Exhibitions Showcase CityU Innovations

Fifteen innovative projects developed by CityU researchers were showcased at the International ICT Expo 2015, demonstrating how innovative technologies can improve the quality of people’s lives.

The innovations demonstrated CityU’s strengths in cutting-edge research, ranging from wireless communications, biomedical science, consumer electronics, and neural control technology to mobile applications, which were closely related to our daily lives. The projects attracted the interest of public and industry.

The expo, hosted by the Hong Kong Trade Development Council, ran from 13 to 16 April 2015 in the Hong Kong Convention and Exhibition Centre. It showcased the latest products and solutions in

(Continued on next page)
information, communication and technologies to enhance public awareness of Hong Kong’s achievements in innovation, technology and design and stress their importance for our future.

Apart from the International ICT Expo, CityU participated many more fairs in and beyond Hong Kong in the first half of the year, such as electronica China and Consumer Electronics Show (CES) Asia in Shanghai, and Medical Fair in Hong Kong. The showcases provided ample exposure of CityU’s innovative research strength to visitors all over the world.

Mainland Collaborations on Technology Transfer

CityU has been working closely with the governments of some Mainland cities to establish knowledge transfer platforms comprising research and development collaboration, technology licensing, and technology consultation for mutual benefits. Renowned overseas universities will be invited to join as a partner and Stanford University has agreed to participate in one of the platforms the University has formed. Such tripartite collaboration will enhance CityU’s and Hong Kong’s strength as a technology hub.

To date, two Memorandums of Understanding were signed, one with the municipal government of Yangzhou and the other with the Longgang district government in Shenzhen. Discussions on applying similar model are underway in Chengdu and Yunnan. These partnerships would strategically position CityU to provide high-quality local and regional knowledge transfer services.

Recently, CityU had also formed a strategic partnership with Amer International Group, a Fortune Global 500 company headquartered in Shenzhen, for collaboration in technology research, product development, promotion of technology application, application of technology projects and academic exchange.

CityU has assisted major technology transfer efforts in Mainland China. Mr David Ai, Director of Knowledge Transfer Office, was invited to join ITTN (International Tech Transfer Network) established under Beijing Municipal Commission of Science and Technology, as an international advisor. Mr Ai attended ITTN conference in Beijing in April 2015, and delivered multiple speeches there.
Technology Transfer Policy Issues: An Interactive Session among Colleagues

An Interactive Session among Technology Transfer Executives of local universities was hosted by the Knowledge Transfer Office of CityU on 17 March 2015. Mr. David Ai, Director of Knowledge Transfer of CityU, together with Ms. Kirsten Leute and Mr. Chuck Valauskas who are Associate Director of Stanford’s Office of Technology Licensing and US attorney respectively, facilitated a massive discussion on IP and licensing policies among universities; policy and implementation of conflict of interest; and mechanism for outside practice.

Encouraging responses were received and we got feedback that similar exchange sessions should be organized on a regular basis.

Technology Start-up Support Scheme for Universities (TSSSU)

This funding scheme was successfully launched in 2014/15, and had attracted significant applications from start-ups operated by CityU students, alumni and/or academic staff. In the Government Financial Year of 2015/16, among the outstanding applications of CityU, eleven of them had been recommended to Innovation and Technology Commission (ITC), and all of them have been awarded for a substantial funding support. The technology area of the awarded projects ranged from education, information and communication technology, electronics, digital media, textile, etc. Details of the technology start-ups funded by TSSSU can be found at www.cityu.edu.hk/kto.

ITC provides an annual funding of up to HK$4 million to local universities, initially for three years, for expenses incurred in the 2014-15, 2015-16 and 2016-17 Government financial years.
Social Projects Recognized by CLASS Knowledge Transfer Awards

The College of Liberal Arts and Social Sciences (CLASS) conferred to three faculty members the Knowledge Transfer Awards to recognise the impact of their research projects in January 2015. The KT awards represent the College’s effort to effect positive changes through scholarship and service.

Professor Samuel Ho, Chair of the CLASS’ KT Committee, kick-started the ceremony by extending a vote of thanks to the panel of judges and welcoming the audience. And then Professor Herman Aguinis, the keynote speaker from Kelley School of Business, Indiana University, delivered a speech on new KT indicators to promote the awareness of the community about the KT achievements of tertiary institutions and also the role that tertiary institutions play in assessing the impact of academic research upon society.

