



香港城市大學  
City University of Hong Kong

# UGC KNOWLEDGE TRANSFER ANNUAL REPORT 2024 – 2025



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## **Executive Summary**

City University of Hong Kong (CityUHK) is dedicated to advancing technological innovations and expertise for the betterment of mankind.

In FY 2024-25, CityUHK has further strengthened its innovation and entrepreneurial landscape, as detailed in Section One of this report. A highlight of our achievements was the HK Tech 300 Expo, a large-scale innovation and entrepreneurship exhibition held in May 2025 on campus. This event featured approximately 300 startups incubated under HK Tech 300, our flagship entrepreneurial support initiative, along with over 60 roadshows during the two-day exhibition.

CityUHK has excelled in knowledge transfer and commercialisation, receiving the highest number of US utility patents among Hong Kong universities for nine consecutive years. In 2024, we were granted 95 US patents, ranking 32<sup>nd</sup> in the Top 100 Worldwide Universities for the number of US utility patents awarded.

In pursuit of excellence in research and university–industry collaboration, we established two new cross-disciplinary research institutes: the Institute of AI for Science and the Institute for Materials Innovation in collaboration with the École Polytechnique Fédérale de Lausanne (EPFL). These institutes serve as hubs for cutting-edge research, uniting investors, startups, industries, and researchers to tackle complex challenges and explore new frontiers.

To deepen research collaboration and knowledge transfer in the Mainland, we established the CityUHK–Qingdao Innovation Centre, the Baosteel–CityUHK Joint Research Centre, and the Institute of Heterostructured Materials in partnership with the Liaoning Academy of Materials. These initiatives reflect our commitment to enhancing collaboration and knowledge exchange in the region.

Lastly, Section Five shares impact cases that illustrate our concerted efforts in translating research outcomes and expertise into practical applications.

## 1. Innovation and Entrepreneurship Ecosystem – Innovating into the Future

CityUHK has a strong track record in bringing research outcomes to the market, particularly by supporting early-stage ventures through our flagship entrepreneurial initiative, HK Tech 300. In the year under review, our innovation and entrepreneurial landscape has been further strengthened, with developments detailed in the following paragraphs.

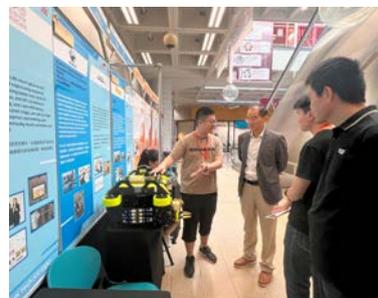
### 1.1 CityUHK Academy of Innovation

The CityUHK Academy of Innovation (CAI) was officially launched in January 2024 as a pioneering platform dedicated to fostering creativity, entrepreneurship, and cutting-edge research initiatives. Its mission is to cultivate a culture of innovation across various disciplines, empowering both students and faculty to explore novel ideas and develop solutions to real-world challenges.

CAI offers four major programmes designed to nurture entrepreneurial skills and innovative thinking:

- **Master of Science in Venture Creation (MSVC)**

The MSVC is an experiential programme specially designed to equip students with the comprehensive knowledge and skills necessary for successful venture creation. It connects students to innovation and entrepreneurship ecosystems, venture funding opportunities, and CityUHK's intellectual properties (IPs). The programme also engages senior business leaders and entrepreneurs who provide intensive one-on-one mentorship to student project teams. Launched in September 2024, the programme welcomed its first cohort of 79 students. By June 2025, these students had developed 21 startup business proposals. Of these, 17 projects applied for the HK Tech 300 Seed Fund, with nine receiving funding support, enabling them to kick-start their businesses and integrate into the HK Tech 300 system.



- **PhD by Innovation**

This research graduate programme enables doctoral candidates to explore innovation-driven fields, emphasizing practical applications, IP generation, and real-world impact. Since its inception in Semester B 2023-24, the programme has admitted seven PhD students from various disciplines.

- **Graduate Research and Innovation Trek Programme (GRIT)**

GRIT offers comprehensive and intensive training to empower faculty, research students, and staff in transforming their research into deep-tech start-ups. The third run of GRIT commenced in January 2025, involving 15 RAISE+ teams.

