

HKU INNOVATING FOR IMPACT

innovate today
inspire tomorrow

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Message from Vice-President Pro-Vice-Chancellor (RESEARCH)

Research and innovation have never mattered more to our collective future. New technological and scientific advances are opening avenues for improving human life, society and the welfare of the planet. Nowhere is this more evident today than in China. The central government's 15th National Five-Year Plan approved in 2026, establishes innovation and technological self-reliance as core drivers of the nation's future economy. Hong Kong is a key hub in realising this vision. As the city's premier university, ranked 11th in the world, HKU is poised to be a major contributor to its success.

Hong Kong has long served as an important conduit, facilitating the flow of labour and goods and, more recently, of professional services and financing. Momentum is now building towards the next phase of our city's development, as a place where technologies, knowledge and high-calibre talent flow through Hong Kong, disperse into the world, and circulate seamlessly across interconnected communities. With the support of the Hong Kong and central governments and industries, the city is making substantial efforts to build its innovation and technology capacity, and to welcome partners from across the region and beyond.

HKU plays an important role in this process. Our high global standing reflects our sustained effort to strengthen our research capacity and to attract some of the world's finest scholars to join our ranks, including two Nobel Laureates and a Fields Medallist. Our academics are active across the full spectrum of research, from blue-sky discovery to translational work that carries ideas from concept into tangible solutions, creating lasting impact for society.



Yet that journey from the laboratory to the end user is rarely a simple one. While investing heavily in building our research capacity, the University is equally mindful of the need to support its translation. This means providing not only guidance and resources, but also connections outside the University to organisations and industries that can help good ideas succeed.

This is the thinking behind HKU RISE: Research, Innovation, Strategic Partnerships and Entrepreneurship – where all four pillars are actively synergised to work together at HKU. Just as we build research capacity, we are equally committed to strengthening our efforts to carry that research beyond the walls of academia.

HKU has made dedicated efforts to help our researchers connect with industry partners, and help industry find its way to us. On the innovation front, we have programmes in place to enable more technologies, patents, licences, and startups to reach the world. On the partnership front, we multiply the encounters between our researchers and the wider community – whether by lending the government our expertise, co-designing programmes, pairing HKU startups with angel investors, or engaging with industries to scale our research for markets. On entrepreneurship, we provide not only the crucial initial stage financial and advisory support, but an ecosystem of industries, entrepreneurs, alumni, donors and venture partners – including established enterprises in the Chinese Mainland and around the world – who can help extend HKU's contribution far beyond the University's boundaries.

These efforts provide stepping stones to success – although, in the world of startups and innovation, success is far from guaranteed. But failure, approached in the right spirit, can spur further success. The more we attempt, the greater our

chances of lasting impact; the more startups we incubate, the greater the chance that one will hit the mark.

Beyond our own determination, the broader environment also plays a critical role. Hong Kong offers innovators tremendous opportunities, perhaps the best in the world. Sitting next to one of the largest markets in the world, the city has opened its doors to welcome top talent from around the globe. We are experiencing a surge in research unlike any other period in history, with no signs of slowing down, thanks to the community taking the lead in funding and prioritising innovation. These all add up to an unparalleled opportunity.

“ **HKU can be a major force in creating a global innovation hub based in Hong Kong and the Greater Bay Area.** ”

HKU stands at the forefront of the possibilities this presents. We have been building a strong foundation that will enable us to accomplish even more in research and translation in the years ahead. By bringing together our strengths in concert, we proudly lead the way forward with the ultimate aim of making positive impact in the world.

Anderson Shum

Professor Anderson H. C. Shum, MH
Vice-President and Pro-Vice-Chancellor (Research)

Message from Government



Professor Dong Sun, JP

Secretary for Innovation, Technology and Industry, Government of the Hong Kong Special Administrative Region

Innovation and technology (I&T) is at the heart of Hong Kong's future development. As the city accelerates its progress towards becoming an international I&T centre and contributing to the country's high-quality development, our universities play an indispensable role in advancing knowledge, nurturing talents, and transforming research into real-world impact.

HKU has consistently demonstrated excellence in research, innovation, and global collaboration. As one of the key contributors to Hong Kong's vibrant I&T ecosystem, HKU continues to drive forward cutting-edge research, knowledge transfer, and entrepreneurial endeavours that benefit society and support economic development.

“ **Universities are important drivers reinforcing Hong Kong's position as a global I&T hub, and strategic players in the Northern Metropolis Development under Hong Kong's first Five-Year Plan.** ”

My heartfelt congratulations to the University and its researchers on their remarkable achievements. I look forward to their continued contributions to Hong Kong, our nation, and the global innovation community as they advance impactful innovation and further the boundaries of knowledge.

Message from Industries



Dr Zibin Ma

**President and Director, China Mobile (Hong Kong) Innovation Research Institute
Director and Executive Vice President, China Mobile International Limited**

As Asia's premier institution of higher learning, HKU has long been distinguished by its outstanding achievements in scientific research and innovation, delivering numerous breakthroughs in technological advancement in Hong Kong and around the world.

China Mobile is deeply honoured to partner with HKU to conduct in-depth collaboration in critical emerging fields such as 6G, AI and Web3.0, jointly driving the research, development and translation of frontier technologies.

China Mobile is vigorously advancing the integrated development of its "Three Networks" – the communications network, the computing power network and the intelligent network – while continuing to strengthen, optimise and expand its "Three Core Businesses" of communications services, computing power services and intelligent services, accelerating its transformation from an information and communications operator to a world-class technology services company. The realisation of this ambitious vision depends upon a continuous stream of top-tier research talent. The China Mobile (Hong Kong) Innovation Research Institute remains committed to its mission of pooling global innovation resources.

“ **We look forward to joining hands with HKU to fully leverage the strengths of technology professionals with international vision and innovative capabilities, jointly deepening collaboration across industry, academia, research and application, and translating innovative ideas into practical solutions that benefit all sectors.** ”

The HKU Innovation Week brings together students, faculty members, industry leaders and community partners to celebrate research achievements and foster cross-sector collaboration – a vivid embodiment of this vision. On the occasion of this publication, I would like to extend, on behalf of the China Mobile (Hong Kong) Innovation Research Institute, our sincere congratulations to HKU. May HKU continue to lead the way in innovation, working with partners from all sectors to drive sustained momentum for Hong Kong's development as an international innovation and technology hub.

Message from Researchers



Professor Ferenc Krausz

**Nobel Laureate,
Chair Professor of Laser Physics,
Department of Physics,
Faculty of Science, HKU**

It always fascinates me to enter into a world which is not known to humans. More often than not, this journey is marked by setbacks, unexpected results, and ideas that do not work as planned. Research naturally consists of failures. Yet with each failure, we gain new knowledge, uncover new insights, and improve our chances of succeeding in the next step.

As one of the world's leading universities, HKU plays a vital role in creating an environment where this process can flourish. It is a place where researchers and students alike are encouraged to embrace experimentation, learn from failure, and continually push the boundaries of knowledge. Every step we take in addressing a challenge can reveal new questions, inspire new ideas, and create new knowledge.

Our exceptional research capabilities, world-class facilities, and strong culture of interdisciplinary collaboration provide fertile ground for innovation. By attracting outstanding talent from Hong Kong, the region, and around the world, HKU enables the best minds to join forces in pursuit of ambitious goals and meaningful impact.

“**Together, we advance knowledge, foster new ideas, and translate discoveries into meaningful impact for humanity.**”

Message from Investors



Ms Clara Chan

**Chief Executive Officer,
Hong Kong Investment
Corporation Limited**

We extend our warmest congratulations to the HKU Innovation Week. As a global centre of academic excellence, HKU attracts outstanding talent, advances frontier research, and generates breakthrough technologies that reshape what is possible.

HKU is a key partner that shares our vision of building a vibrant ecosystem where capital, technology, talent, and industry partners thrive together. Our collaboration is already delivering results. Last year, the HKIC and our investment partners joined forces to establish a dedicated fund with HKU to invest in and support high-potential spin-offs from the university, turning academic excellence into economic impact.

As the Patient Capital investment flagship wholly owned by the HKSAR Government, the HKIC carries a dual mandate — namely, generating reasonable financial returns over the medium to long term, while fuelling the growth engines of tomorrow's economy and society of Hong Kong. We pursue our "Investment+" path with dedication, speed, and strategic depth, to groom future industries, support emerging sectors and transform traditional ones in service of Hong Kong's long-term competitiveness, and in line with national priorities and the 15th Five-Year Plan.

To date, the HKIC has invested in over 200 companies across high-growth, high-impact sectors, including Hard and Core Technology, Biotechnology and Health Technology, New Energy and Green Technology, as well as relevant sectors and applications. With over 70% of our invested capital deployed at early and growth stages, we are not just funding ideas, but anchoring ambitions. Every dollar we invest has now attracted over 8 dollars of long-term market capital, a multiplier that reflects our guiding role and the global market confidence in Hong Kong's innovation stories. We have also bridged our portfolio companies to overseas markets, scaling their presence from local to international level.

The future belongs to those who build it – and Hong Kong is building it now. We look forward to deepening our partnership with HKU to empower more innovators and write the next greater chapter of Hong Kong's future.

“**Together, we can cultivate future innovators, support high-potential ventures, and contribute to Hong Kong's ambition of becoming a globally recognised centre for innovation, technology, and investment.**”

Message from Alumni



Dr Winnie Tang, MH, JP
Chief Convenor,
HKU Super Angel Network

On behalf of the HKU Super Angel Network, I am delighted to extend our warmest congratulations on the opening of HKU Innovation Week. This remarkable event celebrates the creativity, dedication, and entrepreneurial spirit that continue to define and enrich our university community.

Innovation rarely begins with a single idea or a lone effort. It takes shape when people with diverse perspectives come together — sharing insights, challenging assumptions, and turning bold imagination into meaningful progress. The HKU Super Angel Network is honoured to stand alongside promising researchers and students, providing the guidance and capital they need to help their visions take flight and create lasting value.

As we look ahead to the inspiring projects featured throughout this week, we hope this gathering will spark stronger connections and deeper collaboration.

“By working together, learning from one another, and co-creating with purpose, we accelerate innovation and create a more resilient, sustainable future with more opportunities.”

With shared vision and belief, we look forward to contributing to a brighter tomorrow for Hong Kong. Congratulations to everyone involved, and may HKU Innovation Week ignite ideas that endure.



Global Recognition & Achievements

A World-Leading University with Impact

Generate sustainable value to transform humanity's future

#1 Asia
University
Quacquarelli Symonds
(QS) Rankings 2026

#11 World
University
Quacquarelli Symonds
(QS) Rankings 2027

2 Nobel
Laureates

1 Fields
Medallist

5 State Key Laboratories
hosted by HKU
33.3% of Total SKLs in Hong Kong

8 InnoHK
R&D Centres





Professor Zhiwei Chen

Suen Chi-Sun Professor in Clinical Science,
Director, HKU AIDS Institute,
Chair of Immunology & Immunotherapy,
School of Clinical Medicine,
Department of Microbiology,
LKS Faculty of Medicine

Breakthrough Vaccine Advances To Human Trials For HIV/AIDS

A therapeutic vaccine patented at HKU by Professor Zhiwei Chen is proceeding to clinical trials, demonstrating strong potential as a functional cure for HIV/AIDS.

The HIV virus has challenged scientists since its discovery in the early 1980s as it is extremely difficult to completely eradicate in patients. To date, the virus has claimed over 44.1 million lives with an estimated 40.8 million people currently living with HIV worldwide. However, a key discovery by Professor Zhiwei Chen, Suen Chi-Sun Professor in Clinical Science and Chair Professor of Immunology and Immunotherapy, has led to the development of ICVAX® — a first-in-class therapeutic DNA vaccine capable of significantly enhancing cellular immunity and providing long-term control of the virus, potentially rendering it undetectable.

The patent behind the development of ICVAX® has been exclusively licensed worldwide by HKU to Yicura BioMed (formerly Immuno Cure), a biotechnology company based in Hong Kong Science Park and co-founded by Professor Chen, Dr Xia Jin, Mr Tom Lau and Dr Percy Cheng.