Two academic staff members, Dr. Elaine Au and Professor Linda Wong, were honoured with Excellence in CLASS Knowledge Transfer Award 2014 in recognition of their contributions to knowledge transfer projects. The award winners received the awards from Mr David Ai, Director of Knowledge Transfer.

Excellence in Knowledge Transfer Award

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<tr>
<th>Recipient</th>
<th>Department</th>
<th>Project</th>
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<tbody>
<tr>
<td>Dr Elaine Au</td>
<td>Applied Social Sciences</td>
<td>“The Carbon Trade Game project – Bringing participatory learning experiences on environment and sustainability to local schools and communities” by City-Youth Empowerment Project</td>
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<tr>
<td>Prof Linda Wong</td>
<td>Public Policy</td>
<td>Project Flame Social Innovation &amp; Entrepreneurship@CityU</td>
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Certificate of Merit

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<th>Recipient</th>
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<tr>
<td>Dr Maria Francesch-Huidobro</td>
<td>Public Policy</td>
<td>A Carbon Reduction Implementation and Assessment Strategy for Hong Kong</td>
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Project details are available at http://www.cityu.edu.hk/class/kt_awardee.aspx

Entrepreneurship and Innovation Workshop Series by IIPCC

The International Intellectual Property Commercialization Council (IIPCC) Hong Kong Chapter is a non-political, non-profit social organization for promoting IP commercialization best practices to do common good; serving the socio-economic interests of local community; focusing on decent job creations, entrepreneurship and SME innovations.

Mr Alfred Kwok, Co-Founder of IIPCC Hong Kong Chapter, and the panelists including Mr David Ai, KT Director of CityU, presented two interesting topics on campus last January and March 2015.

The first workshop was about “IP as the Critical Success Factor for Career Advancement in Knowledge Economy”, and the second one was titled “OEM to ISF (Integrated Service Franchiser) Transformation: Turning a Product Company into a Service Franchise”. The events attracted more than 100 participants in total to know more about the insights and observations on how Hong Kong university graduates should prepare for their professional careers in knowledge economy, as well as benefiting from Mr Kwok and the panelists’ sharing on the most suitable IP Business Model in HK in their mind.
Forty members of Hong Kong General Chamber of Commerce (HKGCC) visited the School of Creative Media, Apps Lab and Centre for Innovative Applications of Internet and Multimedia Technologies (AIMTech Centre) of the City University of Hong Kong on 25 March to explore the creative potential of integrating new technologies into commercial applications.

The Apps Lab in the CityU main campus is the only apps lab in Hong Kong. A series of mobile apps were developed there, including Organ Donation App, Robot-Controlling App, Floating Movie App and Posture Assessment App. Dr Ray Cheung also introduced HabiToStep, a mobile application connecting people with the same habits and goals. By doing so, he inspired the participants how the lab serves as a matchmaker to connect designers and programmers.

At the Run Run Shaw Creative Media Centre, participants experienced a 360-degree 3D visualization of “Pure Land: Inside the Mogao Grottoes at Dunhuang”. After that, they had a guided tour of “The Age of Experience” exhibition hosted by Dr Harald Kraemer, Associate Professor of School of Creative Media, and a demonstration by Ms Kate Lau, Project Manager of Interactive Sensory Programme for Affective Learning technologies of AIMTech Centre on how the programme could help severely intellectually disabled students.
Technology Transfer Forum
“From Innovation to Realization II”

The CityU Technology Transfer Forum “From Innovation to Realization II” was held in Shenzhen in February 2015. The Forum featured our Innovation to Realization Funding (I2RF) Scheme projects about µIMU-vision fusion technology and Internet of Things (IoT). Co-organizers of the event included Shenzhen Science and Technology Services Association, Shenzhen Venture Capital Association, and Shenzhen Virtual University Park.

CUBIC Life Science Tea Gathering

A tea gathering that brought together more than 50 CUBIC supporters, students, faculty and staff was held at CityU on 8 May. The key message of the event was to promote entrepreneurship in biotechnology, and to illustrate what it takes to get a business idea out of a professor’s research and to start a company to capitalise the fruit of that professor’s research, that is to translate the research into money.