- **Overseas Start-up Technology Entrepreneur Programme (STEP)**

STEP aims to enhance undergraduate students' understanding of global innovation and entrepreneurship ecosystems by providing internship or attachment opportunities in start-ups and innovation hubs, both overseas and in the Mainland. The inaugural cohort, consisting of 14 students, participated in a 12-week internship during the summer of 2025. Six students interned at start-ups affiliated with Imperial College London or the University of Cambridge, while eight students interned at start-ups in E-town, Beijing. The programme offers valuable hands-on experience and leverages the CAI's extensive international partnerships to expose aspiring entrepreneurs to diverse ecosystems worldwide.



Through these programmes, CAI is committed to developing the next generation of entrepreneurs and innovators, equipping them with the skills and experiences necessary to thrive in a rapidly evolving global landscape.

## 1.2 HK Tech 300 Highlights

### 1.2.1 HK Tech 300 Expo

To showcase our achievements in translating research outcomes into practical applications, CityUHK hosted the HK Tech 300 Expo, a large-scale innovation and entrepreneurship exhibition, in May 2025 on campus. The two-day event featured approximately 300 start-ups incubated by CityUHK, with over 60 roadshows showcasing innovative solutions in Biotech & Health, ICT & AI, Advanced Tech & ESG, and Fintech.



The Expo Opening Ceremony was attended by Professor Sun Dong, JP, Secretary for Innovation, Technology and Industry of the HKSAR Government, along with CityUHK Council Chairman and members, Consul-Generals of Thailand and Vietnam, and representatives from the governments and partner organisations of 12 mainland cities involved in the HK Tech 300 National Start-up Competition.

Since its launch in 2021, HK Tech 300 has successfully incubated over 900 start-ups, with more than 200 receiving up to HK\$1 million each in angel funding. In addition to financial support and patent resources, HK Tech 300 provides extensive assistance, including business matching and co-investment opportunities, leveraging the expertise of over 250 mentors from diverse industries. The programme collaborates with 133 partners, including major business chambers, incubators,

accelerators, venture capitalists, and industry associations, offering a broad range of professional services and business opportunities to help participants thrive in a dynamic market environment.

To further nurture high-performing start-ups, a Business Advisory Board (BAB) was formed in April 2025 under CityUHK's investment vehicle, CityU Enterprises Limited, comprising seasoned industry experts.

### 1.2.2 HK Tech 300 International Start-up Competition

Building on the success of the inaugural “HK Tech 300 Southeast Asia Start-up Competition” in 2023, the second edition has been launched as the “HK Tech 300 International Start-up Competition,” extending support to start-ups beyond Southeast Asia as they expand into Hong Kong and the Mainland. This initiative also helps local start-ups attract global innovation resources and explore opportunities in overseas markets.



The International Competition will be held in collaboration with universities, business chambers, and incubators worldwide, featuring partners from eight countries, including those in the Belt and Road region, to be in line with CityUHK's Strategic Plan 2025-30: Brunei, Hungary, Indonesia, Kazakhstan, Malaysia, Thailand, Turkey, and Vietnam. This event will enhance CityUHK's and HK Tech 300's global reach and bolster our international presence. Approximately 50-60 nominations covering Biotech & Health, Fintech, Advanced Tech & ESG, and ICT & AI are expected to participate in online panel interviews planned for Q3 2025. The top 10 winners will receive up to HK\$1 million each in Angel Fund investment from HK Tech 300.

### 1.2.3 HK Tech 300 National Start-up Competition

The “HK Tech 300 National Start-up Competition” was first launched in 2022 to synergize the strengths and resources of Hong Kong and the Mainland, enhance cross-border innovation and technology collaboration, promote the application of CityUHK research achievements in the Mainland, and foster closer ties within the innovation and entrepreneurship ecosystem.

