

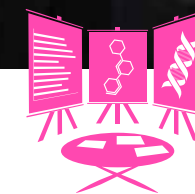
**KNOWLEDGE TRANSFER &
PARTNERSHIPS
WITH INDUSTRY**
知識轉移與夥伴拍業界

CREATING IMPACT FOR BUSINESS DEVELOPMENT

推動工商發展

Through a variety of knowledge transfer activities – consultancy, licensing, industry collaborations and cultivation of entrepreneurship, PolyU has made our mark in the advancement of business and industry.

透過顧問服務、技術授權、夥伴拍業界及培育企業家精神等知識轉移活動，理大成功促進工商業界的發展。



SPURRING DEVELOPMENT THROUGH CONSULTANCY

PolyU Technology and Consultancy Company Limited (PTeC), the ISO9001-accredited commercial arm of the University, provides innovative consulting solutions to businesses and organizations in the public and private sectors. In 2012/13, PTeC served 346 local and international clients and was involved in 532 consultancy projects, with a turnover exceeding HK\$110 million.

提供顧問服務 促進業界發展

理大科技及顧問有限公司擁有 ISO9001 認證，為工商界提供專業顧問服務和創新的解決方案。在二零一二至一三年度，共為三百四十六家本地及海外機構，包括私營機構及政府部門等，提供五百三十二項顧問服務，總業務收入超過一億一千萬港元。



PROJECTS HIGHLIGHTS 項目精選

POLYU DEPARTMENT 理大部門	CLIENT 服務對象	CONSULTANCY PROJECT 顧問項目	IMPACT/CONTRIBUTIONS 影響/貢獻
Department of Applied Biology and Chemical Technology 應用生物及化學科技學系	New B Innovation Limited 新行健醫藥科技有限公司	<i>In vitro</i> and <i>in vivo</i> studies of a putative chemotherapeutic drug on cancer stem cells and in other solid tumours, including liver, breast, lung, brain, colorectal and esophageal cancers 針對新的化療藥作體外和體內研究, 探討它對腫瘤幹細胞和其他腫瘤(包括肝癌、乳腺癌、肺癌、腦癌、大腸癌和食道癌)的影響	The new drug may possibly target various solid tumours and cancer stem cells 新藥可能有效針對腫瘤細胞和腫瘤幹細胞, 提升治療效果
Department of Building and Real Estate 建築及房地產學系 ①	Occupational Safety and Health Council 職業安全健康局	Study on personal cooling equipment for workers who are routinely exposed to hot environment 研究工人經常在炎熱的環境下所使用的個人冷卻設備	Equips industries with solutions to protect workers from heat stroke 為業界提供建議方案, 減低工人中暑的風險
Department of Civil and Environmental Engineering 土木及環境工程學系 ②	Leader – Sunnic Joint Venture 利達—實力聯營	Hydraulic modelling for reconstruction, improvement and rehabilitation of the Kai Tak River from Wong Tai Sin Police Station to Tung Tau Estate 運用水力模型, 研究由黃大仙警署至東頭邨的啟德河段的改善工程	Improves the control of flow patterns to reduce water pollution due to stagnant water, prevents flood during adverse weather, and enhances the ecology of nearby living environment 增強水流量, 以防止由積水引起的水污染, 預防惡劣天氣導致的泛濫及改善附近的生態環境
Department of Electrical Engineering 電機工程學系 ④	ABB Technology Limited	Study on the impact of Electric Vehicle (EV) charging on power system planning 研究電動車充電為電力系統帶來的影響	Provides guidelines for power system planning to support the development of EV charging facilities 提供電力系統的計劃指引, 使之更有效地支持電動車的充電設備
Department of English 英文系 ③	Education Bureau, HKSAR Government 香港特別行政區政府教育局	Provision of courses to facilitate secondary school teachers in teaching Key Learning Areas in various subjects in the English medium 提供培訓課程, 協助中學教師以英語教授多個學習領域的學科	Enhances teachers' knowledge of the English language system and assists students in learning more effectively 幫助教師瞭解英語系統, 並提升學生的學習效率
School of Nursing 護理學院	Hospital Authority 醫院管理局	Intensive tailor-made programme to enhance the competence of Hong Kong's nurses in providing advanced care to patients diagnosed with breast diseases/cancer 透過加強訓練, 提升本港護士的能力, 以照顧患上乳腺癌疾病或乳癌的病人	Enhances competence and counselling skills of front line nurses in dealing with cancer patients and their families 提升前線護士的能力及輔導技巧, 以協助癌症病人及其家人

