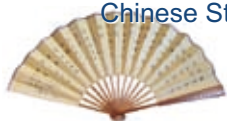


中國研究
Chinese Studies



成立公民社會資料庫

Construction of Civil Society Database

由公民社會研究中心及香港亞太研究所合作進行的公民社會資料庫計劃已經展開，由中心主任陳建民教授主持，並獲大學重點研究領域—中國研究—資助。計劃旨在向各界人士提供有關大中華地區公民社會各類重要資訊，同時，資料庫亦可以協助社會科學學者進行各種量性及質性的研究。

中心已進行多次訪問，與國內不同的單位、機構建立了良好合作關係，希望資料庫有助提高公眾對公民社會的關注意識，並將公民社會知識推廣至國內。

Funded by the Chinese Studies Major Area of CUHK, the Centre for Civil Society Studies has been cooperating with the Hong Kong Institute of Asia-Pacific Studies to construct a Civil Society Database (CSD). The project led by Prof. Chan Kin-man, director of the centre, aims at providing significant information on both static and dynamic aspects of civil society in China. The database is very useful to scholars across the social sciences, whether their approach emphasizes quantitative or qualitative research methods.

Many interviews have been conducted and partnership has been established among different parties and institutes in China. Through the CSD, it is hoped that public awareness can be promoted and knowledge of civil society can be disseminated within the region.

生物醫學科學
Biomedical Sciences



研發生命優糧

Better Food for Life

國家科學技術部批准成立「農業生物技術國家重點實驗室(香港中文大學)」(實驗室)，與中國農業大學國家重點實驗室結成夥伴。二零零八年九月，中國政府宣布推出為期十三年、總額達三十五億美元之「轉基因生物新品種培育科技重大專項」，當中的「作物產量、抗逆和高營養相關功能基因的發掘與機理研究」項目，將由中大研究人員通過實驗室的平台，與中國農業大學深入協作，主力完成。這將是香港科研隊伍全力參與國家重大科研的先例。

The establishment of the State Key Laboratory (SKL) of Agrobiotechnology (CUHK) in partnership with the SKL at China Agricultural University (CAU) was approved by the Ministry of Science and Technology. In 2008, the Chinese government rolled out a total of US\$3.5 billion for a research and development initiative on genetically modified crops and animals. Through the SKL platform and deep collaboration with CAU, the CUHK team will play a leading role in a funded project titled 'Identification and Mechanistic Study of Genes Related to Crop Yield, Nutrition and Stress Tolerance'. This project should set precedence for the full participation of Hong Kong scientists in research projects of high national priority.

訊息科學
Information Sciences



改善無線網絡表現

Improvement of WLANs Performance

該研究項目由中大與美國哥倫比亞大學及微軟研究所(雷德蒙德)的研究人員共同開展，論文獲 ACM CoNext 2008最佳論文獎。

無線網絡在商界和家庭中日漸普及，但網絡傳輸媒介本身的不穩定，令數據傳送表現仍偶欠理想，影響用戶接收訊息。研究提出改善無線數據傳送的實用方案，以SoftRepeater系統解決目前IEEE 802.11無線網絡的「傳輸率異常」問題，即低速站點拖慢高速站點的數據傳送流量。該系統能令高速站點在有需要時轉為中繼器，為低速站點傳送數據。模擬和實驗測試證明，SoftRepeater能把目前的積累數據傳送流量提高達兩倍。

經濟與金融 Economics and Finance



This is a joint project with researchers from Columbia University and Microsoft Research in Redmond. It received the best paper award in ACMCoNext 2008. Wireless networking has become popular among corporations and home networks, but users still occasionally have to put up with poor wireless data transfer due to inherently unstable wireless medium. In view of the rate anomaly problem suffered by currently deployed IEEE 802.11 WiFi networks in which stations transmitting at low data rates have dramatically reduced the throughput of stations transmitting at high data rates, the project team proposed a practical, deployable system called SoftRepeater. The system allows higher-rate WiFi stations to opportunistically transform themselves into repeaters and relay data for lower-rate stations, and the repeater functionality to be enabled only when appropriate. Through simulation and testbed experiments, SoftRepeater can improve cumulative throughput by about two times.