Riding on the success of previous editions, the third National Competition has been expanded to include 12 mainland cities: Beijing, Changsha, Chengdu, Chongqing, Dongguan, Hangzhou, Qingdao, Shanghai, Shenzhen, Suzhou, Wuxi, and Xi'an. Together with start-up teams from Hong Kong, around 50-60 nominated teams in Biotech & Health, Advanced Tech & ESG, and ICT & AI were invited to the semi-finals held online in late June 2025. The top 10 winners will each receive up to HK\$1 million in Angel Fund investment from HK Tech 300 and will advance to the Grand Final, where they will compete for the top three awards and other special prizes later this year.

### 1.2.4 Innovation@Community Carnival

CityUHK has always been committed to innovation and actively engaging with the community to enhance the quality of life through innovative achievements. From 2 to 5 January 2025, CityUHK hosted the "Innovation@Community Carnival" at D2 Place ONE in Lai Chi Kok. The event featured a series of exciting activities, providing visitors with the opportunity to experience the innovative spirit and achievements of the start-ups under the University's flagship innovation and entrepreneurship programme, HK Tech 300, as well as those of the University's partners and

CityUHK alumni, and to learn how these achievements contributed to the local community and addressed global challenges.



## 2. Facilitating Knowledge Transfer and Commercialisation

### 2.1 IP Management

The University has in place a well-established administrative framework and policy to protect the IP generated from its research activities. After a stringent vetting process, patent filing is pursued for inventions of high commercialisation value. In the year under review, 333 new patent applications were filed in the US, China, and other jurisdictions in various fields of technology, with 102 patents granted during this period. In June 2025, CityUHK's IP portfolio consisted of 857 patents granted and 1096 patents pending.

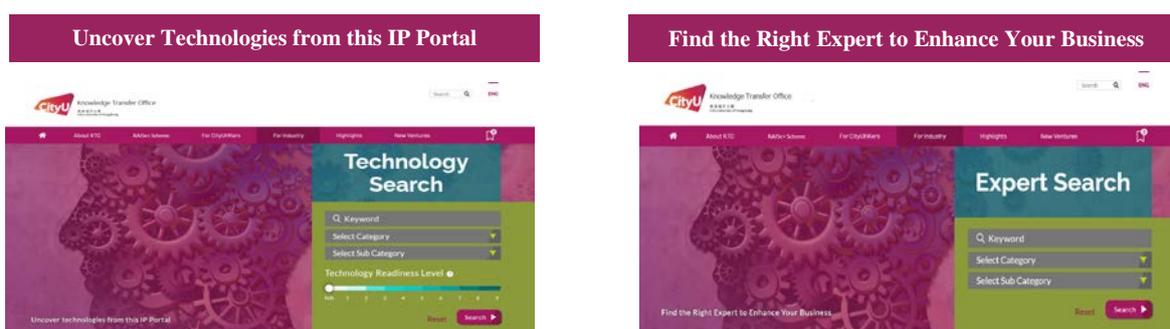
For the past nine years, CityUHK has received the highest number of US utility patents among Hong Kong universities. In the calendar year 2024, CityUHK was granted 95 US patents, ranking 32<sup>nd</sup> in the Top 100 Worldwide Universities for the number of US utility patents awarded. The University is committed to maintaining this leading position and excelling in this area.

### 2.2 IP Training

CityUHK jointly organised the AUTM Software, Data, and Digital Innovations IP Licensing Course with the Hong Kong Polytechnic University in August 2024. This two-day training attracted over 150 registrations and was specifically designed for professionals working with software, data, and other digital information assets. The course provided participants with an overview of basic IP principles, along with case studies from emerging topics such as artificial intelligence and machine learning training data. Attendees gained a better understanding of foundational issues, best practices, and tools for managing and licensing software, data, and digital IP assets. Special thanks were extended to the Intellectual Property Department of the HKSAR Government, a key sponsor of the event.



## 2.3 IP Portal and Expert Search Portal



CityUHK's Knowledge Transfer Office website hosts a list of IPs, the IP Portal, to broaden the marketing channels for licensing, as well as a list of experts, the Expert Search Portal, to help industry and businesses solve problems. The IP Portal offers Technology Briefs in layperson's terms in both English and Chinese, with an emphasis on applications and usage. Together, the two portals serve as effective channels for technology licensing and industry collaboration for research and consultancy.