SAFEGUARDING INTELLECTUAL PROPERTY

During 2012/13, a total of 65 patents, trademarks and designs were granted to PolyU and the University submitted 45 new applications for patents, trademarks and design registrations in the year.

維護知識產權

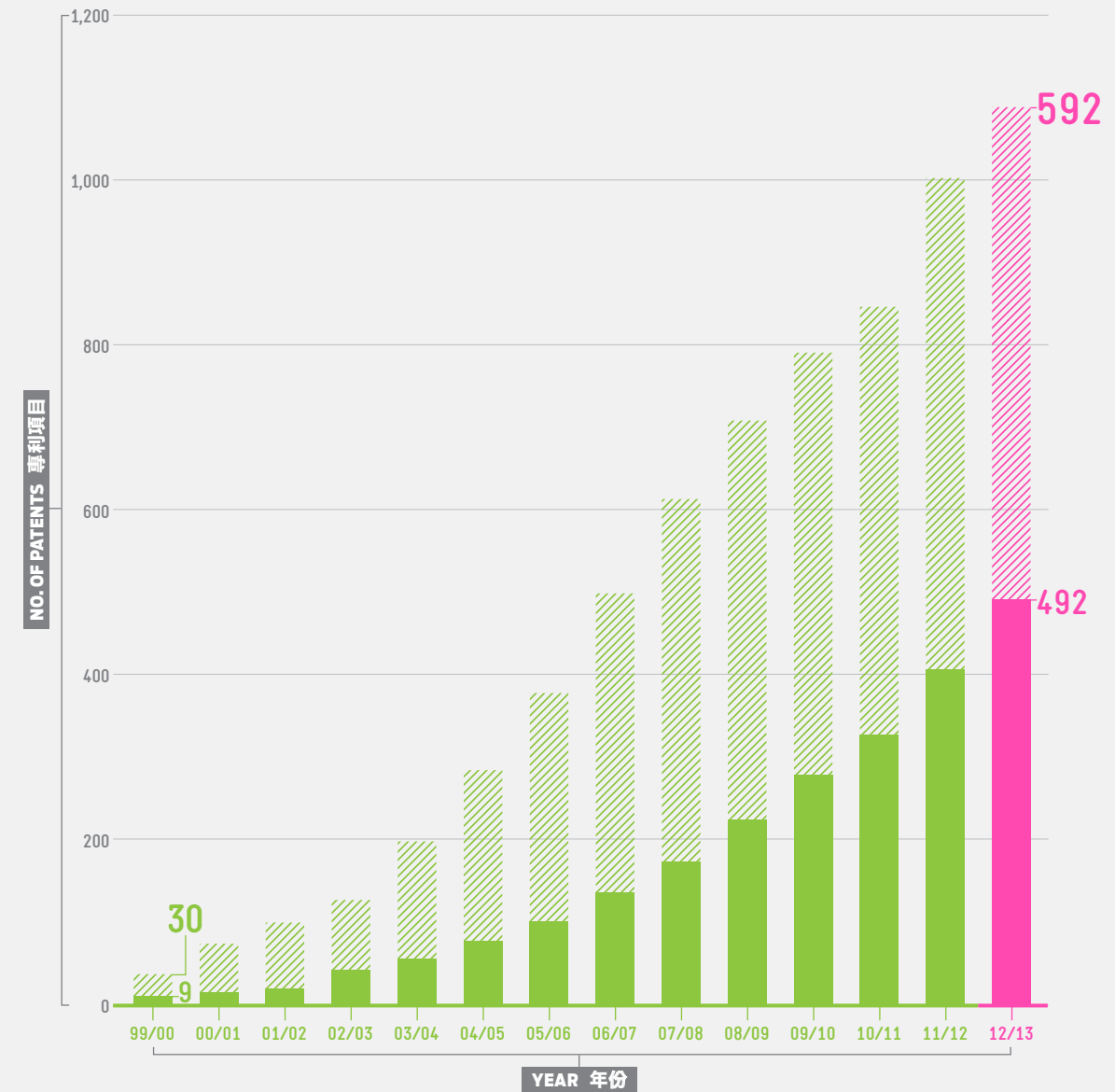
二零一二至一三年度, 理大獲批合共六十五項專利、商標及設計, 大學年內亦提交了四十五份新的專利、商標及設計註冊申請。