“We have achieved sustained, long-term control of the virus in animal models to the point that it is undetectable in the absence of antiretroviral treatment,” Professor Chen noted.

“It will be a major scientific achievement if we can replicate our findings in patients, as the current drug therapy for HIV/AIDS has accumulated toxic issues.”

Professor Zhiwei Chen



From Patents to Human Trials

ICVAX® is built on the patented “PD-1-Enhanced Vaccine Technology Platform”, which enables targeted delivery significantly boosts antigen presentation, eliciting a robust, broad-spectrum, and polyfunctional T-cell response. Beyond controlling viral infections, this platform shows considerable promise in suppressing cancer tumour growth. In 2013, Professor Chen and his team discovered that the PD-1-enhanced vaccination promotes CD8 T-cells responsible for killing virus-infected or cancer cells. In HIV infection, such killer T-cells contribute significantly to control of HIV infection.

Building on this foundation, Yicura BioMed developed ICVAX® that effectively stimulates killer T-cell function. This approach proved highly successful in monkey studies with over 6-year sustained viremia control without antiretroviral treatment. The underlying technology is protected by two patents filed and registered by HKU and exclusively licensed to Yicura BioMed.

With funding from Yicura BioMed, which received investment from the Alibaba Entrepreneurial Fund managed by Gobi Partners, Hong Kong Science Park and Theme-Based Research Scheme (T11-706/18-N), ICVAX® has completed its first-in-human National Medical Products Administration-approved Phase I clinical trial at Shenzhen Third People's Hospital. Most participants receiving the optimal dose exhibited more than a twofold increase in T-cell responses. The trial confirmed the vaccine's excellent safety and immunogenicity. These milestone findings were recently published in the peer-reviewed international journal, the *Journal of Infectious Diseases*.

In early 2026, Yicura sponsored a complimentary Hong Kong Department of Health-approved Phase I trial study that examines ICVAX® delivery techniques was launched to optimise the vaccination method. This study, conducted in collaboration with the HKU AIDS Institute, the Chinese University of Hong Kong, and the Greater Bay Area International Clinical Trials Centre (BAYTRIAL) of Shenzhen, received support from two government funding schemes: the Public Sector Trial Scheme of the Innovation and Technology Fund and the Theme-Based Research Scheme (T11-702/24-N). The latter will also fund upcoming Phase II trials.

ICVAX® gained further recognition by winning the National

Grand Prize of the 1st Greater Bay Area Entrepreneurship Competition in September 2025 and continues to attract interest from additional investment funds. In May 2026, the dedicated research facility for ICVAX® was inaugurated into the Center of International Innovation for Technology and Science (CIITS) of the National Technology Innovation Center (NTIC) located in Hetao, Shenzhen. By providing incubation and technology transfer support, CIITS aids ICVAX® in establishing standardised immune and viral monitoring systems, ultimately accelerating the vaccine's clinical development and commercialisation.

From Clinical Success to Market

By boosting targeted T-cell immune responses, ICVAX® aims to suppress HIV replication without the need for lifelong daily medication of the antiretroviral therapy (ART). Having successfully completed Phase I trials with promising safety and immunogenicity profiles, the vaccine is now poised to enter Phase II clinical trials for more extensive evaluation in humans. Upon achieving the primary endpoints in Phase II, Yicura plans to seek Breakthrough Therapy Designation for ICVAX®, targeting commercialisation as early as 2029 and offering a transformative new solution for global HIV treatment.

Bringing this groundbreaking technology from the laboratory to patients has required extensive support across multiple areas, including strategic partnerships, funding, and navigation through cross-border regulatory requirements. In June 2025, Yicura signed an agreement with U.S.-based PharmaJet to evaluate the administration of ICVAX® using its needle-free injection system, enhancing intramuscular delivery and patient experience. In July 2026, Yicura partnered with international contract research organisation OPIS to leverage their full-service regulatory expertise and multi-country trial infrastructure. In addition, Yicura commissioned Wuxi Biologics to be the exclusive global contract manufacturer of ICVAX®. Together, these cross-border collaborations establish a robust operational framework to execute multi-region clinical trials and expand ICVAX® into international markets.

“The beauty of our work lies in developing first-in-class vaccine therapies. The University has provided invaluable assistance in negotiating with business partners and connecting us with Yicura's potential investors and collaborators, enabling us to secure the funding needed to advance our clinical trials,” said Professor Chen.



Professor Mingxin Huang

Chair Professor,
Materials Technology,
Head, Department of
Mechanical Engineering,
Faculty of Engineering

A Cool Solution For Semiconductors

Dynano Semiconductor Technology Ltd., an HKU-incubated startup, specialising in advanced packaging and thermal management solutions to tackle the critical challenge of semiconductor overheating. The company is preparing to launch its breakthrough technology into the global market.

Semiconductors are essential to many of the most future-focused innovations, from electric vehicles and drones to energy storage systems. However, they have a major limitation: inefficient heat dissipation, particularly in high-speed computing and high-power applications. Overheating not only reduces performance but can also create serious safety risks.

Addressing this challenge, Professor Mingxin Huang, Chair Professor of Materials Technology in the Department of Mechanical Engineering, and his team have developed advanced thermal management technologies for third-generation semiconductors. Their solutions effectively mitigate overheating while being scalable for real-world industrial application and manufacturing.

To bring the technology to market, Professor Huang founded the startup Dynano Semiconductor Technology Ltd., which has received substantial developmental support from the HKU Technology Entrepreneurship Core (TEC) and HKU Entrepreneurship Engine Fund (EEF). It has also attracted early venture capital investment from CAS Star Technology Venture Capital and is gearing up for mass production in the Chinese Mainland.

For Professor Huang, this achievement underscores Hong Kong's and HKU's unique strengths. "Hong Kong offers a mature research environment, robust intellectual property protection, and access to international capital," he said. "With HKU's strong support in interdisciplinary collaboration, cross-sector engagement, and industry matchmaking, we have been able to connect with high-end global industries and fully leverage the market potential and complete industrial chain of the Greater Bay Area."



“This represents a collaborative development model where we do R&D in Hong Kong, pilot production in the Greater Bay Area, and access global markets.”

Professor Mingxin Huang

Revolutionise Thermal Management

Dynano's product features a copper soldering material that is made using a proprietary nano technology. Together, the solid-state copper sintering technology and advanced packaging design significantly improve heat dissipation, extend the lifespan of core components, and enhance overall system reliability and safety. It does all this while remaining highly stable and cost-effective to produce.

"This is a new solution to the long-standing overheating problem that the semiconductor industry has been struggling to overcome," Professor Huang said. "We believe that by providing a next-generation thermal management solution with superior performance and safety, we can capture a significant share of the future market."

The technology has arrived at an opportune moment. The market is increasingly receptive to new materials and has come to recognise the critical impact of bonding materials on device performance and

reliability. As a result, Dynano is expected to attract numerous potential partners across the semiconductor value chain, such as manufacturers of electric vehicles, drones and similar applications.

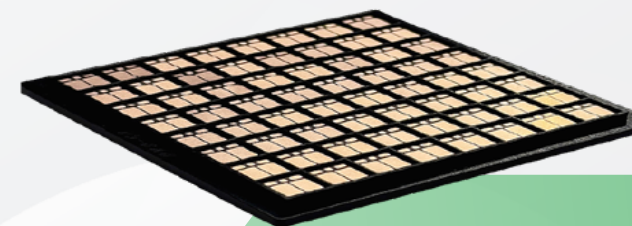
This favourable environment has accelerated the company's path to market. Founded in 2023, Dynano has established internationally standardised Class 100,000 and Class 10,000 cleanrooms equipped with high-end precision machinery. These facilities have enabled the startup to reach the mass-production preparation stage. The company has also built a pilot platform with batch production capabilities, comprehensive product testing, and a robust quality-assurance system.

Support and Opportunities

University support has played a pivotal role in Dynano's development. In September 2024, the startup moved into the Qianhai HKU Techno-Entrepreneurship Academy (HKU TEA). Within just one year, it successfully completed both seed-round and angel-round financing. This includes tens of millions of Hong Kong dollars from a joint fund established by CAS Star Technology Venture Capital and the HKU Entrepreneurship Engine Fund, managed by CAS Star's Hong Kong arm, FutureTech Stars HK.

Dynano also won the Gold Medal and the sole Most Investable Award in November 2025 at the 14th China Innovation and Entrepreneurship Competition – Qianhai, Hong Kong, Macao and Taiwan Competition, underscoring its strong industry impact.

This success is not entirely new for Professor Huang, who previously developed an innovative material "Super Steel" with broad industrial applications. "This not only demonstrates the transformative power of local scientific research but also signifies Hong Kong's growing influence in innovation and technology on the world stage," Professor Huang said.





Professor Yuan Lin (left)

Professor, Department of Mechanical Engineering, Faculty of Engineering

Professor Zhiqin Chu (right)

Associate Professor, Department of Electrical and Computer Engineering, Faculty of Engineering

Flexible Diamonds That Advance Next-Gen Electronics

An innovative technology that rapidly creates ultra-thin, ultra-hard, yet flexible diamond membranes, is winning awards and showing great promise for use in next-generation electronic and photonic devices.

Diamonds are forever” was an advertising slogan coined in the 1940s to sell rings. But in fact, diamonds have multiple incomparable qualities that make them highly appealing for use in engineering and industry. The challenge has been in accessing those qualities, but technology developed by Professor Zhiqin Chu of the Department of Electrical and Computer Engineering and Professor Yuan Lin of the Department of Mechanical Engineering, Faculty of Engineering, is showing the way.

They have developed a groundbreaking method for producing flexible, ultra-flat diamond membranes on a large, industrial scale. The technology was named among China's Top 10 Scientific Advances of 2025.

“Our scientific breakthrough demonstrates the significant potential of local innovation in Hong Kong,” said Professor Chu.

“I firmly believe diamond materials can move beyond traditional applications and advance into higher-end fields like semiconductors and quantum technology, to enhance our quality of life.”

Professor Zhiqin Chu

Professor Lin added: “It is highly gratifying that the fundamental research we are conducting at HKU is providing solutions to major industry bottlenecks.”

2025年度“中国科学十大进展”专家解读会

主办：国家自然科学基金委员会

承办：自然科学基金委员会 技术研究中心



Bend Without Cracking

The starting point for their research was the remarkable qualities of diamonds. Diamonds are the hardest natural material, have unparalleled thermal conductivity at room temperature, can withstand intense electric fields without breaking down, and have extremely high carrier mobility, ultrawide bandgap and optical transparency. All these make them ideal for use in advanced high-power, high-frequency electronic and photonic devices, and for cooling high-power density electronic components, such as semiconductor lasers and processors.

However, the same qualities that make diamonds so appealing also present challenges. Their inert nature and rigid crystal structure make them difficult to fabricate and mass produce, particularly for the ultra-thin and freestanding diamond membranes that are useful in electronics.

This is where Professor Chu's team have made their mark.

They developed a method to overcome the brittleness of diamonds that has limited use in manufacturing. Their “edge-exposed exfoliation” method enables diamonds to be grown as micrometre-thick films. These films are thin enough to bend without cracking yet still maintain their thermal and optimal performance.

Rapid, Scalable Production

Their method also allows for rapid production of scalable, free-standing diamond membranes – a two-inch diamond wafer can be fabricated in just 10 seconds, offering exceptional efficiency and scalability. This is not possible with conventional approaches, which are limited in size and are costly and time-consuming.

The ultra-flat, flexible diamond films produced by this technology are critical to high-precision micro-manufacturing and open new possibilities for next-generation flexible and wearable electronic and photonic devices, and many other fields besides. For instance, diamond membranes could be used in advanced medical devices that require high precision and flexibility, potentially contributing

to better patient outcomes. Their thermal properties could also enhance the efficiency of devices used in electric vehicles and renewable energy systems.

“We hope to promote the usage of high-figure-of-merit diamond membrane in various fields and to commercialise this cutting-edge technology and deliver premium diamond membranes. We think this can set a new standard in the semiconductor industry,” Professor Chu said.