In the gathering, Professor Michael Lam, Professor of Department of Biology and Chemistry and Vice-chairman of Life Science Group of CUBIC, shared the challenges he faced being a professor-turned entrepreneur; Dr. Joseph Tam, CEO of the DiagCor Bioscience Limited, elaborated entrepreneurial skills in biotech start-up, from a perspective of an academic; and Dr Frank Wan, Solicitor of Messrs. Pang Wan & Choi and Chairman of Life Science Group of CUBIC introduced Genome Medicine as a new engine of growth in biotechnology. Their sharing and answers to participants’ enquiries during the session brought insights and built network between the academia and the industry of biotechnology.
Technology Licensed to Industry

Eight new licensing deals were closed during January to July 2015, and the licensees include local and Mainland companies engaged in steel industry, power technology, multimedia products, etc. Two of the licensees involved technology start-ups founded by CityU students and alumni. Below are the brief descriptions of the highlighted licensed technologies.

**Novel Ultra-high Strength Steel**
Prof Liu Chain Tsuan, University Distinguished Professor at CityU, has developed the nanocluster-strengthened steel which has an ultra-fine grained microstructure, and it is mainly strengthened by a high concentration of uniformly distributed particles with many advantages in terms of toughness, weldability, and corrosion resistance, etc.

**SiteWatcherOnCloud**
This is an anti-phishing web service based on cloud computing. It can automatically, accurately, and promptly identify if a given URL points to a phishing webpage, and can find the legitimate webpage it is attacking (its phishing target).

**Flexible Amine Sensor Based on Ultrathin Polyythiophene Thin Film Transistor**
The invention concerns the design and fabrication of ultrathin film nanostructures of polymer and low temperature processed self-assembly monolayer/metal oxide dielectrics for high sensitive flexible polymer thin film transistor-based amine sensors. The ultrathin monolayer polymer film is prepared by simple solution processes. The phase determination of the ultrathin polymer film is examined by grazing-incidence X-ray diffraction, SEM and AFM techniques. The presence of amine molecules is indicated by changes in the monolayer transistor.

Patents Recently Granted to CityU

**Transgenic Fish and Uses Thereof**
US9043995
Inventors: Professor Cheng Shuk Han et al
Department of Biomedical Sciences
The research group has developed transgenic brackish medaka (Oryzias melastigma), a highly sensitive sentinel for estrogenic chemicals. Estrogenic activity of water samples, food stuff, cosmetics and other commodities can be rapidly and accurately detected by in vivo observation of the onset of fluorescence signal and intensity in fish liver.

**Composite of Porous Substrate and One-Dimensional Nanomaterial**
US9029290
Inventors: Professor Lee Chun Sing et al
Department of Physics and Materials Science
The present invention relates to a composite of a porous substrate and one-dimensional nanomaterial, which is manufactured by a hydrothermal method. The method for manufacturing the composite of this invention is simple and low-cost, and the one-dimensional nanomaterial is homogeneously distributed on the porous substrate with tight binding at the interface.

**Method of Making Use of Surface Nanocrystallization for Building Reinforced Construction Structure**
US9021755
Inventors: Professor Lu Jian, Dr Wu Yufei
Department of Mechanical and Biomedical Engineering, Department of Architecture and Civil Engineering
The invention is designed to support the rehabilitation of concrete structures by means of a metallic reinforcement attachment. The attachment is treated with surface nanocrystallization, then secured to the substrate made of concrete. When the construction structure is under loading the spreading of strain can be reduced and thus avoids or delays complete detachment of reinforcement.

**Scattering Screen System, Method of Manufacture and Application Thereof**
US9019602
Inventors: Professor Lee Chun Sing et al
Department of Physics and Materials Science
The invention provides a high-efficiency scattering screen system to widen the viewing angle of monitors / displays and lighting angles of illumination devices, which is based on nanostructures of wide band gap materials composed of nanostructure arrays aligned uniformly on a transparent substrate. The substrate for depositing the nanostructures can be made of inorganic or flexible organic materials.
Construction Structure and Method of Making Thereof
US9010047
Inventors: Professor Lu Jian, Dr Wu Yufei,
Department of Architecture and Civil Engineering

It is estimated that rehabilitation of built structures accounts for over 50% of total spending in the construction industry. Externally-bonded high strength reinforcement is usually employed to reinforce substrate concrete, but that the adhesive bond between the reinforcement and the substrate concrete is usually relatively weak. The invention proposed offers a useful alternative to the above technologies.