CUMULATIVE PATENTS GRANTED AND PENDING 累計獲批及待批專利項目

KEY 圖例

● Cumulative patents granted
累計獲批專利項目

▨ Cumulative patents pending
累計待批專利項目



CREATING IMPACT THROUGH LICENSING

Knowledge transfer through licensing enables partner companies to leverage PolyU technologies in enhancing their competitiveness or creating new products. In 2012/13, the Institute for Entrepreneurship entered into over 50 licensing agreements/Memoranda of Understanding/Non-disclosure agreements for transfer of PolyU's proprietary knowledge in areas including social sciences, health science, textile technology and design.



通過技術授權 創造深遠影響

通過技術授權進行知識轉移, 夥伴機構可以利用理大的科研技術來提升競爭力或開發新產品。年內, 理大企業發展院成功與業界簽訂逾五十項技術授權協定/備忘錄/保密協議, 以轉移理大的專有知識, 涉及範疇包括社會科學、醫療科技、製衣技術及設計等。

LICENSED TECHNOLOGIES AND DESIGNS 技術及設計授權

POLYU DEPARTMENT 理大部門	INVENTOR 發明者	TECHNOLOGY 技術	LICENSEE 獲授權機構	BENEFITS/ APPLICATIONS 優點/應用
Department of Applied Biology and Chemical Technology 應用生物及化學科技學系	Prof. Albert Chan 陳新滋教授	Oral puerarin phospholipids complex capsule and its preparation technology 口服葛根素磷脂複合物膠囊及其製備技術	PuraPharm International (H.K.) Limited 培力藥業集團	A new drug in oral dosage form for cardiovascular diseases that significantly enhances the bioavailability of puerarin with little adverse drug response 副作用較輕的新藥(口服製劑), 用於心血管疾病的治療, 能大大提升葛根素的生物利用度
Department of Applied Social Sciences 應用社會科學系	Dr Zeno Leung 梁傳孫博士	Food Bank Information System 食物銀行資訊系統	Kwun Tong Methodist Social Service 循道衛理觀塘社會服務處	Facilitates the food assistance programme for low-income individuals and families 協助推行專為低收入人士及家庭而設的食物援助計劃
Department of Health Technology and Informatics 醫療科技及資訊學系	Prof. Iris Benzie Iris Benzi 教授	The Ferric Reducing/Anti-oxidant Power Assay 抗氧能力(FRAP)測試	Arbor Assays, LLC	A simple, speedy and sensitive biomonitoring tool for quantitating antioxidant capacity of foods, herbs, and biological fluids 簡單、快捷而敏感度高的生物監測工具, 用以定量測試食物、香草和生物液的抗氧化含量
Institute of Textiles and Clothing 紡織及製衣學系	Prof. Tao Xiaoming 陶肖明教授	Nu-Torque™ Singles Ring Yarn Technology (More on p.71) 扭妥™環錠紡紗技術(詳見第七十一頁)	Ambika Cotton Mills Ltd.	Produces yarn with high strength and low residual torque, thus improving textile quality and significantly saving energy during yarn production 生產高強力和低殘餘扭矩的紗線, 能改善紡織物品質, 並大大降低紗線生產過程中的耗電量
School of Design 設計學院	Ms Gwen Yip and students of School of Design 葉美茵女士及設計學院學生	1. The illustration and design of a book named "粒粒都辛苦" 2. A video named "你每一嘢, 都可大可小" 1. 繪本圖書《粒粒都辛苦》的設計 2. 短片《你每一嘢, 都可大可小》	Oxfam Hong Kong 香港樂施會	Raises public awareness of farmers' efforts of growing food and making better choices in food consumption 令公眾對農夫種植食物的辛勞, 以及進食的較佳選擇, 有更深刻的認識
School of Design 設計學院	Mr Sonntag Stefan and students of School of Design Sonntag Stefan 先生及設計學院學生	A design named "MINI Maze Concept" 名為"MINI Maze Concept"的設計	BMW Concessionaires (HK) Ltd 寶馬汽車(香港)有限公司	Provides an unconventional and more effective promotional concept for MINI 為汽車品牌MINI提供別具創意且效果卓越的推廣理念

