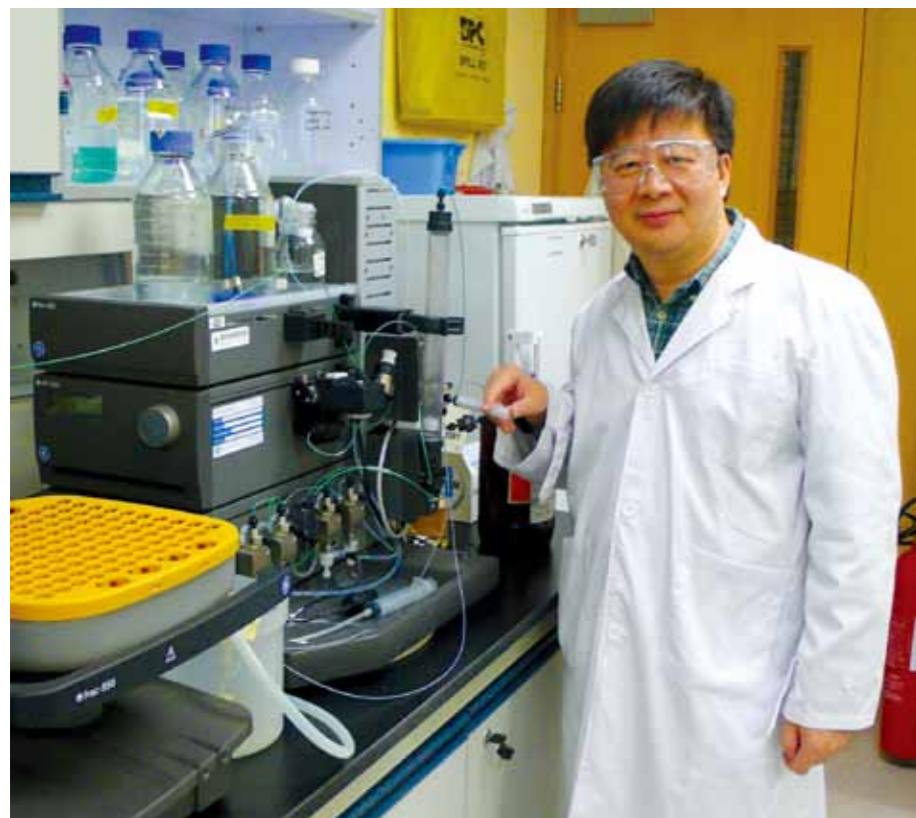


## Total synthesis of anti-cancer marine product achieved 全合成抗癌海洋產物



Dr Ye Tao  
葉濤博士

在理大應用生物及化學科技學系副教授葉濤博士的帶領下，理大聯同北京大學深圳研究生院的研究人員，成功研究出以全合成方法獲取抗癌海洋天然產物 Grassyseptolide。它是從海洋細菌中分離出的一種天然產物，也是一種大有可為的抗癌化合物，這重大突破將有助進一步優化這種天然產物，使之成為抗癌藥物。

要從天然源頭提取 Grassyseptolide 並不容易，研究團隊利用有十七步反應的全合成方法成功提取 Grassyseptolide。研究團隊要面對的挑戰包括：構築 31 元環的大環內酯，並在大環內引入兩個小的雜環結構——噻唑啉（含有硫和氮雜原子的五元環結構）。研究人員利用化學動力學上更有利的關環前體進行關環反應，並在全合成的後期引入噻唑啉雜環，以避免噻唑啉的特殊不穩定性引起副反應。

這研究成果不但刊載於國際權威的《Chemical Communications》期刊（2010 年第 46 期 40 卷），更獲《自然（中國版）》重點報導。

Under the leadership of Dr Ye Tao, Associate Professor of PolyU's Department of Applied Biology and Chemical Technology, the concerted efforts of researchers from both PolyU and Peking University's Shenzhen Graduate School have led to the first total synthesis of a natural marine product with anti-cancer properties: grassyseptolide. This breakthrough paves the way for the further development of anti-cancer drugs from grassyseptolide – a compound isolated from marine bacteria – which has emerged as a promising anti-cancer agent.

It is difficult to obtain grassyseptolide from natural sources, but the research team made its construction possible through a 17-step total chemical synthesis process. The team faced significant challenges in forming the 31-member ring of grassyseptolide and then introducing the two smaller thiazoline heterocycles – five-member rings containing sulphur and nitrogen – into that ring. The researchers constructed the 31-member macrocycle via a precursor with more favourable cyclization kinetics, and then introduced the thiazoline heterocycles at a later stage of synthesis to prevent them from undergoing side reactions.

This novel breakthrough has been reported in the authoritative *Chemical Communications* (Issue 40, Volume 46, 2010) and has been highlighted by *Nature China*.

