For two years he had been a researcher at the NASA Goddard Space Flight Center in Maryland prior to joining the faculty of Electrical and Computer Engineering at the University of Wisconsin, Madison in 1981, subsequently becoming a Professor in 1989.

Prof Chin has contributed to HKUST as a teacher, researcher and promoter of technology development. In recent years, he has been actively involved in many major R&D initiatives at both University and Government levels. He has served on a number of Government committees and industry boards on education, research and technology development.
New Institute to Lead Nanotechnology Development

The nanotechnology revolution is upon us. Recently, HKUST took another step towards helping Hong Kong businesses and industries maximize the potential of this immense advance when it received HK$36.9 million from the Innovation and Technology Fund (ITF), and HK$36.3 million from industry, to establish the HKUST Institute of Nanomaterials and Nanotechnology (INMT).

“Our primary goal with the INMT will be the development of functional, multiple-application nanomaterials and technologies relevant to the economic growth of Hong Kong. This will be achieved by working with industries, and academic and research institutions, both in Hong Kong and worldwide,” said Prof Ka Ming Ng, Head of Chemical Engineering and Project Coordinator of the INMT.

Nanotechnology seeks to create and exploit materials and devices at the level of atom, molecule and supramolecular structure. Nanomaterials such as the world's smallest carbon nanotubes, synthesized by HKUST researchers in 2000, display a range of exciting and novel properties, for instance field emission and strength 20 times that of steel. The potential of these materials, according to Prof Ng, will impact every level of 21st century life, from construction to electronics to textiles.

By developing novel applications and taking them to market, Hong Kong businesses and industries will become key players in the nanotechnology and materials sector. Hong Kong's foundation industries in manufacturing, materials and electronics will be enhanced by producing higher value-added products and services, and new industries could be derived from the Institute's work.

International collaborations, technology transfer and the grooming of entrepreneurs and researchers at the INMT will also be important as Hong Kong establishes itself as a global hub for nano-innovation and manufacturing.

Focus areas

The new Institute will carry out critical midstream R&D and technology transfer in three primary areas:

- Eco-friendly microfuel cells—made from nanostructured materials for mobile electronic devices. These will be lighter and more efficient than standard lithium ion batteries, allowing users to benefit from the full potential of portable broadband technology. Such fuel cells would require no recharging and produce no hazardous waste at the end of their lifecycle.

- Nanoelectronics display units—excellent color-quality, low power displays applying state-of-the-art advances in nanotechnology, including nano-thickness organic light emitting diodes, will make great strides in a global market valued at US$50 billion annually.

- Integrated nanomaterial manufacturing—to facilitate the establishment of a nanotechnology-based manufacturing hub in Hong Kong and the Pearl River Delta. Environmentally friendly production technologies for high-yield, low-cost nanomaterials like carbon nanotubes will be developed for exploitation by local manufacturers.

A fourth area in environmental catalysts—which are already being developed at HKUST—will also be included.

"HKUST's expertise in nanoscience and nanotechnology is constantly growing," said Prof Ng. "We have excellent upstream research in the School of Science as exemplified by our Institute of Nano Science and Technology. And in the School of Engineering, we have strong midstream research in product and process design, which helps to take upstream research to a commercial product. Three of our nanotechnology research projects also received a total of HK$33 million from the ITF and HK$5.5 million from industry. These projects are now being coordinated by the INMT.

"Hong Kong clearly has the strengths and the foundations to develop its own thriving nanotechnology sector. To maximize the opportunities, we also need to collaborate with regional and international research institutions, enterprises and industries to bring Hong Kong to the forefront of the nano revolution," Prof Ng concluded.
**Nanotechnology Uncovers New Properties of Friction**

Researchers from HKUST’s Institute of Nano Science and Technology recently discovered, at nano\(^*\) level, novel properties of friction, bringing new understanding of this fundamental phenomenon of nature. The Department of Physics’ Dr Xu Dong Xiao, Associate Professor, Dr Ophelia K C Tsui, Assistant Professor, and Dr Qi Liang, Research Associate, together with colleagues at Zhejiang University, studied frictional properties of fullerene crystals with the aid of atomic force microscopy. They observed that adhesion plays an important role in friction at nano level, which is contrary to experience in the macroscopic scale.