Wideband Circularly Polarized Patch Antenna with Compact Size
ZL201110159803.8
Inventors: Professor Xue Quan et al
Department of Electronic Engineering

A wideband circularly polarized shorted patch antenna with compact size is presented. It consists of a slotted square patch, four sets of unbalanced arms and a ground plane. Comparing with the conventional CP patch antenna, this proposed antenna has much wider bandwidth (more than 2 times). It will have further applications in RFID readers and GPS terminal devices.

Structural Members with Improved Ductility
US8997437
Inventor: Dr Wu Yufei
Department of Architecture and Civil Engineering

Conventional reinforced concrete structures are made of steel reinforcement bars, but steel bars are susceptible to rusting and corrosion, which may lead to significant degradation of the concrete structures. The invention can increase the compression yielding of concrete structures.

Multiple View Display of Three-Dimensional Images
US8994786
Inventors: Dr Tsang Wai Ming Peter et al
Department of Electronic Engineering

The aim of this invention is to produce a 3D holographic image of a 3D scene that can be viewed from different vantage points. The holographic projection module includes a reproductor component capable of generating holographic data representative of real or synthesized 3D scenes, where the display component can be an LCD, spatial light modulator, or autostereoscopic display.

Light Transmissible Resonators for Circuit and Antenna Applications
US8988297
Inventors: Professor Leung Kwok Wa et al
Department of Electronic Engineering

Dielectric resonator antennas (DRAs) are widely used in wireless communications and the purpose of this invention is to integrate DRAs with solar panels. The DRA is designed to focus light impinging on a surface. The material for manufacturing a DRA should ideally be transparent borosilicate crown glass, for example Pyrex or K9 glass.

Nickel Complexes for Flexible Transistors and Inverters
US8981096
Inventors: Professor Chu Kim Ho Paul et al
Department of Physics and Materials Science

The invention relates to the development and synthesis of six nickel complexes and the use of nickel complexes in flexible thin film transistors and inverters. Semiconductor devices such as thin film transistors and inverters are widely used in applications such as liquid crystal displays, electronic paper and RFID tags.

Passive LC Ballast and Method of Manufacturing
US8952617
Department of Electronic Engineering

The invention relates to a method of manufacturing ballasts for high voltage discharge lamps. The method provides the passive LC ballast with an inductance and capacitance derived from a non-linear model. The purpose is to ensure that the lamp operates at a pre-determined lamp power. Compared with electronic ballasts, the new ballast has lower power loss and higher efficiency.
# CityU Business and Industrial Club

## Membership Application Form 会员申请表格

<table>
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<tr>
<th>Name of Applicant (Dr / Mr / Ms / Miss) (English 英文)</th>
<th>申请者姓名 (*博士/先生/女士/小姐) (Chinese 中文)</th>
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## Business Nature 业务性质

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## Mobile 手机

Email 电邮

Please tick the appropriate box(es) below if you want to obtain the relevant application information for:

- 1) CityU Library Borrower's Ticket (HKS1,000/year) 城大图书证 (每年港币 1,000 元)
- 2) CityU Credit Card (free) 香港城市大学信用卡 (免费)

I ___________________________ (name of applicant) hereby apply for membership of the CityU Business & Industrial Club (CUBIC). I confirm that the information furnished above is complete and accurate and it can be used by CUBIC for membership and CityU related purposes.

(申请人姓名) 欲申请成为城大工商协进会 (CUBIC) 会员，确认上述提供之资料正确无误，并可被用于与 CUBIC 会员事务及香港城市大学有关之事宜上。

Signature 签署: ___________________________

Date 日期: ___________________________

Enquiries 查询:

Ms Maggie Mak 麦浩清女士
Secretary, CUBIC 城大工商协进会秘书
Tel 电话: (852) 3442 6821
Email 邮件: mcmak@cityu.edu.hk
              cubic@cityu.edu.hk
Homepage 网址: http://www.cityu.edu.hk/kto/cubic

Please return this form by post to Knowledge Transfer Office, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong or by fax to (852) 3442 0883.

请将表格寄交香港九龙大马路香港城市大学
知识转移处 或 传真至 (852) 3442 0883

*delete as appropriate 请撕去不适用者