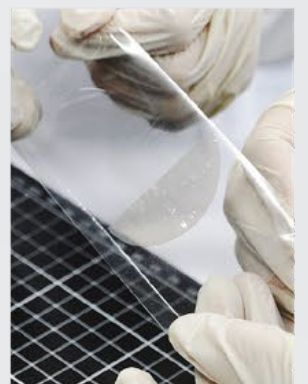
First Target: Thermal Heat Spreaders

Professor Chu has established a startup, DiamNEX Limited, to help them carve a path from the lab to the market. DiamNEX is driving this next stage by commercialising the patented process for growing the ultra-thin films and demonstrating that they can be produced to a consistent high quality in an industrial setting. A small production line has been established in Shenzhen to provide samples to potential partners and gather feedback before scaling up.

That work will be completed this year, when the startup will start focusing on target markets. Its first target is thermal heat spreaders to address the overheating of electric vehicles, power electronics and communication equipment. Down the road, they see potential for optical windows and specialised coatings, and ultimately diamond-based semiconductors.

Working with strategic partners is also a key priority. Through their active participation in various incubation programmes and competitions organised by HKU's iDendron, the team has benefited from structured mentorship, industry support, valuable exposure, and direct investor engagement.

“We are eager to collaborate with academic and industry partners to bring this revolutionary product to market and accelerate the arrival of the diamond era,” said Professor Chu.





Making Food Safe To Swallow

A project to help the thousands of people who struggle with swallowing food and drink has developed standards and guidelines for safe “care food”. This research project has been successfully implemented across the food industry and nursing homes, delivering meaningful improvements to patient safety and quality of life. In recognition of its outstanding impact, the project was awarded the HKU Knowledge Exchange (KE) Excellence Award in 2025.

Tens of thousands of Hong Kong people experience swallowing difficulties due to muscle changes caused by brain damage, such as dementia, Parkinson’s, stroke, or medical treatments for cancer or other diseases. These patients need specially prepared “care food” to avoid choking or aspiration risks. But for years, they and their caregivers struggled to find a consistent solution.

Now, thanks to the work of Professor Karen Man-kei Chan, Director of Swallowing Research Laboratory, Associate Professor, Faculty of Education, and her team, they are backed. Their project “Care for You – Carefood Project” has produced Hong Kong’s first safe standards for care food, trained caregivers, and worked with restaurants and frozen food suppliers to provide more care food options.

The development is important not only for patient safety, but also their nutritional intake and quality of life. While some patients can manage roughly or finely chopped food, staffing shortages in nursing homes often make it difficult to accommodate varying dietary needs. As a result,

their kitchens often puree meat, rice and vegetables into an unappetising brown mush – significantly reducing residents’ appetite to eat and hindering adequate nutritional intake.

Professor Chan and her team have been working to change that situation over the past 15 years, starting with research to investigate the extent of the problem.

“When we started our work, there were no industry-wide standards in Hong Kong to guide care food production. Yet standardised preparation of care food is essential for patient safety,” Professor Chan said.

Establishing Guidelines

Professor Chan’s first major project (2012–2019) quantified the prevalence and risk factors of dysphagia in the city, revealing that it affects 60% of nursing home residents and 15% of community-dwelling elderly. She also generated critical data on food textures and consistencies, which fed into her second project (2020–2022) analysing these properties in 60 common local ingredients and dishes.



This groundwork seamlessly complemented her active role in the International Dysphagia Diet Standardisation Initiative (IDDSI). As co-chair of the Hong Kong IDDSI Reference Group, she developed Traditional Chinese versions of the standards and integrated them with her local research to create the Hong Kong Care Food Standards and Guidelines in collaboration with the Hong Kong Council of Social Service (HKCSS).

Through outreach work by Professor Chan and her team, these standards are now being adopted by industry stakeholders and care facilities. They were also recently adapted into the Greater Bay Area Standard, for which Professor Chan was on the drafting committee.

Working with the Food Industry

Her work has also gone much deeper and created impact into the community. She recently led a project to develop frozen care food products, which was funded by The Hong Kong Exchange Foundation and involved collaboration with Fairwood fast food chain and the HKCSS.

Professor Chan helped validate Fairwood’s care food products using the Care Food Standard Guidelines and worked with the chain to make care food more appealing – for instance, by incorporating Hong Kong tastes and shaping pureed ingredients into appetising foods, such as broccoli or pork.

A number of other major restaurant chains have followed suit by offering more care food products, such as Café de Coral and Maxims. Frozen versions of these care foods are also being considered. This would be especially helpful for nursing homes where safe, ready-to-eat meals can reduce manpower demands at mealtime and improve nutritional outcomes for residents.



“We hope we can make the foods more appealing to residents by making them more attractive and giving people the tastes they grew up with.”

Professor Karen Man-kei Chan

Training Nursing Homes

The next step from these projects is to ensure quality and assess the effectiveness of these foods. Professor Chan is addressing these issues, too.

She is working with the HKCSS to develop a system, such as certification, to confirm that foods are, indeed, of the consistency stated on their packaging.

She is also leading a three-year project to improve care food provision in 220 private residential care homes and assess the outcomes. This large-scale project, covering about one-quarter of these homes, is funded by The Hong Kong Jockey Club Charities Trust and involves Professor Chan and her team training kitchen staff to produce care food based on IDDSI guidelines, and training other staff and volunteers to help residents strengthen their swallowing muscles.

Professor Chan has also developed a book, website and YouTube channel to guide people in care food preparation. She is also actively participating in various community education activities to support individuals with swallowing difficulties, caregivers, and other stakeholders.

For the remarkable reach and societal impact of her project, Professor Chan was awarded the 2025 HKU KE Excellence Award. There is no doubt of the project’s far-reaching benefits. “Having a wider range of care food options and clear standards are good news for patients. These developments will strengthen swallowing safety practices across Hong Kong and the Greater Bay Area, reduce the risks of choking, and significantly ease the burden and stress of the caregivers,” she said.



Dr Vriko Yu
Co-founder & CEO, Archireef

From HKU Lab to Seabed: Managing Nature as Infrastructure

Archireef began in an HKU laboratory with a question about why artificial reefs fail. It has become a nature-tech company that treats restored marine habitat as infrastructure: designed to site conditions, manufactured at scale, and managed against a baseline with monitoring and reporting attached.

Coral reefs are vital to healthy oceans. They provide breeding and feeding grounds for roughly a quarter of all marine species and underpin fisheries and tourism economies. They are also in the middle of the sharpest decline on record. Between January 2023 and March 2025, bleaching-level heat stress reached 84% of the world's reef area across 82 countries and territories — the fourth and most severe global bleaching event ever documented, according to NOAA's Coral Reef Watch and the International Coral Reef Initiative. The first such event, in 1998, affected 21% of reefs.

The longer trend is no gentler. One Earth found that global living coral cover has halved since the 1950s, with reef-associated biodiversity down by more than 60%.

Born and raised in Hong Kong, where nature and urban life sit unusually close together, Dr Vriko Yu witnessed that loss. In 2014, then a PhD candidate at HKU, she saw a coral community die within two months. It pushed her not only to look for a solution, but to take one to market.

Archireef, the spin-out she co-founded, now operates in Hong Kong, UAE and Saudi Arabia. The venture was supported by HKU's iDendron, which provided training, mentorship and access to early funding.

“I was fortunate to have strong guidance and resources from HKU. Like many startups, we faced financial constraints in the beginning, and the initial funding from iDendron and TSSSU@HKU was crucial in helping us survive until we could generate revenue.”

Dr Vriko Yu



A World-First Solution

Archireef began with experiments Dr Yu ran with her PhD supervisor and co-founder, Professor David Baker, School of Biological Sciences, Faculty of Science, to build artificial reefs capable of reviving coral communities. The team tested PVC pipes, plastics, metal rebar, and concrete. None provided the stable substrate coral needs. They changed direction and approached the Fabrication and Material Technologies Lab at HKU's Faculty of Architecture, working with Associate Professor Dr Christian Lange and Assistant Professor Lidia Ratoi. The research team developed the world's first 3D-printed clay Reef Tile — an eco-friendly structure with the complexity coral requires. Its folds and crevices give coral fragments a place to attach, survive and grow.

In 2020, Dr Yu co-founded Archireef with Professor David Baker and Mr Deniz Tekerek, a mentor she met through iDendron. The team built a business model aimed at the private sector — at a moment when developers, ports and financiers were beginning to face real questions about nature-related risk, permitting and disclosure.

Evidence on the Ground

Archireef was appointed to deploy its tiles in Hong Kong, and later in Singapore, UAE, and Saudi Arabia.

In Hong Kong, the company worked with the Agriculture, Fisheries and Conservation Department, Sino Group, and Chow Sang Sang to install Reef Tiles at the “Hope Spots” — a set of sites in Hong Kong waters where coral communities had declined. Four years on, coral survivorship on the deployed tiles in one of the projects reached about 90%, with 7X increase in fish abundance, and 45% increase in invertebrate abundance. eDNA sampling — a non-invasive monitoring method — confirmed marine life returning to the restored coral communities.

At AD Ports Group in Abu Dhabi, Archireef deployed Eco SeaWall Panels developed for the group's port facilities. Measured against a conventional flat seawall, the panels recorded surface temperatures up to 9°C lower — enough to create cooler micro-refuges at the waterline. In Arabian Gulf, where summer surface temperatures routinely exceed the tolerance of most attaching species, that difference determines whether a structure is colonised at all.

From Project to Asset

Early on, the team learned that the product alone is not enough to address the full cycle of nature risk compliance.

That understanding hardened into a four-stage method: assess the site baseline, restore the degraded habitats, monitor outcomes against that baseline, and report the results. It is also what has changed the shape of the company. Archireef no longer sells a product — it manages restored habitat the way an infrastructure owner manages a bridge or a building — as an asset with a baseline, a performance record, and a maintenance regime.

“What matters is the years after the project goes live — the baseline, the surveys, the numbers in a form they can file. That is what we deliver now: the habitat, and the record of how it is performing.”

Dr Vriko Yu

That shift also puts Archireef on the right side of a change in who has to prove what. Biodiversity conditions are now written into permits for developers, ports and energy operators. Lenders applying IFC Performance Standard 6 through the Equator Principles want those outcomes evidenced, Taskforce on Nature-related Financial Disclosures is moving the same expectation into mainstream disclosure, and Science Based Targets initiative is beginning to do it for targets — documentations are required.

Recognition and Expansion

Archireef's work in Hong Kong, Singapore, UAE and Saudi Arabia has earned international recognition, including selection as a World Economic Forum UpLink Top Innovator, a Bloomberg New Economy Catalyst, and a place on the Forbes Asia 100 To Watch list. The company has also signed an MoU with the Environment Agency — Abu Dhabi to collaborate on research and projects restoring marine habitat and protecting marine biodiversity in the Emirate.

“I received a great deal of encouragement to step outside my comfort zone — from my PhD supervisor Professor David Baker, and from many people across the University and in Hong Kong,” Dr Yu said. “It used to be said that scientists lived in an ivory tower. I don't think that's true anymore. We are in an era where everything has to be proved on the ground. Science is more impactful than ever, and more integrated into how businesses actually operate.”