## 2.4 Outreach

By participating in innovation exhibitions and events, CityUHK aims to showcase its latest inventions for commercialisation and expand its client base. The following exhibitions and events were joined during the year under review:

- Silicon Valley Invention Festival 2024, organised by the International Federation of Inventors' Associations (IFIA) in California, USA (26-28 July 2024)
- Science in the Public Service 2024, public lectures organised by government bureaux/departments of the HKSAR and other supporting organisations (August – December 2024)
- BIOHK 2024, organised by the Hong Kong Biotechnology Organization (1-14 September 2024)
- InnoCarnival 2024, organised by the Innovation and Technology Commission of the HKSAR Government (26 October–3 November 2024)
- Eco Expo Asia 2024, organised by the Hong Kong Trade Development Council (30 October – 2 November 2024)
- 4<sup>th</sup> Asia Exhibition of Innovation and Inventions Hong Kong, organised by Palexpo, Geneva (5-6 December 2024)
- 50<sup>th</sup> International Exhibition of Inventions Geneva, organised by Palexpo, Geneva (9-13 April 2025)
- Innovative Pathway – Hong Kong's New Era of Industry, an exhibition organised by the Hong Kong Science Museum (April to July 2025)



InnoCarnival 2024



BIOHK 2024



Silicon Valley Invention Festival

## 2.5 50<sup>th</sup> International Exhibition of Inventions Geneva

It was another triumphant year for CityUHK at the International Exhibition of Inventions Geneva (IEIG), one of the biggest global events showcasing innovations and inventions, as our professors and students collectively won a total of 33 awards, including one Special Prize, five Gold Medals with Congratulations of the Jury, nine Gold Medals, 16 Silver Medals, and two Bronze Medals. The recognition is a testament to CityUHK's global leadership in innovation and research excellence.



Among CityUHK's victorious teams at the 50<sup>th</sup> IEIG, ten are start-ups and teams nurtured by CityUHK's HK Tech 300. They secured two Gold Medals with Congratulations of the Jury, one Gold Medal, and seven Silver Medals, showcasing the strength of CityUHK's innovation ecosystem.

## 2.6 Promoting Knowledge Transfer beyond Science and Engineering Disciplines

To encourage knowledge transfer and nurture a knowledge-transfer culture in non-science disciplines, the Excellence in Knowledge Transfer Award has been offered since 2011. The Award gives recognition to faculty members in the College of Liberal Arts and Social Sciences (CLASS) who have made outstanding achievements in applying their knowledge to create a substantial social impact. The 2024-25 Excellence in Knowledge Transfer Award and Certificate of Merit winners were as follows:

Project Title	Department	Recipient
<b>Excellence in Knowledge Transfer Award</b>		
<i>Leveraging Big Data and AI to Combat Global Scams</i>	Department of Media and Communication	Professor LIU Xiaofan
<b>Certificate of Merit</b>		
<i>KeySteps@JC 2.0 – Bridging Developmental Gaps and Building Stronger Foundation for Better Life Outcomes for Young Children</i>	Department of Social and Behavioural Sciences	Professor Anna HUI Na-na, Professor Sylvia KWOK LAI Yuk-ching, Professor WONG Wing-kuen, Professor KWAN Chi-kin, Professor CHAN Siu-ming, and Professor KWOK Kim
<i>4Rs for a Better Family: A Community-based Randomized Controlled Trial to Enhance Family Adaptation Among New-arrival Parents and Children</i>	Department of Social and Behavioural Sciences	Professor Nancy YU Xiaonan

### 3. Striving for Excellence in Research and University–Industry Collaboration

#### 3.1 Hong Kong Institute of AI for Science

Following the establishment of the Institute of Digital Medicine in April 2024, CityUHK announced the establishment of the Hong Kong Institute of AI for Science (HKAI-Sci) in October later that year. Several Memoranda of Understanding were signed with academic and industry partners to mark this significant milestone in the realm of scientific research and technological innovation. Leveraging CityUHK’s leading role in the field of AI and related disciplines, HKAI-Sci aims to become an international hub for scientific exploration through AI, offering a premier and open platform for researchers and practitioners to push the boundaries of AI in science. The Institute will encourage interdisciplinary collaboration among faculty and students in the fields such as biology, chemistry, material science, and more. The HKAI-Sci will advance both “AI as a Science” and “AI for Science”, fostering the development of revolutionary technologies with a global impact. These efforts will lead to the creation of revolutionary technologies with a far-reaching global impact.