“The discovery opens a window onto a whole new area of science—nanotribology—and will enable us to develop new processing technology at nano level,” said Dr Xiao.

Macroscopic theories hold that rolling reduces friction. In their experiment, the researchers used fullerene crystals as a sample, which exhibit free molecular rotation above -13°C. They measured the frictional coefficient of the crystals between room temperature (25°C) and below -13°C, where molecular rotations are drastically hindered. The results vary significantly to general surprise: the frictional coefficient of fullerene crystals remains unchanged below -13°C. Furthermore, considerable friction exists even without the application of a load due to increased adhesion.

Such groundbreaking discoveries were assisted by HKUST’s cutting-edge atomic force microscope (AFM), a high-precision piece of equipment with a laser device and a probe only dozens of nanometers in width. It can detect the tiniest interactions (including adhesion and friction) between the probe and the sample.

Despite their success, Dr Tsui and Dr Xiao are eager to move forward and study the frictional properties of a single molecule, when the AFM is further improved. This again demonstrates the relentless quest for excellence typical of HKUST researchers.

\(^*\) The nanometer is a measurement unit of length; 1 nanometer = 10\(^{-9}\) meter.

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**Coping through the Hard Times**

Most of us would agree that life seems particularly stressful during this period of economic uncertainty, epidemics and global conflict. For businesses and individuals alike, learning to cope with the ever-changing world has become part of a daily battle to survive.

For several years, the subject of effective coping has captured the attention of Assistant Professor of Social Science, Dr Cecilia Cheng.

Dr Cheng has undertaken a series of key studies in the area, including a project funded by the Research Grants Council entitled, “The Motivational Bases and Cognitive Methods of Coping”. The project, which analyzed a variety of stressful life transitions familiar to Hong Kong adults including examinations, transition from high school to university, first job, illness and marriage, enabled Dr Cheng to derive and test a new theory she calls “flexible coping”.

“Flexible coping is the ability to use different coping strategies to meet the specific needs of different stressful situations,” explains Dr Cheng. “By better understanding how psychological and situational factors influence coping behaviors, we have been able to design workshops that promote effective coping skills.”

Dr Cheng’s findings reveal that effective stress management may involve the reduction of inflexible thinking styles, rigid coping behaviors and low motivation to solve problems, as well as the seeking of alternatives if the existing coping strategies are ineffective. She is already implementing her therapeutic workshops in partnership with the Queen Mary Hospital and a local labor organization, providing the practical benefits of her work for those who are highly stressed, such as teachers and patients with chronic illnesses.

In the current climate of health-related stress, Dr Cheng has now begun the task of researching the psychosocial aspects of coping with SARS. In recognition of her significant and sustained contributions to the study of effective coping, the leading Journal of Personality and Social Psychology recently published her latest paper, “Cognitive and Motivational Processes Underlying Coping Flexibility: A Dual-Process Model” (Vol. 84, No.2, 425-438).
When Prof Otto Lin, Vice-President for Research and Development, arrived at HKUST in 1997, his mind was set on a far-reaching agenda: to establish a culture and infrastructure for research, development and technology transfer at the University, which would in turn become a model for the region and the nation.

"Hong Kong has played significant roles in the national development of China throughout the 20th century," Prof Lin said. "Returning to Chinese sovereignty gives Hong Kong an opportunity to help shape the future of China as the country undergoes monumental social and economic transformations."

Together with many HKUST colleagues, Prof Lin made speeches, wrote articles and participated in committees and panels promoting innovation and technology in Hong Kong. He was active in assisting the establishment of major technology infrastructure projects here, including the Applied Science and Technology Research Institute and the Hong Kong Science and Technology Parks.