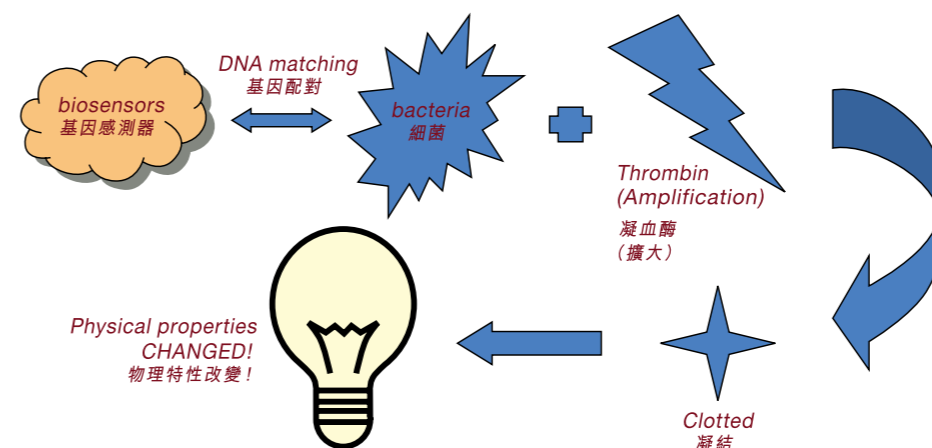
## Biosensor provides rapid virus field tests 基因感測器即場快速測試病毒

Prof. Samuel Lo, Associate Head of the Department of Applied Biology and Chemical Technology, and Dr Derek Or, Associate Professor of the Department of Electrical Engineering, have jointly developed a Portable Real-time DNA Biosensor. The device is designed to perform speedy in situ DNA tests for bio-defence and health surveillance purposes in areas suspected to be contaminated with pathogens and/or undesirable microbes.

Unlike conventional laboratory tests that take at least one or two days, this hand-held, battery-operated and fully automated biosensor is built upon a novel DNA-based bio-chemo-physical conversion method. It is able to detect harmful bacteria, such as *E. coli*, salmonella and staphylococcus, on site within 30 minutes. It can be adapted to cover such deadly viruses as SARS, H5N1 flu and swine flu viruses in future. It can also be re-designed to monitor possible biological attack from anthrax, smallpox and cholera etc.

Comprising a reaction chamber, an ultrasound core and an electronic power board, the new biosensor can test for the presence of a specific pathogen in water and air samples by recognizing the existence of its DNA. When this pathogen is added to the reaction chamber, the further addition of both specific primer-linked thrombin and fibrinogen triggers an innovative molecular bio-chemical reaction. In the case of a DNA primer match, the enzyme will convert fibrinogen into a lump of visible gel that blocks the transmission of ultrasound signals through the reaction chamber. A drop in the ultrasound reading is then a strong indicator of the presence of the target pathogen in the sample.

This invention won a Gold Award at the 39th International Exhibition of Inventions in Geneva, Switzerland.



Methodology of the biosensor  
感測器的運作概念



Prof. Samuel Lo and the biosensor device  
盧俊立教授與便攜式基因即時感測器

應用生物學及化學科技學系副系主任盧俊立教授與電機工程學系副教授柯少榮博士，聯合開發了一個便攜式基因即時感測器。這儀器可在懷疑被病原體和/或不良微生物感染的地方，快速地進行實地基因測試，因而適用於生物防禦及健康監管的範疇。

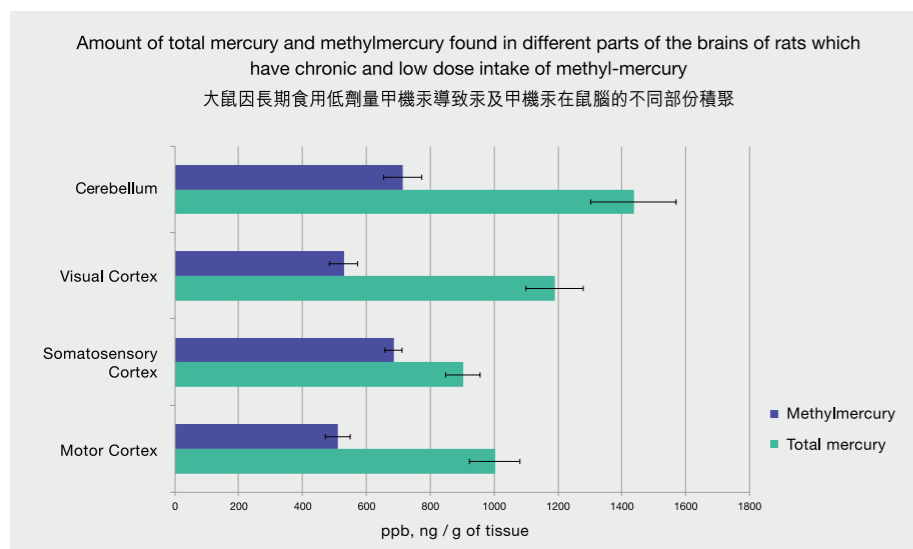
傳統實驗室式的基因測試需時最少一至兩天，但這便攜式、電池驅動的全自動基因感測器，採用全新以基因為基礎的化物理轉換方法，可於三十分鐘內實地檢測有害細菌包括：大腸桿菌、沙門氏菌或金黃葡萄球菌。未來，這儀器更可偵測如沙士、H5N1 及豬流感病毒等致命細菌。它還可被改裝以偵測來自炭疽熱、天花、霍亂等的生化武器襲擊。