#### 3.2 Institute for Materials Innovation

On 11 February 2025, CityUHK and École Polytechnique Fédérale de Lausanne (EPFL) announced the establishment of the University’s third cross-disciplinary research institute in recent years - Institute for Materials Innovation. Several Memoranda of Understanding were signed with industry partners to co-develop a premier institute dedicated to advancing research in cutting-edge areas of materials science.



The Institute for Materials Innovation will serve as a hub for innovative research, leveraging the unique strengths of both institutions. This collaboration aims to foster interdisciplinary cooperation among diverse scientific disciplines and facilitate interaction between industry, academic researchers, and investors.

Together, CityUHK and EPFL will explore the frontiers of materials science, developing innovative solutions to address pressing global challenges. The synergy between the two institutions will enhance research capabilities and create unique opportunities for students and researchers alike.

EPFL is renowned for its rigorous academic standards and its emphasis on applied research, particularly in the fields of nanotechnology, robotics, and sustainable energy. In the QS World University Rankings, EPFL is ranked 26<sup>th</sup>, and it holds the 10<sup>th</sup> position in the QS Subject Rankings for Materials Science, consistently placing within the world Top Ten for the last three years.

### 3.3 RAISE+ Scheme

In September 2024, the Innovation and Technology Commission of the HKSAR Government invited applications for the second solicitation exercise for RAISE+. Following a rigorous selection process, four applications nominated by CityUHK were selected for funding support in principle. This brings the total number of projects funded under RAISE+ to nine, including five projects approved in the first solicitation exercise.

The four applications recommended for funding support in principle are:

	Project Title	Person-in-Charge
1	<i>Development and Application of Large-scale Energy Storage and UPS Systems Based on Intrinsically Safe Aqueous Batteries</i>	Professor Qichun ZHANG
2	<i>Breakthrough Cathode Materials for Next-generation Lithium-ion Batteries</i>	Professor LIU Qi
3	<i>Chemical Additive-enabled Advancements in Electroplated Copper for Advanced Electronic Packaging and 3DIC Applications</i>	Professor FENG Shien-ping
4	<i>In Vivo Somatic Human Genome Editing to Cure Genetic Diseases: Transforming Novel Genome Editors and Engineered Delivery Vehicles to Clinical Trial</i>	Professor ZHENG Zongli

### 3.4 InnoHK World-Class Research Clusters

Entering into their fourth year of operation, the three InnoHK research centres established under CityUHK have matured into platforms for high-impact research translation, commercialisation, and interdisciplinary collaboration. These centres have made steady progress in bridging the gap between academic research and real-world applications — achieving this not only through technological innovation but also via strategic industry partnerships, licensing activities, and the deployment of solutions in clinical, financial, educational, and community settings.

In 2024-25, the Hong Kong Centre for Cerebro-cardiovascular Health Engineering (COCHE) significantly scaled its commercialisation efforts and deepened its integration with regional and international healthcare ecosystems through several strategic partnerships. The Centre established collaborations with leading institutions, including AstraZeneca China, Shanghai Innovation Bank, and Shanghai Renji Hospital, thereby expanding its influence across the biomedical innovation landscape in the Mainland. The launch of joint innovation centres with Fudan University and Wuxi I•Campus marked a milestone in translating cerebro-cardiovascular research into practical solutions. Initiatives include AI-powered cerebro-cardiovascular disease databanks, interdisciplinary talent programmes, and early community screening technologies. With eight start-up companies currently incubated under COCHE, the Centre has positioned itself as a key player in bridging research, industry, and policy to advance healthcare innovation at scale.