He advocates a new vision and business model for Hong Kong to compete in the global knowledge-based economy. A key element is closer cooperation with the Pearl River Delta; another is focusing on high value-added segments provided by the overlapping manufacturing and service economies. He also promotes an innovation system that fosters interactions among universities, institutes, businesses and government to boost economic growth.

"Hong Kong has to move quickly. Inadequate commitment to change has delayed progress and placed Hong Kong in the shadow of fast movers like Shanghai, Shenzhen and Guangzhou," he said.

At HKUST, Prof Lin introduced a six-pronged R&D strategy: promote excellence in academic research; establish multidisciplinary programs; cultivate core strengths; enhance industrial links; nurture technology entrepreneurship; and develop programs of major institutional impact such as the Nansha IT Park. During his tenure, HKUST cultivated research in several emerging high-impact areas and established the infrastructure to promote technology transfer. The University has gained worldwide recognition in many research areas. Increased industrial collaboration and technology transfer have brought in nearly 15% of R&D funding from the private sector. By these indicators, HKUST compares favorably with leading US research universities.

"Our strategy focuses on our faculty within an integrated academic affairs and research and development framework. My job was to facilitate and enable faculty to do their work through adequate funding, good interaction, and under an environment of innovation," said Prof Lin. "Faculty, staff and students are the players; they are the stars."

Prof Lin retired at the end of May, but the impact he made as a facilitator and driver of change will continue to be felt. He now stays on as Senior Advisor to the President and Professor of Industrial Engineering and Engineering Management. He hopes to have more time for writing and nurturing new technologies and young entrepreneurs.

Prof Lin came to Hong Kong as a refugee in 1949; then moved to Taiwan and the US, earning his PhD at Columbia University. After 16 years of research and technology development work at DuPont, he returned to Taiwan in 1983 to join the Industrial Technology Research Institute as a Director and later as the President. He is known for contributing to the transformation of Taiwan from a labor intensive to technology-and innovation-based economy.

"Many friends said I was crazy to take a deep salary cut and return to a place under the threat of war," he said. "But, nothing can compare with the opportunity to contribute to my Motherland and the People, at that juncture of time."
Faculty Awarded Croucher Senior Research Fellowships

Prof Tong-Yi Zhang, Professor of Mechanical Engineering, and Prof Mingjie Zhang, Associate Professor of Biochemistry, were among five Hong Kong scholars who received this year’s Croucher Senior Research Fellowship awards on 27 March for their contributions in material science and biochemistry, respectively. Established in 1997, the Croucher Senior Research Fellowship scheme recognizes research achievements made by local scientists. Awarded are released from teaching and administrative duties for a year to concentrate on research.

The HKUST Students’ Union launched the “Healthy Life Campaign” in mid April, in which student ambassadors distributed pamphlets and stickers to promote positive thinking and a healthy lifestyle, and raised student awareness of SARS preventive measures.

To show their support to frontline medical officers battling SARS at the United Christian Hospital, the Student Social Service Society organized the “Unite our Support to United” campaign from 15 to 17 April. The event quickly garnered the University community’s support and collected over 800 heart-shaped messages of thanks and good wishes. The message board has since been displayed in the hospital lobby.
New Programs to Produce Skilled Professionals

HKUST is set to launch two new courses that will produce more of the talented professionals that businesses need for Hong Kong to remain competitive and successful in the knowledge economy: a four-year dual bachelor's degree in technology and management (TM), and a part-time two year master's degree in integrated circuit (IC) design engineering.

The TM course will leverage on the strengths of HKUST's School of Engineering and School of Business and Management, with students being trained in technology, business management, innovative thinking and entrepreneurship. Graduates will earn a BEng in their chosen disciplines and a BBA in General Business Management. Associate Deans and Program Co-Directors, Profs Chi Ming Chan and Kar Yan Tam, said: "In a knowledge-based society, a thorough understanding of engineering and technology, along with sound management skills, are essential. This program will develop all-round leaders who have a competitive edge in the international job market and who provide the skills needed by business and industry."