BOOSTING INNOVATION THROUGH UNIVERSITY-INDUSTRY COLLABORATIONS

Throughout the year, PolyU continued its successful company partnerships that help transfer its innovations to the industrial sector. Examples include the following:



9— Anti-erasing ink prevents counterfeiting with products

An anti-erasing ink (ATE) created from PolyU's patented nanoparticle synthesis method prevents counterfeiting in food packaging. The ink was licensed to a partner for industrial scale production. The new printing systems using ATE ink are rolled out in carton packaging production lines of one of China's biggest dairy product manufacturers. With the adoption of ATE ink, consumers can rest assured that the expiry dates on their purchases are off-factory prints.

12— Raising food safety standards

PolyU's Food Safety and Technology Research Centre has been partnering with local and international organizations in food testing, quality control of food supplies, and developing functional food products and drugs from traditional Chinese medicinal herbs. The Centre also tailor-made training programmes for employees of fast food chains to raise their awareness in food safety, related legislation and hazard analysis.

Producing health foods to alleviate geriatric problems

PolyU was engaged by a global supplier of PingWu Gastrodia to develop a series of food snacks and beverage products using this herb which is known for its effect in mitigating a number of geriatric conditions, such as Alzheimer's disease, migraine headaches and depression.

理大夥拍業界 推動創新科研

年內，理大繼續與各機構成功建立合作夥伴關係，並向業界轉移其創新科技。以下是一些例子：

「抗擦墨」防止假冒產品

利用理大的專利納米粒子合成法研製的「抗擦墨」，能有效防止偽冒食品包裝信息。該技術已授權予一家業界夥伴，以進行工業生產。中國其中一家最大的奶類產品生產商已開始採用配備抗擦墨的全新打印系統。抗擦墨能確保產品上的有效日期為原廠印製的信息，讓消費者安心選購。

提高食物安全標準

理大食物安全及科技研究中心與本地及國際機構長期合作，從事食品檢測和食物供應質素管理工作，並以傳統中草藥研製功能性食品及藥物。該中心亦曾為連鎖快餐集團的員工度身訂造培訓計劃，以提高他們對食物安全、相關法例及危害分析的認知。

研製保健食品紓緩老年病

平武天麻以能紓緩老年病症狀見稱，其中包括腦退化症、偏頭痛和抑鬱等。理大受一家平武天麻的國際供應商委託，利用該草藥研發一系列保健零食及飲品。



TCM-based drug brings hope for cure

The Puerarin Phospholipids Complex Capsule, a new drug developed by PolyU with a novel phospholipids complex formulation technology for curing cardiovascular diseases, is the first Hong Kong drug to have secured clinical trial licence from the Chinese Food and Drug Administration. It was licensed to a local Traditional Chinese Medicine (TCM) company for long-term development.

Energy savings achieved using optimal control strategies

In partnership with a listed construction company, PolyU developed energy efficient and optimal control strategies for complex heating, ventilation, and air conditioning systems. Those strategies were used to achieve optimal energy consumption at the International Commerce Centre and resulted in a staggering annual saving of 7 million kWh, or 18% of the energy consumption on air conditioning.