Building on its mission to drive innovation in financial technology, the Laboratory for AI-powered Financial Technology (AIFT) has enhanced its industry collaborations and expanded the real-world applications of its research. In August 2024, AIFT formed a strategic partnership with Changyin Technology to develop AI-driven solutions for the cross-border e-commerce market, combining strengths in big data analytics and intelligent risk management to support both online merchants and financial institutions. In 2025, AIFT renewed its collaboration with Bank of China (Hong Kong) to further support SME-focused initiatives. Together, they launched a new service for Amazon sellers, utilizing AIFT's data analysis capabilities to help banks better assess e-commerce businesses. This initiative enabled a fast-track account opening process and provided more accessible, tailored financial services for the digital commerce sector. AIFT has scaled up its commercialisation efforts and broadened the deployment of its fintech solutions across financial and e-commerce ecosystems.



The Centre for Intelligent Multidimensional Data Analysis (CIMDA) has advanced its commercialisation efforts through technologies that promote well-being and safety in daily life. Its AI-powered platform, FunSpark, features over 20 interactive activities designed to support cognitive development, physical coordination, and emotional wellness through engaging, gamified experiences for users of all ages. Additionally, the Fall Prevention System applies intelligent sensing and data analysis to detect fall risks in elderly homes, enabling early intervention for safer living environments. In collaboration with the Hong Kong Housing Society, the system has been deployed in 300 homes as a step toward large-scale adoption. These innovations, along with enhancements to existing systems, were showcased at major expos to raise public awareness and accelerate community-wide implementation. CIMDA continues to accelerate its commercialisation process and advance the real-world deployment of its technologies across community and industry sectors.



#### 4. Deepening Research Collaboration and Knowledge Transfer in the Mainland

##### 4.1 CityUHK-Qingdao Innovation Centre

With support from the Qingdao government, CityUHK established the CityUHK-Qingdao Innovation Centre in the West Coast New Area of Qingdao in 2024. This initiative aims to promote and facilitate collaboration between higher education institutions in Hong Kong and Qingdao. By leveraging CityUHK's world-renowned academic research achievements and international reputation, the collaboration seeks to enhance each region's strengths and cultivate talent in innovation and technology, ultimately creating synergy between the two areas.



## 4.2 Baosteel-CityUHK Joint Research Centre

CityUHK and Baoshan Iron & Steel Co., Ltd (Baosteel) have jointly established the Baosteel-CityUHK Joint Research Centre (BCJC). An opening ceremony was held on 2 July 2025. The BCJC aims to create a world-class platform for industry-academia research through university-industry collaboration and driving digital transformation in the sector. The BCJC will focus on advanced areas of the steel industry, including high-end development, intelligent manufacturing, green transformation, and enhanced efficiency. Through collaborative projects, the BCJC aims to bring together top talent and establish comprehensive mechanisms for talent development. The establishment of the BCJC represents a significant milestone in technological innovation for both CityUHK and Baosteel. It will foster cross-disciplinary collaboration in new materials, AI and advanced manufacturing, contributing development of Hong Kong and the nation.



## 4.3 Institute of Heterostructured Materials and Strategic Research Collaboration with Liaoning Academy of Materials

CityUHK was invited by the Liaoning Academy of Materials (LAM) to establish the Institute of Heterostructured Materials (IHM). IHM is positioned as a world-leading research hub for advanced structural materials. This initiative has created significant opportunities for CityUHK through long-term research contracts, strategic collaborations with major Chinese industries, and an enhanced academic presence in the materials science field. The partnership fosters knowledge transfer and innovation in the rapidly growing area of heterostructured materials.

LAM is a provincial R&D institution established by the Liaoning Provincial People's Government and boasts one of the most advanced research infrastructures for structural materials globally.

## 5. Impact Cases

### 5.1 “Fostering Innovation for Resilience and Sustainable Transformation” (FIRST)



CityUHK is committed to sharing technological innovations and expertise for improving life, especially for low-income, disadvantaged, or resource-scarce communities. “Fostering Innovation for Resilience and Sustainable Transformation” (FIRST) is a new initiative spearheaded by CityUHK, and endorsed by the United Nations Educational, Scientific and Cultural Organization (UNESCO). This global initiative is designed to drive innovation in sustainability, advance measurable progress towards the UN’s Sustainable Development Goals (SDGs), and promote

inclusive global collaboration and capacity building under the auspices of the UN International Decade of Sciences for Sustainable Development (2024-2033). In the first round of applications, only 30 proposals worldwide were endorsed by UNESCO.