Research Excellence

Global Hub of Rising Talent

Creating knowledge at the forefront

232

HKU professoriate staff ranked among
The World's Top 1% of Scientists

by Clarivate in 2025 (based on the number of citations recorded for their publications)

54

Highly Cited Researchers

by Clarivate in 2025

5

Chinese Academy of Engineering Academicians

(cumulative)

13

Chinese Academy of Sciences Academicians

(cumulative)

Funding

Top among local institutions

330

Projects

HK\$ 288M

Awarded under RGC's General Research Fund & Early Career Scheme 2026/27

40

Projects

HK\$ 1,748M

Awarded under RGC's Theme-based Research Scheme (cumulative since 2010)

Highest funding awarded among local institutions

14

Projects

HK\$ 1,008M

Awarded under RGC's Areas of Excellence Scheme (cumulative since 1996)

Major recipient among local institutions

5

Projects

HK\$ 134M

Awarded under RGC's Strategic Topics Grant (cumulative since 2022)

Researchers

Top among local institutions

64

Croucher Senior Research Fellowships & Croucher Senior Medical Research Fellowships (cumulative since 1997)

13

Croucher Tak Wah Mak Innovation Awards (cumulative since 2012)

Leading among local institutions

31

RGC Senior Research Fellows and RGC Research Fellows (cumulative since 2019)

Recent Honours & Awards Highlights

International



International Member of U.S. National Academy of Engineering

Professor Felix Fulih Wu

Emeritus Professor, Honorary Professor,
Department of Electrical and Computer Engineering,
Faculty of Engineering



International Member of U.S. National Academy of Sciences

Professor Ferenc Krausz

Nobel Laureate,
Professor, Chair of Laser Physics,
Department of Physics, Faculty of Science



Foreign Member of Academia Europaea

Professor Kathryn Cheah

Emeritus Chair Professor,
School of Biomedical Sciences, LKS Faculty of Medicine



2025 Brillouin Medal by the International Phononics Society

Professor Nicholas Xuanlai Fang (left)

Professor, Department of Mechanical Engineering,
Faculty of Engineering

Professor Xiang Zhang (right)

President and Vice-Chancellor, HKU
Chair of Physics, Department of Physics, Faculty of Science



Honorary Fellowship by the Royal College of Nursing

Professor Sophia Siu-chee Chan

Professor and Director, HKU Primary Health Care Academy,
School of Public Health, LKS Faculty of Medicine



Vice President of the International Mathematical Union

Professor Xuhua He

Professor, Chair of Mathematics,
Department of Mathematics, Faculty of Science

National



35 Innovators Under 35 China by The MIT Technology Review

Professor Hengshuang Zhao

Assistant Professor, School of Computing and Data Science



State Natural Science Award (Second Class Prize)

Professor Jun Yang

Professor, Department of Civil Engineering, Faculty of Engineering



International Member of the Chinese Academy of Engineering

Professor Max Z. Shen

Dean, Graduate School
Chair Professor, Logistics and Supply Chain Management,
Department of Data and Systems Engineering, Faculty of Engineering



The 9th Higher Education Outstanding Scientific Research Output Award
(Humanities and Social Sciences) by the Ministry of Education

Professor Tatia Mei-chun Lee

May Endowed Professor in Neuropsychology,
Chair Professor of Psychological Science and Clinical Psychology,
Department of Psychology, Faculty of Social Sciences



Certificate of Merit at National Award for Excellence in Innovation

Professor Wang Yao

Professor, Chair of Physics,
Department of Physics, Faculty of Science



China's Top 10 Scientific Advances of 2025

Ultra-Thin Diamond Fabrication Technology

Professor Yuan Lin (left)

Professor, Department of Mechanical Engineering,
Faculty of Engineering

Professor Zhiqin Chu (right)

Associate Professor, Department of Electrical and Computer Engineering,
Faculty of Engineering

Recent Honours & Awards Highlights

Local

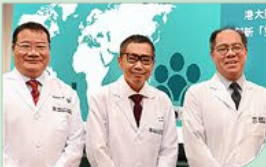


Top 10 Innovation & Technology News in Hong Kong 2025

 Detect First 'Heartbeat' of a Newborn Neutron Star

Professor Bing Zhang

Professor, Chair of Astrophysics, Global STEM Scholar, Department of Physics, Faculty of Science



Top 10 Innovation & Technology News in Hong Kong 2025

 'New Dual Immunotherapy' with International Approval Improves Survival Rates for Liver Cancer Patients

Professor Tan-to Cheung (left)

Anthony and Anne Cheung Professor in Innovative and Minimally Invasive Surgery, Clinical Professor, Co-Chief of Divisions of Hepatobiliary & Pancreatic Surgery and Liver Transplantation, Department of Surgery, School of Clinical Medicine, LKS Faculty of Medicine

Dr Thomas Chung-cheung Yau (middle)

Clinical Associate Professor, Centre of Cancer Medicine, Department of Medicine, School of Clinical Medicine, LKS Faculty of Medicine

Dr Ronald Ching-yu Leung (right)

Clinical Associate Professor in Medical Oncology, Department of Medicine, School of Clinical Medicine, LKS Faculty of Medicine



Top 10 Innovation & Technology News in Hong Kong 2025

 World's First Hybrid Photosensitive Immunotherapy for a Breakthrough in Cancer Treatment

Professor Wenwei Tu (left)

Jiaohua Su Professor in Paediatric Oncology and Transplant, Department of Paediatrics and Adolescent Medicine, School of Clinical Medicine, LKS Faculty of Medicine

Professor Weiping Wang (right)

Associate Professor, Department of Pharmacology and Pharmacy and Dr Li Dak-Sum Research Centre, LKS Faculty of Medicine



2026/27 RGC Senior Research Fellow Scheme

Professor Nicholas Xuanlai Fang (left)

Professor, Department of Mechanical Engineering, Faculty of Engineering

Professor Shunlin Liang (right)

Head and Chair Professor, Department of Geography, Faculty of Social Sciences



2026/27 RGC Research Fellow Scheme

Professor Lixin Dai

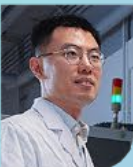
Associate Professor, Department of Physics, Faculty of Science



2025 Croucher Tak Wah Mak Innovation Awards

Professor Chao Xiang

Assistant Professor, Department of Electrical and Computer Engineering, Faculty of Engineering



2026 Croucher Tak Wah Mak Innovation Awards

Professor Jiawei Zhou

Assistant Professor, Department of Mechanical Engineering, Faculty of Engineering



Members of Hong Kong Academy of Sciences

Professor Michael Häusser (left)

Lee Man-Chiu Professor in Neuroscience, Chair Professor of Neuroscience, Director, School of Biomedical Sciences, LKS Faculty of Medicine, Director (Interim), School of Biomedical Engineering

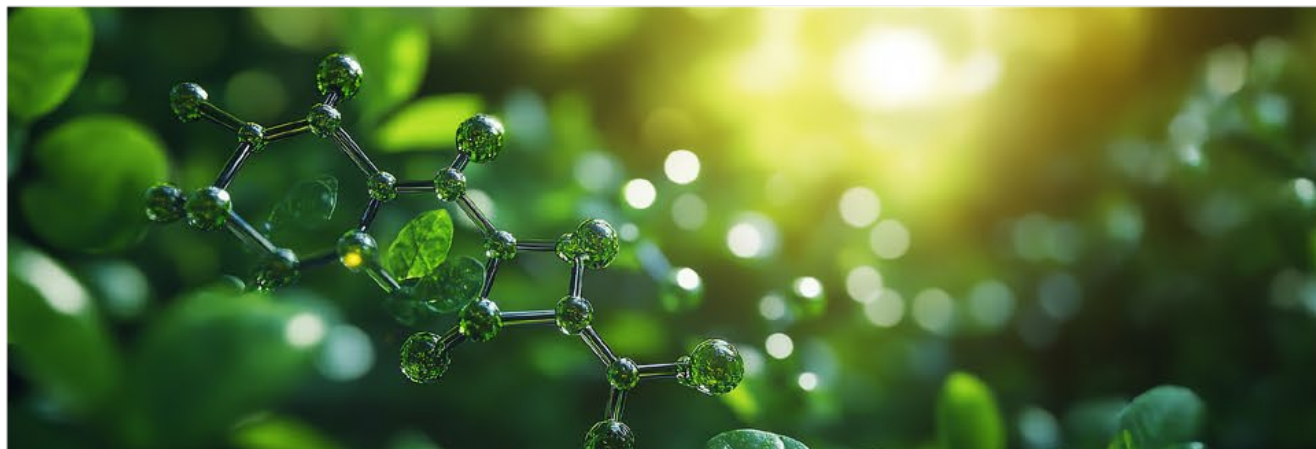
Professor Xuhua He (right)

Professor, Chair of Mathematics, Department of Mathematics, Faculty of Science



Learn more

Science



HKU Centre of Functional Materials for Energy and Sustainability Joins SEAM@InnoHK

The Centre of Functional Materials for Energy and Sustainability (CFMES) at HKU has been officially admitted to the third InnoHK research cluster, SEAM@InnoHK, which focuses on sustainable development, energy, advanced manufacturing, and materials. This milestone expands HKU's presence in InnoHK, adding to its seven existing research labs in the Health@InnoHK and AIR@InnoHK clusters.

The CFMES aims to address bottleneck challenges in facilitating the discovery of advanced battery materials and electric-enabled technology for energy storage, green conversion and sustainability applications, as well as innovative light-emitting materials, and light-enabled and responsive materials and technologies for energy conversion through international, national and local inter-institutional and industrial collaborations.

Led by Professor Vivian Wing-wah Yam, Vice-President and Pro-Vice-Chancellor (Global Innovation Centre) (Interim), Philip Wong Wilson Wong Professor in Chemistry and Energy, and co-headed by Professor Hongjie Dai, Sapientia Eminence Professor, both Chair Professors at the Department of Chemistry, the centre will bring together global academic and industry experts to provide solutions to important global real-world energy and sustainability challenges through innovative research in advanced functional materials and processes. This will also serve as an international Science and Technology hub, attracting top talent from academia and industry to Hong Kong and the Greater Bay Area, advancing solutions to grand challenges, and aligning closely with the National Science and Technology strategy.

InnoHK is a major initiative of the HKSAR Government to develop Hong Kong as the hub for global research collaboration. It involves the establishment of world-class research clusters at the Hong Kong Science Park with research laboratories set up by world renowned institutions and/ or commercial entities to conduct collaborative research.

At InnoHK, we ensure a wholesome environment for innovation, facilitate commercialisation, and transfer the research and development results into products that would have an impact on relevant industries, therefore benefit people's work and livelihood.

Professor Hongjie Dai
Sapientia Eminence Professor,
Chair of Chemistry,
Department of Chemistry,
Faculty of Science



Professor Vivian Wing-wah Yam
Vice-President and Pro-Vice-Chancellor
(Global Innovation Centre) (Interim),
Philip Wong Wilson Wong Professor
in Chemistry and Energy, Chair of
Chemistry, Department of Chemistry,
Faculty of Science



Science



Establishment of State Key Laboratory of Optical Quantum Materials

HKU's newly established State Key Laboratory (SKL) of Optical Quantum Materials, under the Department of Physics, merges the fields of photonics and 2D materials to drive breakthroughs in quantum and metamaterials research.

Directed by Professor Xiang Zhang, President and Vice-Chancellor, and Chair of Physics, and Professor Shuang Zhang, Interim Head and Chair of Physics, both from the Department of Physics, Faculty of Science, the laboratory focuses on ultrafast processes and topological structures, leveraging the combined strengths of optical and electrical information. Its research addresses fundamental issues that limit information processing, sensing and next-generation electronic applications. With interdisciplinary expertise across photonics, quantum materials, and low-dimensional device physics, the SKL aims to pioneer post-Moore era technologies like optical quantum integrated chips. Supported by state-of-the-art facilities across HKU, it actively bridges fundamental science with industrial translation and international talent exchange.

SKLs are elite research centres funded by the Ministry of Science and Technology. HKU proudly hosts five: the SKL of Emerging Infectious Diseases, SKL of Liver Research, SKL of Synthetic Chemistry, SKL of Pharmaceutical Biotechnology, and the new SKL of Optical Quantum Materials. Together, the SKLs drive technological innovation and support the development of the Greater Bay Area as a hub for frontier research.

Professor Xiang Zhang
President and Vice-Chancellor,
Chair of Physics,
Department of Physics,
Director, SKL of Optical
Quantum Materials



Professor Shuang Zhang
Interim Head and Professor,
Chair of Photonics, Department
of Physics, Faculty of Science
Associate Director, SKL of Optical
Quantum Materials



Science

Areas of Excellence

SECURING GLOBAL BIODIVERSITY

with Monitored Wildlife Trade



Professor Juha Merilä, Professor, Chair of Ecology and Biodiversity, School of Biological Sciences, Faculty of Science

The illegal trade in wildlife creates threats to people and the environment, through impacts on public health, biodiversity, and ecosystem integrity. As a global trade gateway, Hong Kong is at the frontline of controlling the illegal trade of wildlife products and live animals. To address the challenges of handling the extraordinary volumes of such trade, the interdisciplinary Centre for Safe, Sustainable and Legal Wildlife Trade is pioneering cutting-edge solutions that support an efficient, compliant, and disease-free trade ecosystem.