The MSc in IC Design Engineering aims to nurture much needed talent for the fast growing, multi-billion dollar semiconductor industry, in Hong Kong, the Chinese Mainland and the Asia-Pacific region. Uniquely, the program is being launched in partnership with the Shenzhen campus of Peking University, with teaching mainly being undertaken by HKUST faculty on both campuses.

HKUST is the only University in Hong Kong equipped with the expertise and facilities to provide training in IC design, analysis, microelectronic fabrication technology, testing and packaging. Said Dr Chi-Ying Tsui, Associate Professor of Electrical and Electronic Engineering and Program Director: "I have no doubt the professional knowledge and skills acquired by our future graduates on this exciting new program will be highly valued by the IC industry, not just here, but around the world."

Leadership Program Brings Global Perspective

In March students pursuing the new general education program, "Innovation and Leadership in the 21st Century", were privileged to attend lectures by two distinguished and internationally esteemed guests.

On 14 March, Ms Kerstin Leitner, Chief of the United Nations Development Program (UNDP) in China, delivered an address in which she considered whether or not China could still be termed "a developing country".

Using the United Nations' Millennium Development Goals as her yardstick, Ms Leitner highlighted China's developmental successes and shortcomings in areas including social responsibility, public health, education and the environment.

The lecture ended with students engaging the UNDP Chief in a stimulating question and answer session, in which Ms Leitner concluded that China is certainly progressing well down the road to development.

Top US scientist Dr David Ho visited HKUST on 21 March to deliver his address entitled: "The Global AIDS Crisis and Its Threat to China".

Renowned for devising the triple cocktail therapy for the treatment of AIDS, Dr Ho is founding Scientific Director and Chief Executive Officer (CEO) of the Aaron Diamond AIDS Research Center, and Irene Diamond Professor at The Rockefeller University.

The lecture provided insightful explanations of AIDS, its spread around the globe and Dr Ho’s development of the triple cocktail. During a lively debate, students also sought opinions and answers from the expert on a variety of issues, including the ethical question of whether pharmaceutical companies should provide cheap drugs to the third world.

The Innovation and Leadership program was conceived by University Council member Mr Ronnie Chan and President Prof Paul Ching-Wu Chu to expose students to real working life in both business and the community. Program Director and Professor of Social Science, Prof Alvin So, said: "I hope that after listening to the mentors, students will broaden their horizons, sharpen their critical thinking skills, and raise their aspirations to become the leaders of tomorrow."

Other distinguished speakers during the program included Mr Philip Chen, CEO of Cathay Pacific Airways, Mr Vincent Cheng, Vice Chairman and Chief Executive of Hang Seng Bank, and internationally renowned jeweler designer, Ms Kai Yin Lo.
Faculty and Students Promote Science Education in Schools

HKUST's commitment to serving the community is reflected in its wide-ranging outreach programs, in which faculty and students both play an important role. One example of their work includes the science education initiatives for students at secondary and primary levels.

Programs for gifted secondary students

The Saturday School for Gifted Students in Mathematics, run in association with the Government's Education and Manpower Bureau (EMB), began to nurture academically gifted students in mathematics from Forms 3 to 7 in 2002. The program has recently accepted its latest batch of 100 students from schools across Hong Kong. For 16 weeks participants will attend classes conducted by faculty from the Department of Mathematics. President Prof Paul Ching-Wu Chu said of the scheme: "Collaborating with the EMB on this gifted program is in line with our founding mission, and just one of the many ways in which we fulfill our commitment to Hong Kong."

This year, the Department of Physics will also run a similar program and coach secondary school students with the aim of entering next year's International Physics Olympiad, to be held in Seoul. The Department organized the first Hong Kong Physics Olympiad jointly with the EMB and the Hong Kong Physics Society on 25 May, to select 30 budding physicists for training.