這感測器包括一個反應室、超聲波核心及電源板。測試時，只需把樣本放於水或空氣中，再放進反應室內，再加入預設病原體相聯的凝血酶和纖維蛋白原，從而引發出創新的分子生化反應。如果測試的細菌與預設之病原體符合，酶就會把纖維蛋白原變成肉眼可見的凝膠塊，並會從反應室中阻擋超聲波訊號的傳遞，因此只要接收的超聲波讀數下降，即表示該特定病原體的基因有很大可能存在。

這項發明在第三十九屆瑞士日內瓦國際發明展中獲得金獎。

# Chronic exposure to methyl-mercury increases risk of neurodegenerative disease

## 長期接觸「甲基汞」增患神經退化病風險



The research team led by Prof. Samuel Lo, Associate Head of the Department of Applied Biology and Chemical Technology, recently discovered that chronic exposure to low-dose methyl-mercury, an environmental contaminant commonly found in seafood, may increase the risk of developing neurodegenerative disease.

In their study of rats chronically exposed to low doses of methyl-mercury, the researchers concluded that the cerebellum accumulates the largest amount of mercury, followed by the visual cortex, motor cortex and somatosensory cortex. Another important finding of this study was that in addition to methyl-mercury, the brain also accumulates other forms of mercury. In cases of acute mercury poisoning, such as that seen in Minamata disease, the neuro-sensory pathway seems to be affected first. The researchers employed advanced proteomic techniques to investigate protein expression in the somatosensory cortices of rats intoxicated with low-dose methyl-mercury. They found the expression of 104 out of 973 proteins to decrease by at least 50% after exposure to mercury contaminants.

Among these down-regulated proteins, 18% were found to be related to the cytoskeleton, 26% to energy metabolism, 18% to protein metabolism, and 20% to neurotransmitter release and signal transduction. The combined effects of these down-regulated proteins appear to suppress normal neuronal functions to an enormous degree, including the ability to repair the cerebrum itself. These results led the researchers to the conclusion that chronic exposure to low-dose methyl-mercury may increase the risk of developing neurodegenerative disease.



Prof. Samuel Lo 盧俊立教授

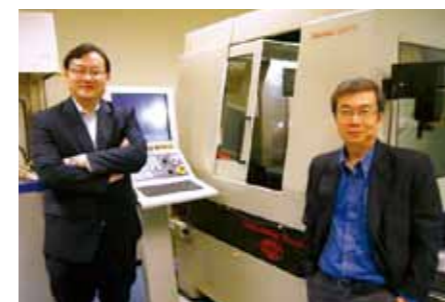
最近，應用生物學及化學科技學系副系主任盧俊立教授與其研究小組，發現長期接觸低劑量「甲基汞」（海產食品中常見的水銀污染物），可能會增加患上神經退化疾病的風險。

研究人員讓大鼠長期接觸低劑量的「甲基汞」後，發現大鼠小腦中積聚的水銀含量最高，其次是視覺皮層、運動皮層和體感皮層。研究又發現，除「甲基汞」外，大腦還積聚了其他形態的水銀。當出現如水俣病等急性水銀中毒時，神經傳送的功能會最先受到影響。研究人員採用先進的蛋白質組學檢測技術，分析大鼠在長期服食低劑量的「甲基汞」後，腦部體感皮層的蛋白質表達情況。結果顯示，在九百七十三種蛋白質中，一百零四種的功能會因大鼠長期食用低劑量的「甲基汞」而減退至少百分之五十。

在這些受到影響的蛋白質中，有百分之十八是與細胞骨架相關的，百分之二十六與能量代謝酶相關，百分之十八與蛋白質代謝相關，百分之二十與神經遞質釋放和訊息傳遞相關。這些受影響的蛋白質，會大大抑制神經元的正常運作，包括大腦的復原能力也會受到影響。因此，長期接觸低劑量「甲基汞」可能會增加患上神經退化疾病的風險。

# Research advances ultra-precision machining technology

## 提升超精密加工技術水平



Dr Benny Cheung (left) and Prof. W.B. Lee 張志輝博士(左)及李榮彬教授

The research efforts of two PolyU scientists in the modelling and characterization of nano-surface generation in ultra-precision machining have been recognized with a Natural Science Award (Second Class), conferred by the Ministry of Education of China as part of the Higher Education Outstanding Scientific Research Output Awards 2010. The two scientists, both from the Department of Industrial and Systems Engineering, are Dr Benny C.F. Cheung (Principal Investigator), Associate Professor, and Prof. W.B. Lee (Co-investigator), Chair Professor.