「制度、金融與經濟發展」研討會 ‘Institutions, Finance and Economic Development’ Symposium

經濟金融研究所繼續倡導研究亞洲及中國地區的經濟與財務問題，並舉辦了連串國際會議和工作坊。其中表表者為與香港城市大學經濟及金融系合辦的「制度、金融與經濟發展」研討會，邀請了哈佛大學、麻省理工學院、匹茲堡大學、亞爾伯達省立大學及清華大學等著名學府的頂級學者，就亞洲及中國的重要議題發表其精闢研究成果，議題包括法律、金融、中國的發展、政治與經濟，以及司法系統和制度的演進。研討會提供了交流平台，讓與會者討論其現行研究，藉此發掘進一步合作的機會。

The Institute of Economics and Finance continued to promote research on economic and finance issues in Asia and China. It has hosted a series of international conferences and workshops. One that stood out was the joint symposium ‘Institutions, Finance and Economic Development’ organized with the Department of Economics and Finance, City University of Hong Kong. The event brought together top scholars from renowned institutions such as Harvard University, the Massachusetts Institute of Technology, University of Pittsburg, University of Alberta and Tsinghua University to present high quality research important to Asia and China. The topics discussed included law, finance, Chinese development, politics and economy and the evolution of legal systems and institutions. The symposium has provided an exchange platform for researchers to discuss their work in progress and explore opportunities for further collaboration.

研究空氣污染的新平台 New Platform for Studying Air Pollution

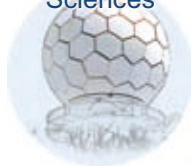
珠江三角洲地區工業迅速發展，導致嚴重空氣污染，成為區內政府最關注的環境問題。建立一個溝通及協商決策的平台，讓地區內所有持份者合作解決這問題，實屬必需。

香港中文大學與中山大學合作開發了「協同虛擬地理環境平台」，從跨學科的共同基礎出發，研究區域性空氣污染問題。有別於現有的方法，研究小組側重以動態三維技術在珠江三角洲的虛擬地形上表達環境問題，模擬動態空氣污染的傳輸和擴散等情況，使不同領域的科學家、各地政府官員及公眾更易於理解。

The rapid industrial developments in the Pearl River Delta (PRD) region have caused severe air pollution problems—a top environmental issue of the region’s governmental authorities. With this in mind, this research project develops a communication and cooperative decision-making platform for all the stakeholders of the region to tackle this problem.

This project, conducted jointly with Sun Yat-sen University, developed a Collaborative Virtual Geographic Environment Platform to study the regional air pollution issues from a common cross-disciplinary foundation, the geographic perspective. Unlike those of existing projects, the methods focus on dynamic 3D volume representation in virtual PRD terrain environments, which makes dynamic air pollution transportation and dispersion simulation easily understood by scientists of different disciplines, governments as well as the general public.

地球信息與地球科學 Geoinformation and Earth Sciences



文學院 Faculty of Arts



「全球化：文化、建制與社會經濟」國際會議 ‘International Conference on Globalization: Cultures, Institutions and Socioeconomics’

中大人類學系、文化及宗教研究系和經濟學系，聯同美國聖路易華盛頓大學東亞研究課程及經濟學系，於二零零八年十二月合辦「全球化：文化、建制與社會經濟」國際會議，透過檢視全球化的前因後果，促進跨學科及跨文化的學者對話，刺激對大中華球化進程效應的綜合研究。會議亦衍生了不少論及全球化對大中華法律體制、城市、文化承傳、環境、公民權及勞工等方面影響的論文。

In December 2008, the ‘International Conference on Globalization: Cultures, Institutions and Socioeconomics’ was jointly organized by the University’s Departments of Anthropology, Cultural and Religious Studies, Economics and the East Asia Studies Program and the Department of Economics of Washington University in St. Louis. The conference studied the causes and consequences of globalization, with the aim of promoting dialogue among academics from different backgrounds and cultures, and stimulating further study of the effects of globalization in China. The conference generated a rich set of papers on the implications of globalization for China’s legal regime, cities, heritage, environment, working conditions and concept of citizenship.