Power generation from water pipelines

PolyU researchers teamed up with HKSAR Government's Water Supplies Department to create in-line mini-turbines in the local network of underground water pipes to produce energy from waterflow to run monitoring device buried inside pipes. With optimal installation in the water supplies network, the array of turbines could save around 700 kWh of electricity and reduce carbon dioxide emissions by 560 kg each year.

Torque-free singles yarn hits overseas markets

PolyU-developed Nu-Torque™ Singles Ring Yarn Technology was licensed to an Indian cotton yarn company, bringing the technology to factories in a few countries. PolyU further collaborated with a Shenzhen company to develop an all-purpose electronic control unit for various types of spinning machines thereby facilitating the adoption of the Nu-Torque™ spinning system.

中藥為基礎 新藥現曙光

理大利用嶄新的磷脂複合物組成技術，成功研發出一種名為葛根素磷脂複合物膠囊的新藥。該藥物可以治療心血管疾病，是香港首種取得中國國家食品藥品監督管理總局藥物臨床試驗批件的藥物。該藥物已授權予一家本地傳統中藥公司作長遠發展。

節能技術實現優化控制策略

理大與一家上市建築公司共同開發綜合供暖、通風及空調系統的節能與優化策略，並於環球貿易廣場實現優化能耗，每年為其大幅節電七百萬度，或節省百分之十八的空調能耗。

輸水管水力發電

理大科研人員與香港特別行政區政府水務署合作，為本地的地下水管網絡開發內聯閉式小型渦輪，以水流所產生的電能來推動埋於水管內的監測系統。在供水網絡優化安裝這些渦輪後，每年最多可節電約七百度及減少五百六十千克碳排放。

零扭矩環錠紗線進軍海外市場

由理大開發的扭妥™環錠紡紗技術已授權予一家印度棉紗公司。該公司將在數個國家的工廠引入有關技術。理大繼而與一家深圳公司合作，共同研發適用於各類紡紗機的多功能電子控制裝置，以便採用扭妥™紡紗系統。

CULTIVATING “DO WELL DO GOOD” ENTREPRENEURSHIP

PolyU has been nurturing an environment conducive to innovation and entrepreneurship by supporting students and graduates' innovations and entrepreneurial projects/ventures through a seed funding programme. The year saw success of some of the new products and services.

PolyU Micro Fund Scheme

Established in 2011, the PolyU Micro Fund Scheme has been gaining community-wide recognition within PolyU and across local entrepreneurial communities. In 2013, 180 applications were received and the total number of applications over three years is 600. During 2013, 19 entrepreneurial propositions/ventures were awarded HK\$100,000 seed fund for their startup business. Furthermore, seven student projects won awards for their innovative ideas to enhance social inclusion.

The products/services launched were highly regarded not only by customers but also by experts in the respective fields. A young team won the Red Dot Design Award Best of the Best 2013 (Watch & Jewellery) with a specially designed CAN-WATCH with upcycled materials and labour force from sheltered space. (Photo 13-14)

New alliances to boost HK-mainland entrepreneurship

The year saw a number of initiatives to enhance exchanges between young entrepreneurs in Hong Kong and the Chinese mainland. PolyU and Shanghai Technology Entrepreneurship Foundation for Graduates jointly established the first ever China-Hong Kong matching fund for PolyU graduates to start new business in the Chinese market (Shenzhen and Shanghai). The fund committed to support 30 qualified entrepreneurial projects for a total amount of RMB 6 million in the next three years.

In addition, PolyU and Fudan University collaborated to develop a series of entrepreneurship education programmes for young entrepreneurs in Hong Kong and Shanghai. The topics covered High Potential Entrepreneurial Leadership as well as Organization Development and Change.

Driving sustainability and social innovation in business

A series of lectures branded as “Business Beyond Usual” were organized on such topics as sustainability development, social innovation and entrepreneurship, featuring international speakers from different sectors sharing their vision and strategies in driving sustainability and social innovations in day-to-day business operations. The series will be offered regularly to advocate the “Do Well, Do Good” entrepreneurial ethos and practice.