There has been growing demand in recent years for high-precision components with a nanometric surface finish. Such components are widely used in a variety of high-tech industries, including advanced optics, telecommunications, biomedical science and aerospace technology. Because the quality of the machined surface is critical to the functional performance of high-precision components, the process of nano-surface generation has attracted significant research interest.

In many industrial applications, the achievement of a super mirror surface finish at the nano-scale via Single Point Diamond Turning (SPDT) remains highly dependent on the experience and skill of the machine operator. Optimum surface quality is achieved through an expensive trial and error approach whenever new materials or machine tools are introduced.

The machining of a super mirror surface at the nano-scale demands research into novel nano-surface generation modelling and characterization, particularly if the cutting process is to become more predictable and cost-effective. The research team has conducted extensive theoretical and experimental research investigating the factors that affect nano-surface generation and its mechanisms and, accordingly, has developed a number of novel surface topography models and surface characterization methods.

The research results not only allow a better understanding of the theory of nano-surface generation mechanisms, but also provide important means for optimizing the quality of machined surfaces at the nano-scale. They thus make a significant contribution to the advancement of ultra-precision machining technology and its applications.

Recognizing PolyU's research achievement in ultra-precision machining technology, the Ministry of Science and Technology of China approved the University's establishment of a State Key Laboratory in Ultra-precision Machining Technology in 2009.

兩名理大科學家在「超精密加工中納米表面生成建模與分析」方面的研究成果，獲得國家教育部嘉許，頒授二零一零年度「高等學校科學研究優秀成果獎」—自然科學獎(二等獎)。他們是工業及系統工程學系副教授張志輝博士(首席研究員)及講座教授李榮彬教授(研究員)。

近年，業界對表面達納米程度的高精度零件的需求增加。這些零件廣應用於不同的高新科技工業，如先進光學、電訊、生物醫學及航天科技等。由於表面質量對高精度零件的性能有關鍵性的影響，所以納米表面的形成過程一直都是研究熱點。

在許多工業應用中，大多仍依賴加工人員的經驗及技巧，以單點金剛石車削(SPDT)技術形成納米程度的超鏡表面。對於切削新材料或採用新的加工刀具時，就需要以昂貴的方法不斷嘗試才能獲得最佳表面質量。

要形成具納米表面光潔度的超鏡表面，這需要對納米表面的形成機理進行建模與定量分析研究，從而使切削過程更具可預測性和成本效益。研究隊伍進行了大量理論研究及實驗工作，研究影響納米表面形成的因素及其機理。研究人員成功開發了多個表面形貌預測模型及表面特徵分析方法。

研究成果不僅有助於加深理解納米表面形成的機理，更提供了重要的方法以優化納米表面的加工質量，大大推動超精密加工技術的發展及應用。

理大在超精密加工技術方面的研究成就備受肯定，於二零零九年獲國家科學技術部批准成立「超精密加工技術國家重點實驗室」。

## Non-intrusive retinal imaging system 非侵入式視網膜圖像系統



Prof. Jane You Jia  
尤佳教授

電子計算學系尤佳教授研發的嶄新視網膜圖像系統，可以利用計算機輔助進行非侵入式糖尿病視網膜病變檢測和監控，同時保障病人的私隱資料。

該系統的特色與優點包括：

- 獨特的光學設計大大改善新型眼底相機的照明歸一化和位置對準
- 通過多特徵提取和由粗到細的病變檢測，以層次化方法對視網膜圖像進行有效分析
- 基於小波的無損數據嵌入新方案有助提高信息安全和隱私保護

此系統能有效地監護糖尿病病情，並具廣泛的應用性和很高的發展潛力，包括：

- 新型有效的視網膜圖像分析軟件與高性能眼底相機相結合，具有廣泛的臨床應用，不僅眼科醫生可應用於對眼睛的護理，而且其他醫療專家也可用於包括衛生保健和遠程醫療等各類普通醫療服務
- 無損數據嵌入的新技術將會對資訊科技的應用，包括多媒體和資訊安全等，有重大貢獻。

這項新發明於第三十九屆瑞士日內瓦國際發明展中，奪得評審團特別嘉許金獎，以及羅馬尼亞克盧日納波卡科技大學一優異發明獎。此外，它亦於二零零九年國際在線視網膜病變檢測挑戰賽中獲得第二名。◆

Developed by Prof. Jane You Jia of the Department of Computing, the novel Retinal Imaging System performs computer-aided, non-intrusive diabetic retinopathy (DR) screening and monitoring and affords privacy protection.

The special features and advantages of the system include:

- a special optical design for a new fundus camera model that allows lighting normalization and position alignment;
- a hierarchical approach to retinal image analysis via multiple feature extraction and coarse-to-fine lesion detection; and
- a wavelet-based scheme for lossless data embedding to facilitate information security and privacy protection.