中國上市公司產品召回的股東財富效應實證研究 The Impact of Product Recall Announcements on Shareholder Wealth

工商管理學院的研究人員研究產品回收這個夢魘對公司的影響。雖然產品回收對一公司長遠股值及聲譽的影響很難量化，然而對股東財富的短期影響則可以估計。過往這範疇的研究多是審視西方國家的處境，甚少研究中國的股票市場。中大研究人員研究了二十九款由國內上市公司於二零零二至二零零八年間宣布回收的產品，發現一如之前的研究顯示，產品回收確會給受影響公司造成負面的異常回報，而中國公司因此所蒙的經濟損失，亦較美國公司更大。

A research team from the Faculty of Business Administration explored the important area of product recalls, one of a producer’s worst nightmares. Although the long-term damage of product recalls to brand equity and company reputation may be difficult, if not impossible, to quantify, the short-term impact on shareholders’ wealth can be estimated. Several studies have examined this issue in a western context, but little is known about the impact of product recalls on the Chinese stock market. CUHK researchers investigated 29 product recalls announced by Chinese publicly-traded companies between 2002 and 2008, and discovered that product recalls, as previous studies had suggested, resulted in negative abnormal returns to the affected companies, and that Chinese companies suffered greater financial losses than their western counterparts.

工商管理學院 Faculty of Business Administration



教育學院 Faculty of Education



批判性思考：測量及課程套設計 Assessment and Construction of a Curriculum Package for Critical Thinking

香港新高中課程強調培養學生批判性思考能力，有見及此，教育心理學系侯傑泰教授、心理學系顧依麗博士，與香港大學何德芳博士，聯同前美國心理學會會長Prof. Diane Halpern，在研資局和教育局資助下，進行多項相關研究，設計一套切合本港教育需要的高中學生批判性思考能力測驗，並檢視這能力與其他心理特性的關係。此外，研究人員亦設計了相關的課程與配套讀物，並比較了不同教學法的效能及優劣。教育局已將教材套印發至全港中學，研究人員亦培訓了六百多名教師使用該教材套。

Helping students to develop the ability to think critically is one of the main goals of the new senior secondary school curriculum. To develop the necessary teaching materials for this aspect of the curriculum, Prof. Hau Kit-tai of the Department of Educational Psychology and Dr. Kelly Ku of the Department of Psychology, together with Dr. Irene Ho of The University of Hong Kong and Prof. Diane Halpern, former president of the American Psychological Association, conducted a series of studies with funding support from the RGC and the Education Bureau. They designed and evaluated a tool for assessing critical thinking that met local educational needs, and examined how this competence was related to other psychological constructs. They also constructed a critical thinking curriculum and reading package and compared the effectiveness and benefits of different teaching methods. The Education Bureau has printed and distributed the teaching package to all secondary schools in Hong Kong, and the research team has trained over 600 teachers in using the package.