The first phase of the FIRST Programme was kicked off in June 2025, targeting pilot regions with hot climates and limited access to reliable electricity. This phase will focus on four core innovations, each designed to provide scalable, low-cost solutions that can be rapidly adopted in low-income areas. These innovations are aligned with key SDGs, including Clean Water and Sanitation (SDG 6), Affordable and Clean Energy (SDG 7), Sustainable Cities and Communities (SDG 11), and Climate Action (SDG 13).

This phase of the Programme will see the development of innovative technologies such as passive radiative cooling coatings using local waste materials for lowering temperatures of buildings, affordable printable solar films for generating electricity in rural areas, the conversion of waste biomass to energy for the circular economy, and a human-powered sanitation system for generating potable water.

The FIRST Programme began with partners from 16 countries, including Australia, Bangladesh, China, Colombia, Ethiopia, Germany, India, Indonesia, Kazakhstan, Malaysia, Morocco, Saudi Arabia, South Africa, Switzerland, the United Arab Emirates, and the United Kingdom and endorsements from over 20 cities worldwide, highlighting the Programme's global relevance and growing momentum.

By co-developing transformative, scalable, and cost-effective technologies with international partners, the FIRST Programme can enhance environmental sustainability, promote social equity, and improve quality of life, particularly in underserved communities disproportionately affected by global threats such as climate change, contaminated water, poor sanitation, and the energy crisis.

The Programme reflects CityUHK's commitment to Innovating into the Future and offering tangible solutions to global challenges.

## 5.2 First Shenzhen-Hong Kong Intellectual Property Forum and Launch of the National Intellectual Property Operation (Hetao Shenzhen) Transformation Pilot Platform

To fully align with the national initiatives to accelerate the development of new quality productive forces and promote intellectual property (IP) strategies, and to seize the development opportunities presented by the Hong Kong Special Administrative Region's (HKSAR) recently released Development Outline for Hong Kong Park in the Hetao Shenzhen-Hong Kong Science and Technology Innovation Co-operation Zone, CityUHK hosted the first Shenzhen-Hong Kong Intellectual Property Forum on 4 December 2024.



The event also featured the launch ceremony for the National Intellectual Property Operation (Hetao Shenzhen) Transformation Pilot Platform (Pilot Platform) (國家知識產權運營(深圳河套)國際轉化試點平台). The forum brought together officials, experts, scholars, industry leaders, and corporate representatives from the technology transfer fields at the national, provincial and city levels, along with those from HKSAR and Shenzhen, to promote the conversion and application of IP in the domestic market and to assist in the development of the innovation ecosystem in the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), national level, and globally.

The establishment of this Pilot Platform marks a significant step forward in cooperation between the HKSAR and Shenzhen in technology transfer and IP. It will leverage CityUHK's research capabilities and international innovation resources, guided by the China National Intellectual Property Administration (CNIPA) (國家知識產權局), to build an internationally distinctive industry-university-research collaboration system by developing a global IP database and addressing the needs of the domestic manufacturing industry.

### 5.3 Revolutionising Toll Collection with CityUHK's Advanced Antenna Design

CityUHK's wideband antenna technology has transformed global toll payment systems. A research team from the Department of Electrical Engineering developed a compact, planar antenna that integrates an array, phase shifter, and power divider to create a focused communication beam. This innovative design is easy to fabricate and highly efficient, offering wideband performance and strong directionality. Recognised as the world's thinnest RFID reader, it supports eco-friendly solutions, with over 3,500 units produced by the end of 2024.