At the Centre led by Project Coordinator Professor Juha Merilä, Chair Professor, School of Biological Sciences, Faculty of Science, world-class experts in ecology, computer science, law, public health, and sociology, are working towards three goals. One, to establish the legality of wildlife trade by developing AI-powered smartphone applications for animal characteristics analysis, enabling customs officers to identify any illegally trafficked animals. Second,

to develop rapid diagnostic screening tests that monitor animal markets and customs seizures in order to establish an early warning pandemic prevention system that safeguards public health. Third, to educate authorities on using new forensics tools in courts through extensive training workshops.

The Centre's work will be integrated into comprehensive databases containing environmental, isotope, and DNA profiles of hundreds of commonly traded species, and become available globally to practitioners and reference platforms such as IsoBank. Through these, the Centre will contribute to protecting global biodiversity and health.



Engineering

Areas of Excellence

ADVANCING MRI

for Accessible Healthcare



Professor Ed Xuekui Wu, Chair Professor of Biomedical Engineering, Lam Woo Professorship in Biomedical Engineering, Department of Electrical and Computer Engineering, Faculty of Engineering



Magnetic resonance imaging (MRI) is one of the most transformative medical innovations in modern healthcare, providing a non-invasive window into body functions to enable diagnosis and prognosis of diseases and conditions, as well as to guide interventions.

However, it is very costly to acquire, install and operate, making it difficult for patients to access. In Hong Kong, for instance, patients are required to wait an average of 12-18 months to get an MRI scan.

In response to the growing demand for MRI services amid limited access to existing systems, the Centre for Next Generation Magnetic Resonance Imaging Technologies for Accessible Healthcare led by project coordinator Professor Ed Xuekui Wu, Chair Professor of Biomedical Engineering, Lam Woo Professorship in Biomedical Engineering, Department of Electrical and Computer Engineering, Faculty of Engineering, is revolutionising MRI into an affordable and adaptable system that can be used in a wide range of healthcare settings. To develop ultra-low-field MRI technologies, the Centre brings together leading experts around the world in MRI physics, engineering, image computing, AI and clinical medicine.

Not only will this transform healthcare delivery, but also help strengthen Hong Kong's position as a health and medical innovation hub across the region.

Engineering

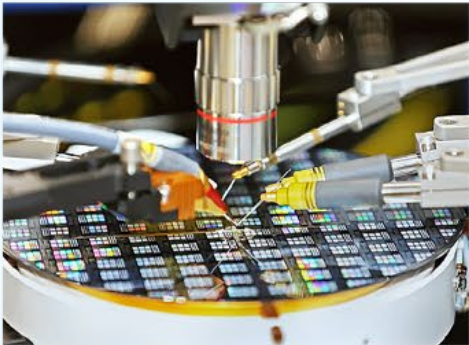
Theme-based Research

EFFICIENT POWER DELIVERY

for AI Computing



Professor Han Wang, Professor, Associate Head (New Initiative), Department of Electrical and Computer Engineering, Director, Centre for Advances Semiconductors and Integrates Circuits



AI data centres are demanding more power to fuel their computing chips, but traditional power systems are struggling to cope with the growing demand for efficiency and power intensity. More efficient and compact power delivery technologies are urgently needed. At the Faculty of Engineering, the project led by Professor Han Wang, Professor, Department

of Electrical and Computer Engineering and Director, Center for Advanced Semiconductors and Integrated Circuits, is working in collaboration with leading global semiconductor manufacturers to provide a more efficient power alternative.

The project seeks to revolutionise power delivery for high-performance computing in AI data centres by developing a holistic 3D-integrated power delivery solution that reduces power conversion losses by more than 50%. It combines next-generation power chips, compact electronic components, smart packaging techniques, and advanced cooling methods to create smaller, more efficient power systems.

This transformative proposal will significantly reduce power consumption in AI computing centres, making them more sustainable without compromising performance or computational capability. Beyond AI computing infrastructure, such highly miniaturised power electronics technology can also benefit early adopters across AI hardware, drones, humanoid robotics and beyond.

Education

Computing and Data Science

Theme-based Research

Learning in the Age of

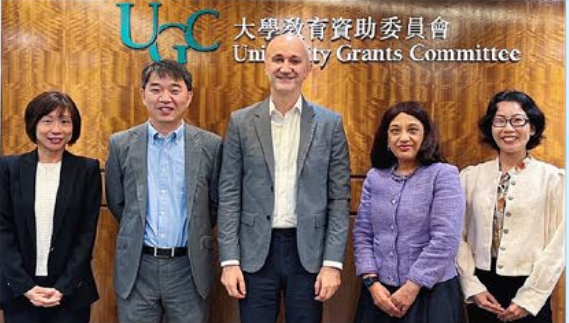
GENERATIVE AI



Professor Dragan Gašević, Chair Professor, Faculty of Education and School of Computing and Data Science

Generative AI technologies have become part of the daily lives of many, while their widespread use has raised concerns about overreliance and users' comprehension of AI-produced outputs. A project led by Professor Dragan Gašević, Chair Professor, Faculty of Education and School of Computing and Data Science, aims to answer that concern by looking at AI use among 9-15 years old learners – a critical period when children are developing regulatory capacity and are beginning to use digital technologies, including AI, more independently.

Working with students, teachers, and families, the project will conduct comprehensive surveys on current practices and needs, and collect evidence on how learners regulate their AI interaction while working on problem-solving and co-creation tasks. The project team will also work with teachers and students in co-design sessions to develop tasks, approaches and tools for learning and assessment in the digital environment.



The project represents a new research direction as it pivots from the quality of AI-assisted outputs to the impacts on human capacities in the human-AI interaction. It will deepen understanding of how students and future workers can use AI productively while retaining judgement, creativity, responsibility, and the capacity to continue learning.

Social Sciences

Strategic Topics Grant

Taking Care of Mental Wellbeing among OLDER ADULTS



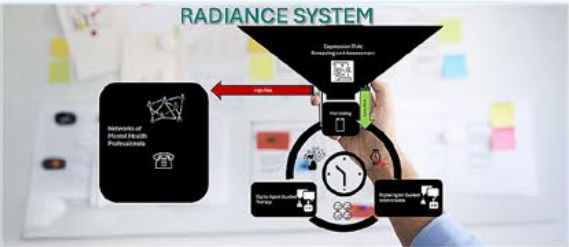
Professor Tatia Mei-chun Lee, May Endowed Professor in Neuropsychology and Chair Professor of Psychological Science and Clinical Psychology, Department of Psychology, Faculty of Social Sciences

Depression among older adults is a growing and challenging healthcare issue in Hong Kong and the GBA as the population ages rapidly, yet there is currently no digitalised and systematic system to screen, monitor, and intervene. At the Department of Psychology in the Faculty of Social Sciences, Professor Tatia Mei-chun Lee, May Endowed Professor in Neuropsychology and Chair Professor of Psychological Science and Clinical Psychology, and her team are addressing this challenge with **RADIANCE** – the **R**isk **A**ssessment of **D**epression and **I**ntervention for **A**geing **N**eeds, **C**hallenges and **E**mpowerment system.

RADIANCE is a multi-tiered, deep learning-based AI system. To reduce the stigma and social barriers that discourage older adults from seeking help, it will reach them through their personal digital devices. **RADIANCE** will conduct population-wide screening, monitor and automate referral to health professionals; offer 24/7 continuous tracking

through custom wearable devices of individuals' physiological, behavioural and mood changes associated with depression; and deliver personalised, digital agent-guided interventions that can direct healthcare resources to those in genuine need.

Currently, scientists and practitioners from Hong Kong, Shenzhen, Guangzhou and Beijing, as well as industry partners and providers of community health and clinical translation platforms, are collaborating on the project. With **RADIANCE**, mental health support would become more accessible and ultimately complement existing healthcare systems to safeguard the wellbeing of older adults.



Architecture

Collaborative Research Fund

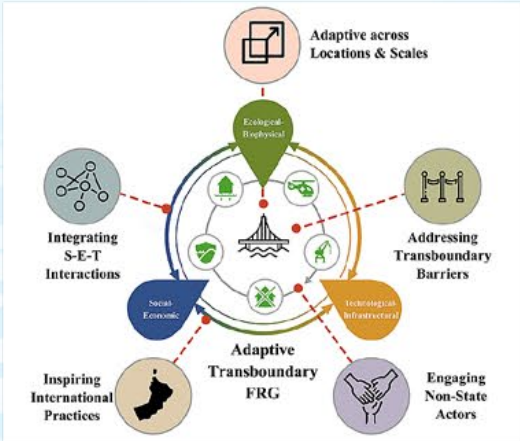
STRENGTHENING FLOOD RESILIENCE in the GBA



Professor Shenjing He, Head, Department of Urban Planning and Design, Lady Edith Kotewall Professor in the Built Environment, Faculty of Architecture

In recent years, cities across the GBA have become increasingly vulnerable to flooding due to climate change and rapid urbanisation. However, existing flood management systems are often fragmented and rely on conventional approaches centring on infrastructural approaches. To address this, Professor Shenjing He, Head, Department of Urban Planning and Design, Lady Edith Kotewall Professor in the Built Environment, Faculty of Architecture, is leading the development of an advanced data platform for flood governance.

By integrating climate and environmental sciences, geographical and urban informatics, and multi-sourced socioeconomic data, the platform will enable projection of future flood scenarios alongside urbanisation trends. It will also provide practical solutions for stakeholders across Hong Kong, Shenzhen, Guangzhou and other GBA cities through tools such as real-time risk assessments, nature-based urban planning strategies, and enhanced insurance models tailored to key developing areas such as the Northern Metropolis, Qianhai, and Nansha.



In addition to equipping policymakers, businesses, and communities with the knowledge and resources needed to navigate climate change, the project also seeks to understand the correlation between flood vulnerability and different population groups, to further support more equitable and resilient urban development across the GBA.

Dentistry

NSFC / RGC Collaborative Research Scheme

EASING TOOTH PAIN with New Material



Professor Chun-hung Chu, Kingboard Professor in Advanced Dentistry, Associate Dean (Research and Knowledge Exchange), Chair Professor of Family Dentistry, Clinical Professor in Cariology, Faculty of Dentistry

Approximately 40% of the Chinese population, along with many others worldwide, experience sharp pain when their exposed dentin is stimulated by substances such as cold liquids. Professor Chun-hung Chu, Kingboard Professor in Advanced Dentistry and Chair Professor of Family Dentistry at the Faculty of Dentistry, is collaborating with Professor Xuliang Deng of Peking University School and Hospital of Stomatology, an HKU Centennial Scholar, to develop a solution for people suffering from dentin hypersensitivity.

Traditionally, dentin hypersensitivity has been believed to be triggered by fluid moving through exposed dentinal tubules. Therefore, existing treatments have primarily focused on blocking these tubules to avoid contact with fluids. However, such treatments have often been unsatisfactory because the underlying mechanism was not fully understood.

Building on a recent breakthrough by the collaborative research teams, the pain is now understood to be caused by directional cation transport stimulated by changes in temperature, pressure, and pH, rather than by fluid movement alone.

To address the underlying cause, Professors Chu, Professor Deng and their research teams, are developing a new composite material that not only eases dentin hypersensitivity by blocking cation transport, but also promotes dentin remineralisation and enhances the mechanical strength of the tooth. It is expected to help address unmet clinical needs, reduce healthcare costs, and advance next-generation dental materials.