工程學院 Faculty of Engineering



使用壓電元件收集振動能量

Energy Harvesting from Vibration Using Piezoelectric Materials

機械與自動化工程學系廖維新教授及其學生，深入研究如何使用壓電元件收集日常環境中的振動能量，使之得到再生和利用。壓電能量發電器能夠把機械振動的能源轉化為電能，向無線傳感器網絡及移動設備供電。這種自給自足的系統無需電池供電，而是回收並利用日常生活中常被忽視和浪費的機械振動能量，因而更符合環保原則。廖教授的團隊設計及改良了壓電能量發電器，又探討了儲能器件電壓與壓電能量收集電路效率的關係，更設計出一種自供電開關界面電路，使收集效率比現有採用的電路提升百分之五十。

Prof. Liao Wei-hsin and his students of the Department of Mechanical and Automation Engineering investigated energy harvested from vibration using piezoelectric materials as an alternative to renewable energy. Piezoelectric power generators were used to transform the mechanical energy from vibration into electrical energy, which could replace batteries to supply power to wireless sensor networks and mobile devices. The self-powered systems will be more environmentally friendly since they are using otherwise wasted mechanical energy from the vibration sources. Power generators using piezoelectric materials have been designed and evaluated. Professor Liao and his team also studied the efficiencies of piezoelectric energy harvesting circuits towards different energy storage device voltages, and designed an improved self-powered switching interface for piezoelectric energy harvesting circuits which can increase the energy harvested by 50%.

法律學院 Faculty of Law



「有效司法覆核—良好管治的基石」國際會議

'Effective Judicial Review: A Cornerstone of Good Governance'

中大法律學院和劍橋大學公法研究中心於二零零八年十二月舉辦大型創新學術會議，吸引世界各地的傑出講者出席，他們分別來自香港、澳洲、加拿大、中國內地、印度、以色列、新西蘭、南非、南美洲、英國和美國。會議題目是「有效司法覆核—良好管治的基石」，司法覆核近來成為法律執業者及公眾關注的焦點，而是次極具創意的學術會議為這一富爭議性的法律問題提供了嶄新答案。

In December 2008 the CUHK Faculty of Law and the Centre for Public Law of the University of Cambridge jointly hosted a ground-breaking conference on judicial review, which attracted an outstanding array of speakers from Hong Kong, Australia, Canada, mainland China, India, Israel, New Zealand, South Africa, South America, the UK and the US. The Conference, the first of its kind to be held in Hong Kong, was entitled 'Effective Judicial Review: A Cornerstone of Good Governance'. It offered cutting-edge solutions to controversial areas of judicial review that have been the centre of impassioned professional and public debate.

藥物吉非替尼對肺癌的療效

Gefitinib in Pulmonary Adenocarcinoma

基因分子學的新發現為治療非小細胞肺癌帶來突破。

腫瘤學系莫樹錦教授領導的IPASS研究，將表皮生長因子受體酪氨酸激酶抑制劑「吉非替尼」，與傳統化療比較。該項研究為期逾兩年，對象是一千二百一十七名來自亞洲九個地區的病人。結果發現相對傳統化療藥物，「吉非替尼」對出現表皮生長因子受體基因突變肺癌病人，尤其是在更容易出現基因突變的非吸煙的腺性肺癌病人身上，產生重大療效，且較化療優勝，可作為第一線療法。研究的初步成果，於二零零八年十月在斯德哥爾摩舉行的歐洲內科腫瘤學會討論會上發表，並於二零零九的醫學權威雜誌《新英倫醫學雜誌》刊登。

A team led by Prof. Tony Mok of the Department of Clinical Oncology designed the IPASS study, which compared the EGFR tyrosine kinase inhibitor Gefitinib with standard chemotherapy. The study was conducted over two years, and involved 1,217 patients from nine Asian countries. They confirmed the role of Gefitinib as first line therapy for lung cancer patients who harbour the EGFR mutation, and the predictive value of EGFR mutation as the most potent biomarker for the management of lung cancer. The study's initial findings were presented at the plenary session of the European Society of Medical Oncology Annual Meeting in Stockholm in October 2008 and published in the *New England Journal of Medicine* in 2009.