The system demonstrates effective diabetic care, and has excellent potential for widespread applications, as described in the following.

- The new effective retinal image analysis software in conjunction with the high-performance fundus camera has widespread clinical applications, not only by ophthalmologists in eye care, but also by other medical specialists in the provision of general health services, including telemedicine.
- The new algorithms for lossless data embedding will make a significant contribution to information technology applications, ranging from multimedia to information security.

This innovation won a Gold Award with the Congratulations of the Jury at the 39th International Exhibition of Inventions in Geneva, Switzerland. It also took Second Place in the SPIE Medical Imaging 2009 International Competition – Retinopathy Online Challenge.

## Non-interfering respiration monitoring system 不受干擾的呼吸監察系統

Prof. Tao Xiao-ming, Head and Chair Professor of Textile Technology at the Institute of Textiles and Clothing, has developed a device called O-breath, which accurately monitors vital signs in clinical settings, including Nuclear Magnetic Resonance Imaging (NMRI) rooms, without interfering with medical equipment.

O-breath is a wearable photonic strain sensing system comprising a textile belt integrated with polymeric optical fibre sensors, and is designed to detect repeated large deformations. The central fabric-based strain sensor consists of three essential components, namely, an elastic textile fabric, a series of looped polymer optical fibres on which specially designed v-grooves are made by laser cutting, and a unique joint structure that facilitates the deformation

mode required by the v-groove optical fibres. The light transmission power of the integrated polymer optical fibre is measured during deformation.

The O-breath fabric optical sensing device is immune to electromagnetic interference. It features a maximum working range up to 30% strain and a high degree of repeatability and low degree of hysteresis, which makes it ideal for use in such applications as NMRI and underwater respiration-rate monitoring. It also has great potential for applications in wearable electronics, robotics, healthcare and industrial engineering.

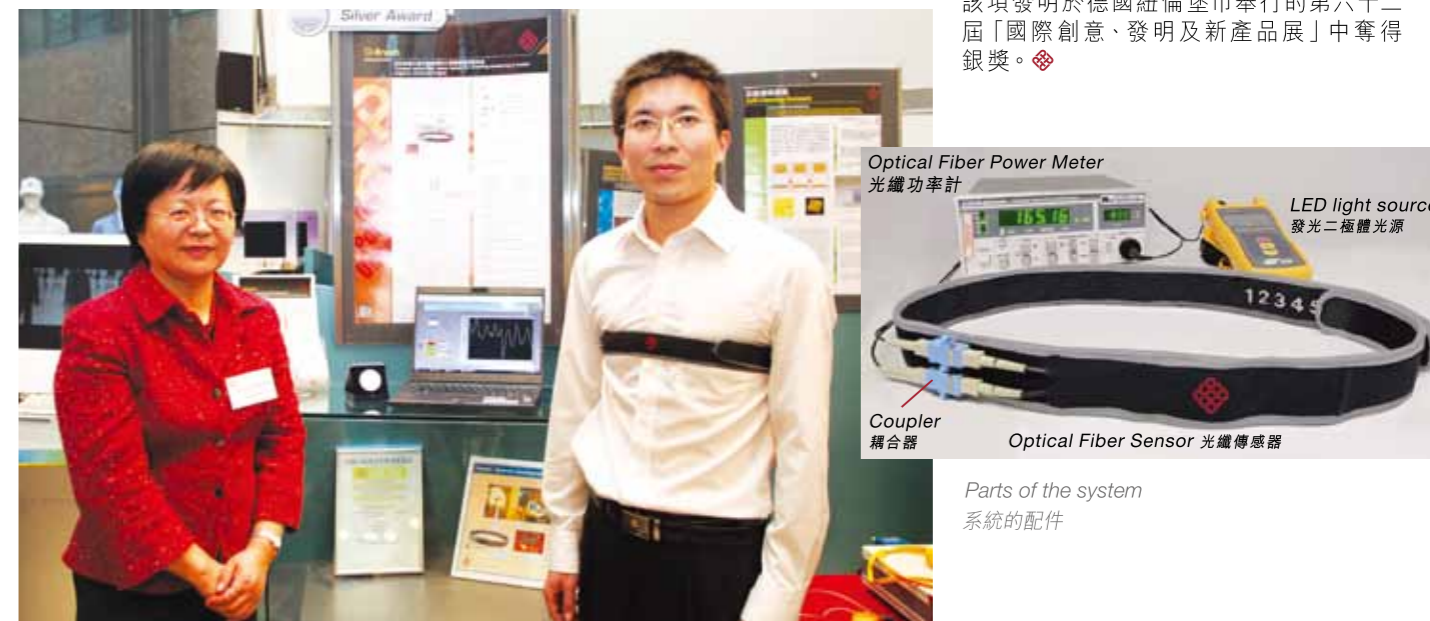
This novel device won a Silver Medal at the 62nd International Trade Fair Ideas – Inventions – New Products in Nuremberg, Germany.