培育「有利且有善」 的企業家精神

理大一直致力孕育有利於創業的優良環境，並透過種子基金計劃，支持本校學生和畢業生的創新及創業計劃和項目。多個全新的產品與服務更在年內成功推出市場。

理大微型基金計劃

該基金自二零一一年成立以來，一直為理大及香港創業群體所稱許。三年來共收到了六百多份申請，當中僅二零一三年便佔了一百八十分，其中創業組共有十九項申請各獲得十萬港元的種子基金以啟動其業務，而創新組就有七個學生項目以創意促進社會共融而獲獎。

學生和畢業生團隊的產品不僅獲客戶支持，相關行業的專家也給予高度評價。其中一支年青團隊便憑著由循環再用物料製成，並由庇護工場工人裝嵌的「CAN-WATCH」系列，勇奪「二零一三年 Red Dot Design Award」手錶及珠寶類別最佳設計大獎。(圖十三至十四)

成立聯盟 推動中港創業

為加強中港兩地青年企業家的交流，理大與上海市大學生科技創業基金會合作成立「上海市大學生科技創業基金會-理大專項基金」，提供種子基金予理大畢業生在深圳及上海開創業務。基金已承諾在未來三年提供人民幣六百萬元，以支持三十個高質素的創業項目。

此外，理大亦與復旦大學合作為香港和上海的青年企業家開發一系列創業教育課程，內容包括「高潛質創業領導力」及「組織發展與變革」等。

推動可持續發展與社會創新業務

理大定期舉辦名為「與別不同的業務」的講座系列，主題包括可持續發展、社會創新和創業精神。來自不同界別的國際知名講者分享如何在日常業務運作中推動可持續發展和社會創新。定期舉辦這些講座有助推動「有利且有善」的企業精神和模式。

Engaging Poly-preneur™ community

In 2012, PolyU coined a new term “Poly-preneurs™” to aptly portray the community of PolyU's graduates advancing their careers as entrepreneurs. Regular visits, talks and networking activities are organized for the Poly-preneurs™ who are also encouraged to support the University's programmes, such as providing mentorship to Micro Fund recipients.



凝聚理大企業家力量

理大於二零一二年首創「理大企業家」一詞，以代表一群踏上創業大道、開創個人事業的理大畢業生。大學定期為「理大企業家」舉辦不同類型活動，包括企業探訪、講座和交流活動，亦鼓勵他們支持理大的發展項目，例如理大微型基金的師友計劃等。



Strengthening links at home and abroad

In November 2012, the PolyU-initiated International Strategic Technology Alliance organized a Knowledge Transfer Management Forum to share the best practice in knowledge transfer with 70 academics from around the world. In January 2013, the CEO Club staged a forum titled “The Economic Development of China and Implications for Hong Kong”. World-renowned Chinese academician Prof. Yu Yong-ding was the keynote speaker and Prof. Frederick Ma Si-hang, PolyU Professor of Finance Practice, also joined the panel discussion. (Photo 15)

加強國內外聯繫

二零一二年十一月，由理大發起的國際應用科技開發協作網舉行了高校產學研管理論壇，與來自世界各地的七十位學者分享科技轉移的最佳守則。二零一三年一月，總裁協會舉辦的「CEO論壇：中國經濟發展與香港」，由享譽世界的華人學者余永定教授主講，而理大專業應用教授（金融）馬時亨教授亦有參與小組討論。(圖十五)

Nurturing management expertise through training

PolyU's educational reach includes training and development programmes for professionals and executives and customized courses for industry associations and enterprises. During the year, the Institute for Entrepreneurship delivered 405 short courses, served 77 corporate clients and benefited almost 18,000 participants from the public and private sectors.

培訓管理專才

理大的教育工作，亦包括為專業和行政人員提供培訓發展課程，以及為工商業協會及企業度身訂造培訓課程。年內，企業發展院提供了四百零五個短期課程、服務了七十七個企業客戶，有近一萬八千名公營部門與私營機構的參與者受惠。