As a global leader in wideband technologies, CityUHK's antenna team has delivered key innovations supporting 2G to 5G networks. Building on this expertise, they created a patented thin-profile RFID planar antenna for Electronic Toll Collection (ETC) systems in collaboration with Star Systems International Limited (SSIL). The antenna combines an array, phase shifter, and power divider to generate a focused beam between near-field and Fresnel regions. Its design prioritises ease of fabrication while ensuring wideband performance, directionality, and efficiency.

Optimised for multi-lane gantry installations, the antenna minimises shipping and inventory costs while maintaining excellent performance. It consistently detects vehicles travelling at speeds up to 120 mph, enabling true free-flow tolling without the need to slow down, thereby saving fuel or electric power. Field tests have demonstrated a 50% improvement in transaction time stability, enhancing traffic flow and user satisfaction.

The "Avior Antenna," as named by SSIL, has been widely adopted for toll systems in cities across the globe, including the USA, Hong Kong, Taiwan, Vietnam, India, Malaysia, and various countries in Europe and the Americas.

### 5.4 CITY IN TIME – Hong Kong's First Augmented Reality Tourism Experience



*CITY IN TIME* revolutionises heritage exploration in Hong Kong by seamlessly blending augmented reality (AR) with historical imagery, offering users an immersive journey into the past landscapes of old Hong Kong.

*CITY IN TIME* is Hong Kong's pioneering augmented reality tourism experience app, designed to illuminate the city's rich history by transforming smartphones into interactive AR windows. These windows overlay 360-degree panoramic images of historical Hong Kong onto the user's current surroundings, creating a captivating blend of past and present.

Users can engage with this immersive experience at the designated locations throughout Hong Kong through the mobile app and *CITY IN TIME* website. Commissioned by the Hong Kong Tourism Commission, the project aims to enhance the experiences of both locals and tourists through the innovative fusion of art and technology.

Its first phase development includes a collection of 28 heritage-rich sites, including iconic locations such as Tsim Sha Tsui, Central, Yau Ma Tei, Jordan, Sham Shui Po, and the Peak. Subsequently, the app expanded to include six additional sites in Lei Yue Mun and five in Tai Hang. The latest phase of development introduced enhanced features designed to foster deeper engagement with Hong Kong's historical and cultural landscape, providing users with a more immersive experience.

## Summary of Knowledge Transfer Performance Indicators

(Amounts are in Hong Kong dollars)

Performance Indicators	2024/25
<b><sup>1</sup>Intellectual Property (IP)</b>	
No. of patents filed	333
No. of patents granted	102
<b>IP Licensing</b>	
No. of newly signed and ongoing licensing agreements (exclusive of evaluation licence agreements)	107
<b>Industry Engagement</b>	
<sup>2</sup> No. of collaborative research projects and income thereby generated (inclusive of ongoing and new projects)	132 / \$69M
<sup>2</sup> No. of contract research projects (other than those included in “collaborative researches” above), and income thereby generated (inclusive of ongoing and new projects)	265 / \$202M
No. of consultancies, and income thereby generated	53 / \$11.25M
<b>Continuing Professional Development (CPD) courses</b>	
Income received from and number of attendees of CPD courses (inclusive of professional doctorate programmes and taught postgraduate programmes except for PCLL)	\$2B / 13,000
<b>Community Engagement</b>	
No. of public lectures/symposiums/exhibitions and speeches to a community audience organised/co-organised by CityUHK (seminars and workshops are included)	217
No. of performances and exhibitions of creative works (by staff or students) organised/co-organised by CityUHK	20
No. of staff engaged as members of external advisory bodies including professional, industry, government, statutory or non-statutory bodies	367

<sup>1</sup> The reported figures include the patents of the University’s mainland research set-ups.

<sup>2</sup> Research projects of the University’s mainland research set-ups are included. The reported income represents the funds received during the year. Typically, funding for a research project is disbursed in instalments.

Performance Indicators	2024/25
<b>Entrepreneurship</b>	
<sup>3</sup> Number of start-ups/projects (championed by our students/alumni/staff, inclusive of those championed by non-CityUHK members but using CityUHK IP) which have received CityUHK entrepreneurial funding/investment support	87

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<sup>3</sup> The figure is derived from the summation of the number of recipients under different entrepreneurial funding and investment schemes of the University during the reporting period.