紡織及製衣學系系主任兼講座教授陶肖明教授研發出可準確地監測生命跡像的O-breath呼吸監察系統，它不受醫療設備干擾，適用於醫院或診所環境中，包括核磁共振力共振掃描室。

O-breath是一套可穿戴的光子應變傳感裝置，其織帶裝置了聚合物光纖傳感器，以偵測重複大應變，它的中心部分是纖維應變傳感器。該傳感器由三個基本部分組成，包括：彈性織物、一束表面以激光切割成V型槽的聚合物光纖環，以及因應V槽光纖形狀應變的獨特結構。綜合聚合物光纖的輸出功率可在應變的過程中被量度。

這套纖維傳感器系統不受電磁干擾，其應變範圍百分率可高達百分之三十，而且擁有很高的重複性和很低的滯後性，所以非常適合應用於核磁共振成像和水底心率監測。其應用範圍更可擴展至可穿戴電子裝置、機械、醫療保健及工業工程等。

該項發明於德國紐倫堡市舉行的第六十二屆「國際創意、發明及新產品展」中奪得銀獎。◆



Prof. Tao Xiao-ming (left) has developed the wearable O-breath system  
陶肖明教授（左）研發可穿戴的O-breath系統



Parts of the system  
系統的配件

## Novel software raises standards of aero engine maintenance

### 新軟件提升航空發動機維修水平



From left: Mr Peter Hammond, Director, MSP; Mr Mick Brown, General Manager, Operations, HAESL; Ir Prof. Alex Wai, Vice President (Research Development), PolyU; Mr Tony Brown, Director, MSP; and Dr Stephen O'Brien, Director of IC, PolyU

左起：MSP 總監Peter Hammond先生、香港航空發動機維修服務有限公司總經理（工程事務）Mick Brown先生、理大副校長（科研發展）衛炳江教授、工程師、MSP 總監Tony Brown先生及理大工業中心總監區栢賢博士

Aero engine overhaul  
航空發動機檢修

In collaboration with Hong Kong Aero Engine Services Ltd (HAESL), engineers from PolyU's Industrial Centre (IC) have achieved a breakthrough in aero engine maintenance. By applying mathematics-based software developed by the UK's Metrology Software Products Ltd (MSP) to the multiple-axis machining of turbine blades, they have been able to greatly reduce the scrap rates in turbine blade repair.

Turbine blades are subjected to extreme temperatures in operating conditions, and some degree of deformation and distortion is inevitable over time. The components of these blades are expensive to replace. The new software involves the development of new five-axis probing techniques for machine tools, allowing automated part location to a very high degree of accuracy.

After months of exploration, development and modification by the IC, HAESL and MSP, the first batch of turbine blades applying the new software successfully passed the repair test at the IC and has been approved by HAESL for further production. HAESL now plans to use this software application in its turbine blade repair cell.

PolyU has received a generous donation of more than HK\$700,000 worth of software and systems from HAESL, and MSP has agreed to provide further support to the University, thus permitting the IC to further develop the multiple-axis machining of turbine blades for better aero engine maintenance. The software and the system is a powerful tool for developing advanced solutions to deal with the most difficult parts in a more accurate way and in shorter time than using traditional methods.

理大工業中心與香港航空發動機維修服務有限公司合作，把英國Metrology Software Products (MSP) 公司開發的一套計算軟件，應用在航空發動機渦輪葉片的維修上，大大減低渦輪葉片的次廢率。

航空發動機渦輪葉片在操作時常處於極端溫度狀態下，使用一段時間後便會出現變形和失真，而且葉片零件的價值高昂。由MSP開發的軟件涉及在數控加工中應用五軸探測頭定位技術，能自動及極準確地進行工件的位置檢測。

經過理大工業中心、香港航空發動機維修服務有限公司及MSP的專家多月來的研究、開發及修正，首批利用新軟件進行維修的渦輪葉片早前在工業中心完成維修測試後，已獲香港航空發動機維修服務有限公司認可，並進行後期加工。有關軟件將獲香港航空發動機維修服務有限公司應用於日後的發動機渦輪葉片維修上。

最近，理大獲香港航空發動機維修服務有限公司慷慨捐贈該套價值超過港幣七十萬元的軟件及系統，而MSP更會為大學提供進一步的協助，讓工業中心繼續發展航空發動機維修的多軸加工技術。有了這套強而有力的軟件及系統，理大將可開發先進技術，以比傳統更準確和高效的方法，處理難度甚高的部件加工。◆

## Female directors help to boost earnings quality

### 女性董事有助提升盈利品質



Profs. Judy Tsui (left) and Ferdinand Gul  
徐林倩麗教授（左）及辜飛南教授

Prof. Judy Tsui, PolyU's Vice President (International and Executive Education), Director of the Graduate School of Business and Chair Professor of Accounting, Prof. Ferdinand A. Gul, Chair Professor of Accounting and Corporate Governance, and Prof. Bin Srinidhi of the City University of Hong Kong, have co-conducted a research project entitled "Female Directors and Earnings Quality".