Innovations with Purpose

Knowledge Transfer

Enabling visionary ideas to yield groundbreaking solutions that benefit communities

HK\$ **3B** Knowledge Transfer Income
(2024-25)

13 RAISe+ Funded Projects
(cumulative)

2,274

Active patents and patent applications
(2024-25)

2,250

Collaborative research, contract research & consultancy projects
(2024-25)

166

Active licences
(2024-25)

Funding News

7 PROJECTS
secured funding in third
round of RAISe+ Scheme



HKU secured funding for seven projects in the third round of the government's RAISe+ scheme – the highest number among local institutions. Spanning new materials and energy, AI and robotics, health and medical sciences, and computer science and IT, the projects showcase HKU's excellence in impact-driven research across diverse disciplines. They include:

- Wafer-Scale Flexible Diamond Membranes**, led by Professor Zhiqin Chu, Associate Professor, Department of Electrical and Computer Engineering, Faculty of Engineering
- iEarth**, led by Professor Peng Gong, Vice-President and Pro-Vice-Chancellor (Academic Development) and Chair Professor of Global Sustainability, Department of Geography, Faculty of Social Sciences
- Industrialisation of Advanced Cooling Materials for Power Semiconductor**, led by Professor Mingxin Huang, Chair Professor of Materials Technology, Department of Mechanical Engineering, Faculty of Engineering
- Peptide Drug Innovation and Discovery**, led by Professor Xuechen Li, Morningside Professor in Chemical Biology & Chair Professor of Medicinal Chemistry and Chemical Biology, Department of Chemistry, Faculty of Science
- Liver-in-Cube: Novel Precise Theranostics for Liver Cancer and Diseases**, led by Professor Nancy Kwan Man, Chair Professor of Transplant Oncology and Immunology, Department of Surgery, LKS Faculty of Medicine
- AI-powered Platform for 3D Content Generation, Visualisation and Interaction**, led by Professor Dong Xu, School of Computing and Data Science
- Production of Human Pluripotent Stem Cell-derived Islet Organoid for Diabetes Treatment**, led by Professor Zhongjun Zhou, Chui Fook-Chuen Professor in Molecular Medicine, School of Biomedical Sciences, LKS Faculty of Medicine

Innovation Highlights

Medicine

ROTA:
A HONG KONG
INNOVATION IN
GLOBAL PRACTICE



Professor Christopher Leung
Albert Bing-Ching Young Professor in Ophthalmology, Chairperson and Clinical Professor, Department of Ophthalmology, School of Clinical Medicine, LKS Faculty of Medicine

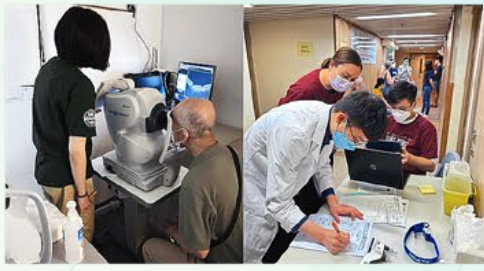
Glaucoma is the leading cause of irreversible blindness. Because early disease is symptomless, most patients present only after vision has been permanently lost – long after treatment would have been most effective.

Professor Christopher Leung, Chairperson and Clinical Professor of the Department of Ophthalmology, School of Clinical Medicine, LKS Faculty of Medicine, and his team developed ROTA (Retinal Nerve Fibre Layer Optical Texture Analysis) (Leung CKS, et al. Nat Biomed Eng. 2022;6:593-604) to close that gap, working with The Chinese University of Hong Kong and international partners. ROTA resolves the retinal nerve fibre layer in sufficient detail to make early, focal nerve fibre damage directly visible, improving diagnostic sensitivity for early glaucoma by up to 30% over conventional methods.

The technology has moved rapidly from laboratory to clinic. ROTA is now licensed to three of the world's leading ophthalmic imaging manufacturers – Heidelberg Engineering (Germany), Carl Zeiss Meditec (United States) and Topcon (Japan) – placing it in clinics worldwide. It has also been adopted by the Advanced Nerve and Glaucoma Imaging Network, an international consortium of leading glaucoma and neuro-ophthalmology centres and clinical researchers.

The impact extends to public health at home. In 2023, the team launched a two-year community screening programme combining AI with ROTA, delivering free comprehensive eye examinations to more than 5,800 residents aged 50 and above living in public housing estates. These results have informed a new primary care ophthalmology service model, supported by the Strategic Topics Grant and now being piloted in Hospital Authority hospitals, which is designed to sharpen triage and cut waiting times for new ophthalmology cases – currently up to 116 weeks.

In recognition of this work, the project received HKU's Knowledge Exchange Excellence Award 2025.



Medicine

PLANT-BASED
MOISTURISER
FOR ECZEMA
PATIENTS



Professor Richard Kao
Associate Professor, Department of Microbiology, School of Clinical Medicine, LKS Faculty of Medicine

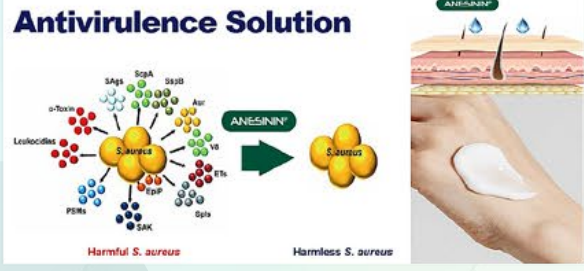
Eczema sufferers often endure intense, unbearable itching caused by the bacteria Staphylococcus aureus. While antibiotics are commonly prescribed, their frequent use heightens the risk of antimicrobial resistance (AMR), a growing global health threat.

A breakthrough plant-based moisturiser developed by Professor Richard Kao, Associate Professor, Department of Microbiology, LKS Faculty of Medicine, and his team, offers a smarter, safer solution.

Named Anesinin, the formula takes a novel approach to relieving eczema: instead of blindly killing off bacteria, it specially targets the S. aureus and suppresses its ability to produce toxins that damage the skin barrier and trigger intense itch signals to the brain. This allows S. aureus to coexist with beneficial skin microbes, while significantly reducing reliance on antibiotics and lowering the risk of antimicrobial resistance.

Initial user feedback has been highly encouraging: more than 70% of users noticed improvements in itching relief and eczema recovery, with 25% reporting it was highly effective after using it for seven days.

Developed over a decade of research through extensive collaboration with government, industry partners and the InnoHK Centre for Virology, Vaccinology and Therapeutics (CVVT), the formula is underway to expand across Greater China, Asia, and Europe. Ultimately, this innovation has the potential to benefit up to 800 million eczema sufferers worldwide.



Medicine

WORLD-FIRST
NANOPOWDER
NASAL SPRAY
FOR PREHOSPITAL STROKE RESCUE



Professor Aviva Chow
Associate Professor, Department of Pharmacology and Pharmacy, LKS Faculty of Medicine

When a stroke happens, every single minute dictates a patient's future. But what if we could start saving brain cells before the ambulance even reaches the hospital?

Professor Aviva Chow and his research team from the Department of Pharmacology and Pharmacy, LKS Faculty of Medicine, in collaboration with the InnoHK Advanced Biomedical Instrumentation Centre (ABIC), have developed a groundbreaking nasal spray that could protect patients in the immediate aftermath of an ischemic stroke, even at prehospital stage. The high potential of the nasal spray earned the Special Grand Prize – Prize of the Chinese Delegation and Gold Medal with Congratulations of the Jury at the 51st International Exhibition of Inventions Geneva 2026.

The NanoPowder Nasal Spray delivers neuroprotective agent rapidly through the nose-to-brain delivery route, effectively bypassing the blood-brain barrier. In pre-clinical animal studies, the treatment reduced the size of ischemic brain infarcts by around 80%, significantly protecting brain cells from death and preserving neurological function.

Stroke ranks as the second leading cause of death and long-term disability worldwide, while ischemic stroke accounts for about 70% of all stroke cases. Treatment opportunities are often limited to a very narrow time window, making every second count. The NanoPowder Nasal Spray addresses this urgent challenge through the 'Nano-in-Micron' technology platform, which Professor Chow and his team spent over a decade developing. Portable, user-friendly, and fast-acting, the nasal spray is designed for immediate emergency use by first responders, caregivers, or patients themselves.

The research team is now advancing toxicology studies and clinical trials, with the goal of making the spray widely available as a first-line emergency defence for stroke patients. To ensure that the spray aligns with treatment protocols, the team is also actively collecting feedback from emergency physicians and neurologists.



Medicine

THE FIRST HYBRID PHOTSENSITIVE IMMUNOTHERAPY CANCER TREATMENT



Professor Wenwei Tu
Jiaohua Su Professor in Paediatric Oncology and Transplant, Department of Paediatrics and Adolescent Medicine, School of Clinical Medicine, LKS Faculty of Medicine

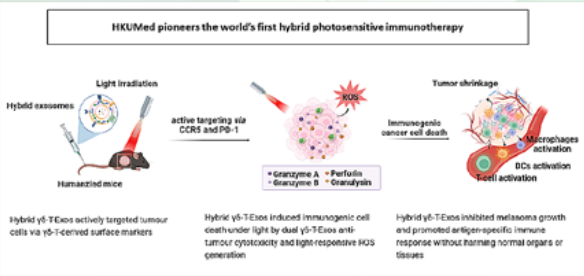
One of the major challenges in treating melanoma, the most aggressive and deadly form of skin cancer, is the lack of targeted therapies that can control tumour growth without causing systemic side effects. To address this, the LKS Faculty of Medicine has achieved a breakthrough by combining $\gamma\delta$ -T cell-derived exosomes with photodynamic therapy (PDT). The therapy has been proven to suppress melanoma growth in both nude and humanised mouse models.

Pioneered by the research team led by Professor Wenwei Tu, Department of Paediatrics and Adolescent Medicine, School of Clinical Medicine, LKS Faculty of Medicine, the treatment combines two approaches – light therapy and the body's own immune cells – to fight cancer. They developed “hybrid exosomes,” tiny particles created by merging two components: exosomes derived from a special type of immune cell called $\gamma\delta$ -T cells, and light-sensitive drug carriers. These hybrid particles act like guided missiles, where their surface proteins help recognise and attach specifically to melanoma tissue, while the immune-cell-derived molecules they carry selectively destroy cancer cells without harming healthy ones.

When red light is shone on the tumour, the light-sensitive component activates and produces a burst of toxic substances inside the cancer cells, working together with the immune molecules to kill them more effectively than either approach alone. Importantly, this process also triggers a targeted immune response against melanoma. This dual action not only attacks the tumour directly but also helps the body remember and fight the cancer in the long term.

As $\gamma\delta$ -T cells can be expanded ex vivo at a clinical scale and sourced from healthy donors, production could be centralised and standardised with quality control paving the way for wider accessibility.

The therapy was recognised as one of the “Top 10 Innovation & Technology News in Hong Kong 2025” by the Beijing-Hong Kong Academic Exchange Centre.



Computing and Data Science

CLAWTEAM: AI AGENTS HARNESSSED TO WORK AS A TEAM



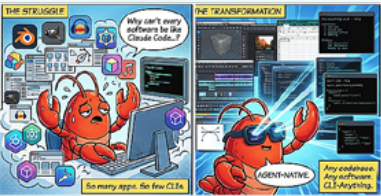
Professor Chao Huang
Assistant Professor, School of Computing and Data Science

Autonomous AI agents can perceive problems and execute solutions independently or with minimal human supervision. Increasingly, organisations deploy them to code, write, analyse and perform a wide range of functions. Yet a fundamental limitation remains: most AI agents still operate in isolation.

A technology developed by Professor Chao Huang, School of Computing and Data Science, directly addresses this gap. ClawTeam introduces a collaborative agentic framework in which a “swarm” of AI agents work in concert to tackle complex, multi-step tasks. Built on top of various agent frameworks, it operates as an open-source AI assistant that runs on any computer, integrates seamlessly with existing chat applications, and goes beyond simply responding to queries – actively executing real-world tasks end to end.

The ClawTeam successfully transforms solo AI agents into coordinated teams. The system spawns specialised sub-agents that operate in parallel under the direction of a lead agent. This lead AI agent delegates tasks, monitors progress and orchestrates the entire workflow through to completion. As a result, organisations can initiate multi-day projects with a single command.

ClawTeam's architecture prioritises coordination and modularity, enabling strong scalability and adaptability across domains – from scientific research to enterprise applications. Potential use cases include AI research automation, agentic engineering, AI-driven hedge fund strategies, and the creation of customised agent swarms tailored to specific organisational needs.