Since September 2000, the HKUST Cyber University (CyberU) has provided high achieving secondary school students with access to university courses in mathematics, physics and computer science via the Internet, allowing students to earn credits towards their future university degree programs. More than 400 students from some 80 schools have benefited from CyberU. Said Prof T C Pong, Associate Vice-President for Academic Affairs and Program Coordinator: "CyberU provides a stimulating environment for academically gifted and talented students to excel and develop their potentials. It offers a more challenging educational setting to stimulate students' interest and motivation in learning, and at the same time allows more capable students to get a headstart in university education."

CyberU will offer a range of computer science and physics courses this summer—visit http://cyberu.ust.hk for details.

Motivated by the enthusiasm of their professors, members of the Mathematics Students Society (MSS), Yeuk-Hei Lam said: "Our outreach program this term will show that everyone at HKUST is playing a full role in the community, especially at this time when we could easily give up because of SARS. We're very happy to be able to do something in return for Hong Kong."

Fun ways to learn science at primary level

As well as the annual, eagerly anticipated summer science camps for secondary school students, HKUST faculty also design and run fun programs for primary school children, such as the Mathematics Day Camp and the Junior Science Camps, aimed at developing children's creativity and curiosity for science subjects. Faculty have also designed the Educational Development Program website (www.edp.ust.hk), which is full of resources and ideas, to help primary school teachers promote interesting methods in science education that stimulate and benefit younger students.

The approach has been so successful that the EMB is sending representatives to HKUST to undertake a six-month study of the University's innovative teaching methods for younger children.

Commenting on the quality and variety of HKUST's outreach programs, Prof Shiu-Yuen Cheng, Professor and Head of Mathematics, said: "Thanks to the supportive environment here at the University, faculty members and students can initiate many distinct programs, enhancing the quality of science education for students throughout Hong Kong."
International Art Project Swings by Campus

Hong Kong has been selected to represent its time zone in an international high-tech media art project. On 3 March, Austrian concept and media artist Hofstetter Kurt visited HKUST to unveil his latest “Time-Eye” installation, part of a work-in-progress known as “Sunpendulum”. Sunpendulum is a project of truly international proportions. It entails the installation of “Time Eye” video cameras in 12 different time zones around the world. Each camera will capture the chronological passage of time and sun, night and day, from its location. The image will then be transmitted over the Internet to be projected onto one of 12 television screens arranged in a circle and housed in a specially designed pavilion that contains no natural light.

Explaining the concept Mr Kurt said: “A sunclock is being created. With the rotation of the Earth, the sunlight is moving within the circle of the television screens. In the inner circle day and night can be experienced in paral- els at the same time.”

Time Eyes have already been installed in eight countries, including the US, Mexico, Bermuda, Egypt, Portugal and the United Arab Emirates. “The project is multidisciplinary and multinational,” Mr Kurt said. “We’re working to build an academic network that crosses borders and stimulates cross-cultural exchange. So when we decided to position a Time Eye in Hong Kong, HKUST was the natural place to come for assistance.”

At the ceremony to launch the HKUST Time Eye, President Prof Paul Ching-Wu Chu welcomed Mr Kurt and the other distinguished guests, including the Austrian Consul General to Hong Kong, Dr Brigitta Blaha-Silva, and the Head of the Austrian National Tourist Office in Beijing, Mr Josef Stockinger.

Prof Otto Lin, outgoing Vice-President for Research and Development, said: “The University is proud to take part in the Sunpendulum project, which is helping to put Hong Kong on the world’s innovative and high-tech media art scene.”

Customized Executive Education Programs Best in Region

HKUST’s School of Business and Management (SBM) recorded another success in May when the Financial Times (FT) named it the best provider of customized executive education programs in the Asia-Pacific region.

Overall, the FT ranked HKUST 28th in the world for the quality of its tailored executive education programs, ahead of other internationally renowned institutions like UC Berkeley (34th), the University of Chicago (37th) and the University of Toronto (49th).