Drawing on a sample of US listed firms from 2001-2007, the researchers tested the relationship between female participation in corporate boards and earnings quality. They employed two measures of earnings quality. Their first measure is discretionary accruals quality which is the estimation error in accruals after controlling for current, past, and future cash flows, sales and long-term assets, and operating cycle and volatility in sales. Their second measure of earnings quality is the propensity of firms to beat earnings benchmarks by a small amount. When a firm's unmanaged earnings are just shy of earnings benchmarks such as prior-year earnings or analyst-forecasted earnings, managers have an incentive to manipulate earnings to meet/beat those benchmarks. These small increases (over the prior year's earnings) and

surprises (over analysts' forecasts) constitute earnings management that is unrelated to firm performance. The researchers also conducted additional tests using performance-adjusted discretionary current accruals.

The results of this research project reveal that female directors are willing to tackle tough issues that are often considered unpalatable by all-male boards. Female board participation is also found to lead to more effective board communication with investors. The presence of female directors in monitoring positions on audit and corporate governance committees also makes for more transparent reporting and earnings quality. There is evidence that boards with female directors promote greater vigilance over financial reporting, exhibit greater independence of thought and ensure a more rigorous monitoring process.

The study reveals a positive relationship between female participation in corporate boards and earnings quality. After controlling for endogeneity, firm-level board governance, and other known firm and industry characteristics, the study finds significantly higher earnings quality in firms with female board participation.

理大副校長（國際事務及行政教育）、工商管理研究院院長兼會計學講座教授徐林倩麗教授、會計學及企業管治講座教授辜飛南教授，以及香港城市大學Bin Srinidhi教授共同研究「女性董事與盈利品質」的課題。

研究人員使用了二零零一至二零零七年美國上市公司的資料，探討女性參與企業董事會和盈利品質之間的關係。他們從兩個方面衡量盈利品質。首先是可控應計項目，就是經控制即期、以往和未來現金流、銷售、長期資產、營運週期和銷售波動後的應計專案估計誤差。第二方面是企業小幅度超越盈利基準的傾向。企業的非管理盈利不及前一年盈利或者分析師預測盈利之類的盈利基準，管理層有意促使盈利達到或超越這些基準。這樣（與前一年盈利比較）的小幅度增長和（高出分析師預測的）小驚喜構成與企業績效不相關的盈利管理。研究人員更就業績調整的當期可控應計專案做了進一步的測驗。

研究顯示，女性董事樂於處理全男性董事會認為令人不快的棘手問題。女性的參與讓董事會更有效地與投資者溝通。此外，女性董事在核數委員會和公司治理委員會上擔當監察角色，有助促進報告的透明度和盈利品質。事實證明，有女性成員的董事會在財務報告方面警覺性較高、在思維方面表現得較獨立，而且監察程式更加嚴謹。

這項研究顯示女性參與企業董事會與盈利品質存在正相關。經控制內生因素、企業董事會管治和其他可知的企業和行業特性後，研究發現有女性成員參與的董事會的企業盈利品質明顯較高。◆

# Research explores effective healthcare communication

## 探索有效的醫療溝通方式



Prof. Diana Slade  
Diana Slade 教授

Prof. Christian M.I.M. Matthiessen  
Christian M.I.M. Matthiessen 教授

Dr E. Angela Chan  
陳胡安琪博士

Unsatisfactory communication during healthcare provision may lead to misdiagnosis, incorrect treatment and even death. To analyse and improve communication within the hospital Accident and Emergency (A&E) setting, Prof. Diana Slade of PolyU's Department of English and her team are collaborating with Tuen Mun Hospital in a pioneering research project entitled "Emergency communication: Improving the quality and safety of patient care through effective communication". This project will examine communication encounters between doctors/nurses and patients in the hospital's A&E Department to identify the features of successful and unsuccessful encounters.

In March this year, Prof. Christian M.I.M. Matthiessen, Chair Professor and Head of the Department of English, and Prof. Slade convened the First International Symposium and Roundtable on Healthcare Communication in Hong Kong. Organized by both the Department of English and the Faculty of Humanities, the event brought together researchers and healthcare practitioners from around the world to explore healthcare communication, identify ways to achieve high-quality patient-centred healthcare, and manage and minimize risk.