Social Sciences

iEARTH: MAPPING THE PLANET'S ENVIRONMENT



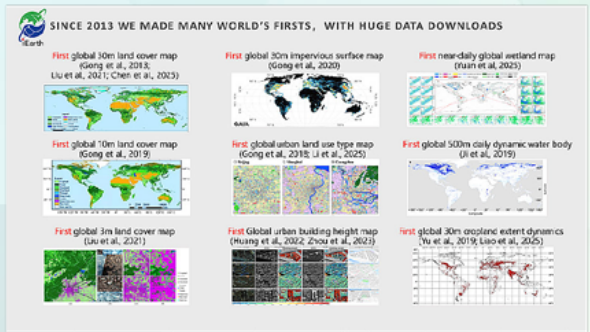
Professor Peng Gong
Vice-President and Pro-Vice-Chancellor (Academic Development), Chair Professor, Global Sustainability, Department of Geography, Faculty of Social Sciences

A powerful platform that converts vast volumes of Earth observation data into meaningful, actionable insights has been developed under the leadership of Professor Peng Gong, Vice-President and Pro-Vice-Chancellor (Academic Development) and Chair Professor of Global Sustainability, Department of Geography, Faculty of Social Sciences.

The platform, called iEarth, fuses multi-sensor satellite data into a single AI-powered system capable of generating near real-time, high-resolution imagery (ranging from 0.3 metres to 30 metres) and transforming it into actionable intelligence for climate, carbon and sustainability applications. Key areas of impact include carbon accounting, precision agriculture, urban monitoring, disaster early warning, environmental risk assessment, and energy and carbon management.

iEarth's key capability is significantly improving large-scale environmental analysis. Its data compression is about 340-fold, enabling it to manage and analyse massive amounts of global satellite data at substantially lower storage and computing costs than conventional means, while still providing high-fidelity analysis.

iEarth was selected for funding under the third round of the government's RAISE+ Scheme in 2026. In June, it was also showcased at the inaugural Pacific Climate Summit, where the State of California and Pacific Island communities signed a Joint Statement to deepen regional co-operation on building long-term climate resilience. iEarth will play a central role in deploying the practical frameworks required to turn this accord into action.



Science

HKU FOR CHINA'S MISSION TO MARS



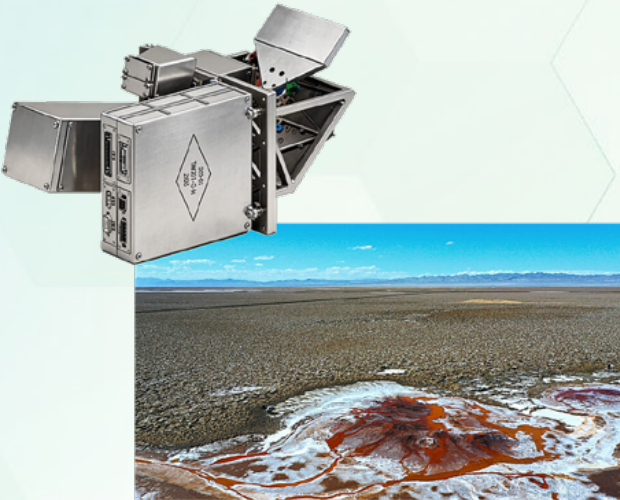
Professor Yiliang Li
Professor, Department of Earth and Planetary Sciences, Faculty of Science

Led by the China National Space Administration, the Tianwen-3 Mars Sample Return mission is widely anticipated to become the world's first mission to return samples from Mars to Earth. Honourably, the Short-Wavelength Infrared Spectrometer, developed by Professor Yiliang Li and the research team from the Department of Earth and Planetary Sciences, has been selected for deployment on the mission.

On Mars, the Spectrometer will play a critical role in forecasting dust storms, searching for biosignatures, detecting hydrous materials, and surveying Martian resources. It will help to identify where on Mars has the most favourable weather conditions and highest scientific value for landing.

As a core member of both the Landing Site Selection Team and the Mission Science Team of Tianwen-3 mission, Professor Li exemplifies HKU's excellence in Earth and planetary sciences, particularly in cosmochemistry and astrobiology. This mission also highlights Hong Kong's growing contribution to the nation's deep space exploration programme.

Scheduled for launch in 2028, Tianwen-3 is expected to spend at least seven months travelling to Mars and remain in orbit for nine months before landing on Mars in 2030. It will then return to Earth in 2031 with samples collected, while the Spectrometer will remain in orbit for at least five additional years to carry out long-term observations of Mars's low-altitude regions.



Strategic Partnerships Bridging University-Industry Collaboration

Joining hands with the extensive international partner network

1600+

Global Collaborations
Engaged (2025/26)



Joint Innovation Centre with China Mobile on New Technologies



The HKU and China Mobile Group Joint Innovation Centre brings together the diverse research strengths of HKU and China Mobile's industry know-how to foster cutting-edge research and technological advances in key emerging areas, including AI, sixth-generation wireless technology (6G), Web 3.0, the low-altitude economy, edge AI, and satellite communications.

This strategic partnership also aims to commercialise its ground-breaking research outcomes into innovative and practical technologies that deliver significant societal and economic benefits. Valuable educational

opportunities are also provided for students and researchers to develop their talents in preparation for future careers in high-tech sectors and participate in knowledge exchange.

Since its establishment in 2025, the Centre has launched several initiatives and completed two notable projects related to Web 3.0 – one focusing on research into economic models and business development strategies within the Web 3.0 ecosystem, the other on controllable dialogue technologies for large AI models.

Platforms for Peptide Drug Innovation and Discovery with China Merchants Group



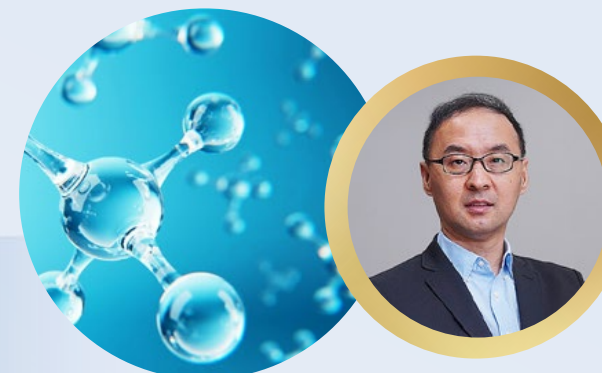
Peptides represent a rapidly expanding and highly promising class of drugs for precise drug targeting. Their transformative potential is already evident in the remarkable success of GLP-1 receptor agonists in treating diabetes and obesity.

HKU and China Merchants Group (CMG) have achieved significant progress in peptide translational research through two pioneering platforms. These platforms enable the screening of previously undruggable targets and the development of non-injectable peptide delivery systems — addressing two of the most critical barriers in modern drug discovery.

By accelerating high-value pipelines in immunology, oncology, and metabolism, the platforms hold substantial promise for next-generation therapies. This potential was formally recognised in the third round of the RAISE+ Scheme, which awarded funding to the initiative and underscored HKU's proven ability to bridge academic innovation with industrial application.

The platforms were developed under an agreement signed between HKU and CMG in late 2024. All parties remain fully committed to advancing innovation in the biopharmaceutical field.

HKU and Grand Pharmaceutical to Accelerate Breakthrough Drug Innovations



Professor Xuechen Li

*Associate Dean (Research and Graduate Studies),
Morningside Professor in Chemical Biology,
Chair Professor of Medicinal Chemistry and Chemical Biology,
Department of Chemistry, Faculty of Science*

HKU and Grand Pharmaceutical are joining forces to drive the discovery and rapid translation of innovative medicines into real-world impact. This partnership establishes a powerful model of deep industry-academia-research integration, designed to transform cutting-edge scientific insights into tangible benefits for patients.

The collaboration's first priority is the development of novel anti-infective (antibacterial) treatments to address urgent clinical needs. HKU's Department of Chemistry will lead the research, drawing on its strengths at the interface of synthetic chemistry, medicinal chemistry, and biology, which are opening new possibilities for developing biologics with new functional activities. Under this collaboration, research teams from both parties will work closely together to develop new preclinical drug candidates.

Upon successful completion of the project, Grand Pharmaceutical is expected to take an exclusive license to the resulting intellectual property (IP) and will be responsible for its subsequent development, regulatory approval, and commercialisation, thereby bridging the gap between cutting-edge academic research and real-world patient applications and accelerating the translation of innovative discoveries into tangible medical breakthroughs.

Signed in April 2026, the research collaboration agreement leverages Grand Pharmaceutical's proven expertise in clinical development and commercialisation. It marks an important milestone in creating a synergistic model for integrating academic research with industrial application.

HKU and Alnylam Pharmaceuticals Collaborate to Accelerate Discovery of Nucleic Acid Therapeutics

HKU and Alnylam Pharmaceuticals Inc., a leading global biopharmaceutical company, have entered into a research collaboration to accelerate the discovery of nucleic acid therapeutics and deliver more life-changing treatments.

The foundation of the partnership is an advanced molecular imaging platform developed by Professor Haibo Jiang, Associate Professor, Department of Chemistry, Faculty of Science. This platform dynamically tracks the journey of drug molecules in vivo and, critically, visualises endosomal escape inside the body — a central bottleneck in nucleic acid delivery that few, if any, existing technologies can directly capture. By providing quantitative, mechanistic insight into how therapeutic nucleic acids enter cells, traffic through endosomal pathways and reach their cytosolic targets, this technology offers pharmaceutical companies an unprecedented tool to optimise drug design and formulation.

The unique capabilities of Professor Jiang's laboratory have the potential to impact discovery of new therapeutic modalities such as nucleic acid therapeutics. Through this partnership, Alnylam will leverage HKU's



Professor Haibo Jiang

*Associate Professor,
Department of Chemistry,
Faculty of Science*

state-of-the-art endosomal escape analysis technology with a vision to accelerate the optimisation of its delivery platforms for RNAi therapeutics and de-risk candidate selection across discovery and preclinical stages.

This collaboration illustrates how HKU's world-class molecular imaging research and Professor Jiang's pioneering technologies can create high-impact industrial partnerships. The team welcomes companies to co-develop next-generation nucleic acid drugs.

Joint Lab to Advance AI-Supported Medical Imaging

The huge potential of AI in the field of medical imaging has propelled a collaboration between HKU and Medical Image Insights Intelligent Technology (HK) Ltd., a subsidiary of Shanghai Yinghe Medical Intelligence Technology Co., Ltd., to drive innovation and clinical applications in the field.

Their joint lab, established in February 2026, draws on the firm’s rich experience in industrial application and HKU’s academic excellence and talent training capabilities to advance the development of medical image models, diagnostic models and clinical decision support systems. Breakthroughs will be pursued in disease diagnosis, prognostic prediction and treatment optimisation, and translated into technologies that can benefit patient outcomes. The laboratory will also be a training ground for interdisciplinary research professionals in the application of AI for medicine and AI for medical imaging.

The collaboration is based on a model in which academic innovations are driven by industry needs. Ultimately, it aims to help position China at the forefront of international medical AI research and contribute smarter, more effective healthcare solutions.



Deloitte-HKU Lab for Organisational Transformation

AI presents huge opportunities and challenges for organisations, and many are still exploring how to respond. The Deloitte-HKU Lab for Organisational Transformation is closing that critical gap through rigorous research and practical outreach.

A survey by the Lab revealed that most AI adoption initiatives fall short not because of technology limitations, but due to organisational barriers such as internal silos and cultural resistance. By combining the academic depth of HKU’s Centre for AI, Management and Organisation with Deloitte China’s extensive industry insights and networks, the Lab equips leaders with the knowledge and tools needed to implement AI successfully.

At the heart of its work is the HKU and Deloitte China AI Adoption Index 2026, which surveyed more than 100 C-suite executives across Chinese Mainland and Hong Kong. The Index delivers clear-eyed insights into real-world adoption rates, key barriers, including employee readiness and emerging strategic priorities.

Complementary research projects are generating finer-grained understanding of AI’s impact. One study found that AI boosted worker productivity while reducing output quality; another demonstrated that

AI significantly improved diagnostic accuracy in cases where doctors disagreed. Drawing on these findings, the Lab is developing practical frameworks that enable organisations to adapt, overcome internal obstacles, and thrive in the AI era.