This was the first time that a Hong Kong business school had ever appeared in these prestigious FT rankings, which are calculated by analyzing the opinions of senior managers at sponsoring companies, and by evaluating the strengths and diversity of the schools under consideration.

The FT noted that the faculty diversity of the SBM was the fifth best in the world. The School’s customized executive education programs also scored highly in the categories of “value for money” and “future use”, indicating that organizations will continue to look towards HKUST for its expertise in training their employees.

“Executive education programs provide a direct conduit for the transfer of management knowledge from our best faculty to participants who are typically leaders in the business and public sectors,” commented Prof K C Chan, Dean of Business and Management. “The good news is that Hong Kong based organizations need look no further than home for a business school that can provide world-class executive education for their valued employees,” Prof Chan concluded.

The FT Survey was conducted in 2002, when HKUST provided customized executive education programs to 20 multinationals and non-profit organizations from around the world, including North America, Europe and the Chinese Mainland.

Only three other schools from the region made the FT rankings. They were the Australian Graduate School of Management (33rd), Mt Eliza Business School (45th) and the China Europe International Business School (50th).

This latest accolade follows the FT’s January publication of its MBA league tables, in which HKUST was also ranked top in Asia Pacific.
We Need Your Support

As a young and growing university, HKUST is facing unprecedented challenges brought on by the Government's proposed funding cuts to higher education in 2004-7 due to financial constraints. The University urgently needs to develop private funding sources to maintain and advance its excellence in research and teaching, and to continue to nurture the talent necessary for a knowledge-based society.

The University Grants Committee (UGC) recently established a HK$1 billion matching fund scheme for the higher education sector, which promises to match every dollar raised by the institutions under the scheme. This is a great opportunity for HKUST to develop its private support base. The University calls upon members of the wider community to lend their generous support in four areas crucial to our development:

Maintain research excellence

It takes a sustained effort to achieve research excellence of a world standard. HKUST has already established an edge in many research areas, including nanoscience and nanotechnology, biotechnology, logistics, environmental sciences, and IC design and electronic packaging. These areas are in line with Hong Kong's new economy, promising wide applications and powerful impact.

How you can help:

• Donate to a research development fund for new faculty to provide resources for laboratories to be fitted out and equipment to be purchased, thus enabling new recruits to strengthen their research capabilities in an internationally competitive environment.
• Give to a facility development fund for existing faculty to provide resources to replace and upgrade out-of-date or obsolete facilities and equipment, thereby maintaining the University's cutting-edge standards.

Attract and retain the best faculty

Outstanding faculty is our primary strength and key to success. In recruiting the best faculty, HKUST is competing with leading institutions around the world and must therefore be able to offer competitive remuneration packages.

How you can help:

• Sponsor chair professorships to help attract first-rate international scholars to join HKUST, thereby enhancing our academic and research strengths.
• Support faculty fellowships to provide salary enhancements for recruiting and retaining outstanding faculty, particularly the young rising stars.

Attract and nurture best talent

HKUST's innovative academic programs are designed to meet the needs of our society. To maximize the benefits of these quality programs we need to recruit the best students.

How you can help:

• Establish scholarships to help attract more outstanding secondary school students to enroll at HKUST.

Further internationalize the student body

The more internationalized the campus becomes, the more it will benefit our students and Hong Kong at large. Through increased interactions with students from different cultural backgrounds, HKUST students will gain the exposure and communication skills vital in the global economy. Hong Kong can also take advantage of a more international student body by retaining outstanding non-local graduates in its workforce.

How you can help:

• Set up scholarships for international students to help attract quality candidates from different parts of the world to study at HKUST.
• Fund exchange scholarships to create more opportunities for HKUST students to participate in exchange programs at top-notch universities worldwide.