During the Symposium, Dr E. Angela Chan, Associate Head and Associate Professor, School of Nursing, presented the findings of a research project exploring nurse-patient communication. Focus group interviews were adopted in the study and thirty-nine registered nurses had participated. The findings reveal that, by integrating communication into routines as intended actions, nurses demonstrate that communication and relationships building with patients does not take extra time. In fact, good communication and relationships with patients help nurses to save time. Dr Chan concluded that nurses' communication behaviour is closely related to their perception of communication. There is a need for a paradigm shift in thinking that therapeutic communication requires extensive time. Additionally, nurses should recognize the value of short iterative interactions and chitchat as quality communication that allows them to better understand their patients and provide patient-centred care.

在提供醫療服務期間，不妥善的溝通可能導致錯誤診斷或治療，嚴重者甚至死亡。理大英文系Diana Slade教授及其團隊正與屯門醫院合作進行一項名為「緊急溝通：通過有效溝通改善病人護理的質素和安全程度」的先導計劃，探討在急症室環境下，醫生和護士與病人之間的信息互動與傳達，分析成功與不妥善的溝通案例，並尋求成功溝通的要素。

今年三月，英文系講座教授兼系主任Christian M.I.M. Matthiessen教授及Diana Slade教授，主持了由理大英文系及人文學院舉辦的香港首個國際醫療溝通研討會，吸引到來自世界各地研究醫療溝通的專家和醫護人員參與，共同探討醫療溝通的課題，以及如何達致高質素、並以病人為本的護理，繼而成功管理和減少風險。

研討會上，護理學院系主任兼副教授陳胡安琪博士發表一項研究報告，該研究旨在探討護士與病人之間的溝通。研究以小組訪問形式進行，共有三十九位註冊護士參與。結果顯示，護士如在日常護理程序中常爭取與病人溝通的機會，他們並不需要付出額外時間與病人溝通和建立關係，而雙方良好的溝通和關係反而有助護士節省時間。陳博士的結論是，護士的溝通態度與他們對溝通的觀念有著密切的關係，她建議護士在思維上作出一些調校，以提升他們的溝通意識，並理解治療性溝通其實無需付出很多時間。護士必須認識到，簡短而反覆的互動與傾談的價值，這些都是優質的溝通，有助他們了解病人，以及提供病人為本的護理。

# Winning Projects at the 39th International Exhibition of Inventions (Geneva, Switzerland, April 2011)

第三十九屆國際發明展中獲獎項目（瑞士日內瓦，二零一一年四月）

Award 獎項	Project 項目	Principal Investigator/Inventor 首席研究員/發明者	Department 學系
Gold Medal with the Congratulations of the Jury 評審團特別嘉許金獎	A Novel Optical Method for Retarding Myopia Progression 放緩近視增長的嶄新技術	Prof. To Chi-ho 杜嗣河教授	School of Optometry 眼科視光學院
Grand Prize of The Technical University of Cluj-Napoca - Romania 羅馬尼亞克盧日納波卡科技大學 - 特別大獎	(See Cover Story on P.1 見第1頁封面故事)		
Gold Medal with the Congratulations of the Jury 評審團特別嘉許金獎	An Innovative Secured Retinal Imaging System for Computer Aided Non-intrusive Diabetic Care 新一代安全可靠用於非侵入式糖尿病監護的視網膜圖像系統	Prof. Jane You Jia 尤佳教授	Department of Computing 電子計算學系
Diploma of Excellency from The Technical University of Cluj-Napoca - Romania 羅馬尼亞克盧日納波卡科技大學 - 優異發明獎	(See P.18 見第18頁)		
Gold Medal 金獎	Portable Real-time DNA Biosensor 便攜式基因 (DNA) 即時感測器	Prof. Samuel Lo Chun-lap 盧俊立教授	Department of Applied Biology and Chemical Technology 應用生物學及化學科技學系
	(See P.15 見第15頁)	Dr Derek Or Siu-wing 柯少榮博士	Department of Electrical Engineering 電機工程學系
Silver Medal 銀獎	Solar Powered Air Conditioning System for Vehicles (SAV) 太陽能供電的汽車空調系統	Prof. Eric Cheng Ka-wai 鄭家偉教授	Department of Electrical Engineering 電機工程學系
Best Invention Award from the First Institute of Inventions and Researchers in I.R. of Iran 伊朗第一發明及研究者學院 - 優異發明獎		Green Power Industrial Limited 陽光動力有限公司	
Silver Medal 銀獎	Ecodesign and Green Manufacturing Model for Electrical and Electronic Products under EuP Directive 耗能產品生態化的綠色製造流程與設計	Dr Winco Yung Kam-chuen 容錦泉博士	Department of Industrial and Systems Engineering 工業及系統工程學系
Silver Medal 銀獎	Novel Activated Sludge Eco-Bricks Manufacturing Technology 新型環保建築材料生產技術	Prof. Chua Hong 蔡宏教授	Department of Civil and Structural Engineering 土木及結構工程學系
Silver Medal 銀獎	Quick Test System of Formaldehyde in Textiles and Clothing 快速紡織物及布料甲醛測試系統	Prof. Hu Jinlian 胡金蓮教授	Institute of Textile and Clothing 紡織及製衣學系