醫學院 Faculty of Medicine



理學院 Faculty of Science



大亞灣中微子振盪研究

The Daya Bay Neutrino Oscillation Experiment

中微子具質量及會振盪，亦即中微子在運行時會轉換形態，是物理學界新近一項突破性發現，為物理學在粒子物理標準模型外，開拓另一新領域，亦為宇宙間物質支配反物質這現象提供了線索，所以對粒子物理學、宇宙學和天體物理學的研究可說影響深遠。然而，用以描述微中子振盪的參數 θ_{13} 數值仍是未解之謎，要量度該數值，最理想的方法是量度不同地方核子反應爐中反微中子的流量。一隊由國際物理學家組成的研究隊伍，選定大亞灣核電子廠為研究目標，中大理學院的研究員及學生亦參與其中，並獲研資局協作研究金於二零零八年撥款港幣九百萬元。此計劃使理學院員生有機會與世界各地研究機構建立長遠合作關係。

One of the most dramatic recent breakthroughs in physics is the discovery that neutrinos have mass and oscillate (i.e., a neutrino travelling in space transforms from one type to another). This fact has profound implications for particle physics, cosmology and astrophysics, as it opens the door to physics beyond the Standard Model of Particle Physics and may hold the key to explaining why matter dominates anti-matter in the universe, a key condition for our existence. However, the value of a key parameter to describe neutrino oscillation, θ_{13} , remains unknown. The best approach for determining this is to measure the flux of antineutrinos from nuclear reactors at different locations, with the detectors installed underground to suppress the cosmogenic background. An international team of physicists has decided to mount such an experiment at the Daya Bay Nuclear Power Plant, and a team of CUHK researchers and students from the Faculty of Science has been involved in this project since its inception, supported by a grant of HK\$9 million from the RGC Collaborative Research Fund in 2008. The project offers the Faculty of Science the opportunity to build long-term collaboration with leading research institutes around the world.

社會科學院 Faculty of Social Science



毛寺生態實驗小學

Maosi Ecological Demonstration Primary School

甘肅省毛寺村位於黃土高原，偏遠貧困，經濟與技術水平落後，學生只能在窯洞或簡陋的單層土房子內上課。建築學系吳恩融教授率領學生團隊，努力多年研究出一個適合於當地發展現狀的生態建築模式。這個項目包括現狀調研與分析、模擬實驗，以及設計與施工三個階段，借鑑當地傳統窯洞建築的生態元素，以創造舒適的室內環境，盡量減低能耗和環境污染、造價低廉、施工簡便為原則，配合TAS軟件進行電腦熱學模擬實驗，考慮日照和通風因素，充分利用土坯、茅草和蘆葦等就地取材的自然物料的蓄熱、絕熱性能與可再生性，由村民用農村常用的手工具以傳統建造技術施工，建造出冬暖夏涼的校舍。這個「高科學、低技術」的創新環保設計，成本遠低於常規建築，成功示範兼顧生態及社經因素，並符合可持續發展原則的建築項目，在二零零八及二零零九年獲得多項獎譽。（另見四十九頁）

In the remote and impoverished village of Maosi, Gansu province, schools are either housed in loess caves or in simple single-storey brick huts. Prof. Edward Ng of the Department of Architecture and his students have worked for years to develop an ecological architecture model in tune with the local context to improve the learning environment of the students. The project comprised the stages of condition analyses, computer simulation experiments, and design and field construction. Condition analyses deduced that thermal design for this region is the most effective approach towards ecological architecture, and both design and construction should follow these principles: comfortable indoor ambience, cost-effectiveness, minimum embodied energy and ease of construction. With the help of TAS software in thermal simulation, and taking into consideration factors such as daylight and ventilation, the basic technique of thermal mass and insulation was strategically employed. Earth and natural materials such as mud bricks, rubble, straw and reed, mostly sourced in or around the site were used and recycled, making almost no impact on the environment. The construction inherited the local traditional means, and was carried out by villagers with simple tools. The 'high science and low technology', low-cost and environmental design successfully demonstrated how an architecture project can address ecological, social and economical needs and be sustainable in nature. The project has won numerous accolades in 2008 and 2009. (more on p.49)