Prof Paul Ching-Wu Chu, HKUST President, said, "The UGC matching fund offers a good opportunity for HKUST to partner with members of the wider community. With their generous support, we will continue to fulfill the University's founding mission: to advance learning and knowledge through teaching and research, and to assist in the economic and social development of Hong Kong."

If you would like to support HKUST through the UGC matching fund, please contact the Fundraising Unit of the Office of University Development and Public Affairs at (852) 2358-6109 or email donation@ust.hk. For general donation information, please visit www.ust.hk/en/ai/index2.html
Croucher Trustees Visit Campus

On 28 March, HKUST President Prof Paul Ching-Wu Chu welcomed Croucher Foundation Chairman Prof Y W Kan, Vice-Chairman Mr Ian MacCallum, and other trustees to campus. During their visit the party attended briefings at the Microelectronics Fabrication Facility, Biotecnology Research Institute, and Institute of Nano Science and Technology. The Croucher Foundation is widely recognized for its promotion of standards in the natural sciences, technology and medicine in Hong Kong through awards and grants to scientists who serve the community. This year, two HKUST faculty, Prof Tong-Yi Zhang, Professor of Mechanical Engineering, and Prof Mingjie Zhang, Associate Professor of Biochemistry, were awarded Croucher Senior Research Fellowships.

Y K Pao Distinguished Lecture

The School of Humanities and Social Science held its latest Y K Pao Distinguished Lecture on 21 March. Over 50 attendees were eager to hear Prof Leo Ou-Fan Lee, Professor of Chinese Literature at Harvard University and HKUST Adjunct Professor in the Division of Humanities, deliver an engaging address entitled: "Reading the 'Modern Classics' in the 'Post-modern' Age". Structuring the lecture around his interpretation of Calvino's essay "Why Read the Classics?", Prof Lee referred to the works of early 20th century greats including Eileen Chang, Kafka, Lu Xun and Joyce, seeking to present a rereading of their literature in a cross-cultural context. Prof Lee was awarded an Honorary Doctorate in Humanities by HKUST in 2001.

SARS Talks Expand Knowledge

The University's Education Development Program recently co-organized a two-part series of public presentations and discussions about SARS, aided by the locally based think tank Civic Exchange and the Hong Kong Science Museum. The talks took place at the museum on 31 May and 7 June, and were attended by close to 100 guests each. A presenting team of professors from HKUST, comprising experts in air quality, physics, civil and mechanical engineering, biology, information and systems management, and economics, led the debate. They explained a variety of SARS-related issues to the public to broaden their understanding of the disease. These included whether facemasks offer an effective defense against the coronavirus, how to calculate the death rate, the chimney effect that precipitates the spread of the virus in buildings and the impact SARS has had on society from an economic point of view.

Legends of Hong Kong Exhibition

An innovative and mentally invigorating arts event took place at HKUST between 5 and 15 May, when the Shu Ning Presentation Unit introduced "Legends of Hong Kong", a series of drama presentations, workshops and installations that stimulated and challenged the public’s perspectives on, and perceptions of, Hong Kong. Both SARS and the workings of Government came under scrutiny during the exhibition. While the works addressed many issues pertinent to modern society, they also reinforced Hong Kong history and a sense of belonging in the minds of the visitor, particularly the photo installation of everyday citizens going about their normal lives. The exhibition was co-presented by the HKUST Center for the Arts and the Leisure and Cultural Services Department as part of the latter's Community Cultural Ambassador Scheme, 2003.

Young Physicists Compete at First Hong Kong Olympiad

The first Hong Kong Physics Olympiad (HKPO) took place at HKUST on 25 May. Over 400 budding secondary school physicists from Forms 4 to 6 attended the event, which was jointly organized by the University, the Education and Manpower Bureau, and the Hong Kong Physics Society. The HKPO was both a fun and educational community activity, in which over 90 schools participated. The 30 best young physicists will receive coaching from HKUST faculty for the next 12 months, and a select few of these students will be chosen to represent Hong Kong at the International Physics Olympiad 2004, to be held in Seoul.