Working with GETECH and TCL to Advance Industrial AI



HKU and two major industrial firms are collaborating through the HKU-GETECH Industrial AI Joint Laboratory to advance real-world applications of industrial AI in order to improve efficiency, productivity and optimisation in manufacturing and supply chain operations.

Their initial focus is on building a handling and scheduling system for intelligent AMHS (Automatic Material Handling System). HKU and GETECH teams aim to advance AI algorithms capable of managing over 1,000 overhead hoist transports and enhance the overall performance of intelligent equipment.

HKU brings academic expertise to the partnership, while GETECH brings its specialty in AI solutions in manufacturing. GETECH was incubated by TCL, a globally competitive manufacturing group focused on core sectors such as smart terminals, semiconductor displays, and new energy photovoltaics.

The partnership was launched in 2025 and is envisioned as a five-year programme that lays the groundwork for sustained joint R&D and technology translation.

Strengthening Innovation Connections with the Yangtze River Delta

A new wide-ranging agreement between HKU and the National Innovation Centre par Excellence (NICE) will be a springboard for technological innovation, commercialisation, applied research and talent development. It will also strengthen connections between Hong Kong and the Yangtze River Delta in delivering practical, cutting-edge solutions for meaningful industrial and societal impact.

The agreement, signed in June 2026, provides a framework for joint research projects in key strategic areas including advanced materials; information and communication technology; energy and environmental protection; manufacturing and equipment; and biology and medicine. Talent training will also be advanced to connect academic expertise with market needs.

Commercialisation and startup development will also be strengthened by connecting researchers with industry leaders, entrepreneurs and investors. In addition, HKU’s commercial arm, Versitech, will collaborate with NICE to explore opportunities in startup development, market access and investment, to help high-potential research achieve full commercial value and contribute to the wider community.



Entrepreneurship

Navigating Lab-to-Market

Accelerating inventions for tangible real-world applications

HK\$ 1,294M

Total fund raised

560+

Startup supported by HKU TEC

HK\$ 521M

Entrepreneurship Engine
Fund (via partner funds &
direct investment)



Fundraising Initiatives and Events

HKU Super Angel Network



The HKU Super Angel Network (HKU SAN) is a community initiative launched in March 2025. It brings together alumni, angel investors, and ecosystem supporters to strengthen the university's startup community through donations, investments, and mentorship. Led by Chief Convenor Dr Winnie Tang, MH, JP, it is the first university-led angel network of its kind in Hong Kong. HKU Venture Mentoring Service (VMS) is one of its key initiatives, supporting HKU-affiliated startups through strategic guidance and long-term mentorship. The programme helps founders develop their ventures and bring innovations to market. As the first official MIT VMS sister programme in Hong Kong, HKU VMS connects founders with mentors from diverse professional backgrounds through

a team mentoring model, providing balanced, multidisciplinary advice tailored to their stage of growth.

What SAN Does:

Fund startups: Support the creation, funding, and expansion of promising HKU-affiliated startups.

Provide mentorship: Foster entrepreneurial growth by utilising members' expertise and skills

Build ecosystem: Cultivate a vibrant angel investment landscape across Hong Kong and the Greater Bay Area.



Learn more

HKU Entrepreneurship Engine Fund



The Entrepreneurship Engine Fund (EEF) is HKU's HK\$1 billion strategic "fund of funds" initiative. Operating as patient capital, it nurtures HKU-affiliated early-stage, deep-tech spin-off startups by transforming research into real-world solutions.

Through partnerships with top-tier venture capitalists, the EEF provides funding, mentorship, and commercialisation support via joint funds and lead investments. Key partners include Gobi Partners, CAS Star, DEFTA Partners, Beyond Ventures, InnoAngel, Brizan Ventures and BioTrack Capital. Collectively, these collaborations have injected hundreds of millions of Hong Kong dollars into building a vibrant entrepreneurial ecosystem around HKU's most promising ventures.

Focus Areas: Deep-Tech, Healthcare, AI & Future Industries, and other University-Driven Innovation

Funding Size: Typically US\$0.5–5 million per investment, primarily through EEF Sub-Funds and global network of EEF Investment Partners.

Investment Stages: Seed to Early Venture

Eligibility: Startups must have at least 20% ownership held by HKU members (students, staff, or alumni) or license HKU intellectual property (IP)



Learn more

Accelerating Startup Growth through the Gobi-HKU Fund



The HKU EEF and Gobi Partners have joined forces to launch a fund that will support high-potential HKU spin-off startups and bridge the gap between research and commercialisation in breakthrough areas such as AI, robotics, and biotech.

The Gobi-HKU Fund I held its first close and first batch of investment ceremony in 2026. It aims to raise a total of HK\$240 million in capital, as well as provide talent and strategic support to transform cutting-edge research into globally impactful applications.

The Gobi-HKU Fund I is structured along EEF's fund-of-funds format and has begun to invest in very promising HKU innovators. Examples include Manifold Tech, a rapidly growing enterprise focused on real-time 3D reconstruction algorithms and advanced robotics technologies whose two HKU founders were named the 2025 Forbes China 30 under 30 list, and AilsynBio, a biotech startup that entered a major collaborative agreement in April 2026 with Dong-E-E-Jiao Co., Ltd., a subsidiary of China Resources Pharmaceutical Group.

FutureTech Stars HK and HKU Venture Fund Supports Deep-Tech Innovations



The first close of a major joint fund, FutureTech Stars HK-HKU Venture LPF, was announced in March 2026, to support the industries of the future, in particular disruptive global technologies and major innovative breakthroughs. Already, in that first close, the fund has raised half of its total target of HK\$300 million.

The fund, set up by HKU's EEF and FutureTech Stars' founder, CAS Star Technology Venture Capital. Anchor investors in the first close include EEF, Bank of China Group Investment Limited, and Yangtze Optical Fibre and Cable Joint Stock Limited Company.

The fund's investment strategy prioritises world-leading research – from universities in Hong Kong, the Chinese Academy of Sciences, the Hong Kong Institute of Sciences & Innovation, and top overseas research and development institutions. Its approach exemplifies HKU's commitment to patient capital, support for early-stage innovation and acceleration of research outcomes commercialisation. An early beneficiary of the fund has been the HKU-incubated startup Dynano Semiconductor, which has made strong inroads in developing advanced packaging technology for high-power semiconductors.

Acceleration Programmes



MedTech Hackathon
Propels Innovators to Next Stage

The MedTech Hackathon GBA 2026 empowers researchers to transform innovative ideas into market-ready solutions. The programme attracted more than 70 multidisciplinary teams, who received structured mentorship, investor engagement, immersive industry and ecosystem exposure, and entrepreneurial training and workshops.

Co-organised by HKU's TEC and TEA, in collaboration with Bay Charm, the Hackathon culminated in the top 10 finalists pitching their solutions to a distinguished panel of experts at the Asia Summit on Global Health in May, where cutting-edge laboratory research and real-world clinical demand come together.

All teams also had the opportunity to participate in major industry events, such as BioChina 2026, and to join industry visits to Suzhou and Guangzhou to network and explore collaboration opportunities.



Global Hub for Future Dentistry
Revolutionising Oral Health Through Innovation

Global Hub for Future Dentistry is a specialised incubation programme jointly developed by HKU Faculty of Dentistry, HKU TEC, and Hong Kong Science & Technology Parks Corporation (HKSTP).

This programme is the first of its kind in Hong Kong, specifically designed to drive dental innovations and entrepreneurship while fostering dentistry research translation and commercialisation. The partnership combines world-class dental research facilities and expertise with comprehensive startup support to develop Hong Kong as a global dental innovation hub.

Research post-graduates, young researchers and dental professionals are particularly welcome to explore their innovative ideas through this collaborative programme. It also encourages dental students and practitioners to convert innovative projects into real-world business ventures. Global Hub for Future Dentistry will offer comprehensive support in entrepreneurship education, startup building, and exposure to realise and commercialise dental innovations into viable startups, with HKU Faculty of Dentistry providing world-class research expertise and clinical trial support, HKU TEC offering entrepreneurial supports, and HKSTP serving as the largest I&T Hub in Hong Kong with robust startup ecosystem, structured incubation programme and funding opportunities.



Spotlights



NEXT-GENERATION FLYING AGENTS



Professor Fu Zhang

Associate Professor, Department of Mechanical Engineering, Faculty of Engineering, Founder, SPARO

Spatial Robotics (SPARO), a startup built on ground-breaking research developed by Professor Fu Zhang, Associate Professor, Department of Mechanical Engineering, Faculty of Engineering, aims to deliver next-generation aerial intelligence that can operate safely even in cluttered, complex environments. Its flying agents can perceive their surroundings, make autonomous decisions and complete missions on their own. SPARO successfully integrated closed-loop software-hardware, supporting cameras, LiDAR and IMU sensors with advanced control architectures to lower deployment costs. Through HKU's incubation support, SPARO is advancing its core technologies towards safety certification and scaled deployment, working with global partners to make general-purpose aerial intelligence available across diverse flight platforms and operational scenarios.

There is huge commercial potential for this technology in fields such as logistics, urban mobility, surveillance and more, and the company has attracted backing in multiple angel rounds involving Alibaba, Hony Capital, Glory Ventures and JinQiu Capital.



“We aim to bring reliable, scalable aerial intelligence from Hong Kong to more platforms and real-world scenarios.”

Professor Fu Zhang



ENGINEERING HOPE FOR PATIENTS WITH BRAIN IMPAIRMENTS



Professor Paddy Kwok-leung Chan

Associate Professor, Department of Mechanical Engineering, Faculty of Engineering, Managing Director and Co-director, Inno HK, Advanced Biomedical Instrumentation Center, Founder, Brainsmart Technology

A pioneering brain-computer interface (BCI) technology that can help patients with neurological diseases such as stroke and spinal cord injury recover vocational function has been developed at HKU. Its real-world application is being advanced by the HKU startup Brainsmart Technology Co. Ltd., founded by Dr Paddy Kwok Leung Chan, Associate Professor, Mechanical Engineering, Faculty of Engineering, with support from InnoHK and the Advanced Biomedical Instrumentation Centre (ABIC), a joint venture of HKU and Harvard University.

The technology uses invasive BCIs and AI neural decoding algorithms to address challenges in neural processing and establish essential BCI infrastructure for both speaking and motor coding. The prototype has been finalised and undergone clinical trials. Brainsmart now has offices in the Hetao Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone to commercialise the technology, and it has received angel financing to support its growth. Ultimately, the company aims to help individuals affected by stroke, spinal cord injury and Amyotrophic Lateral Sclerosis (ALS) around the world to regain independence and improve their daily lives.



“BCI is more than frontier science, it is tangible hope for patients and families facing neurological conditions. Brainsmart Technology will spare no effort to empower every patient and family in need through the power of engineering.”

Professor Paddy Kwok-leung Chan



QUIETER, MORE PURPOSEFUL ROBOTS AND MACHINES



Dr Xuyang Liu

President, Direct Drive Tech

Direct Drive Tech is a globally leading robotics technology company with direct drive technology as its core capability. The Company endeavours to bring robots into every household and sector and is committed to making robots more efficient, dexterous, and intelligent. Direct Drive Tech primarily engages in the sales of robotic actuator modules and robots. The Company has established three major robot technology platforms: (1) the robotic actuator module technology platform; (2) the wheel-legged robot technology platform; and (3) the modular reconfiguration technology platform.

Dr Xuyang Liu, who earned his PhD from the Department of Electrical and Electronic Engineering at HKU in 2019, was appointed Vice President of Direct Drive Tech in 2023 and promoted to President in 2025. He is mainly responsible for the Group's technological R&D and business operations. He has led the development and iterative upgrading of the company's three core technology platforms and overseen key innovations in system architecture, advanced algorithms, and product engineering, laying a solid technical foundation for the Group's next-generation products. In 2026, the company passed its Main Board listing hearing with the Hong Kong Stock Exchange, a milestone that supports its efforts to expand product applications across multiple industries.

More recently, Dr Liu helped Direct Drive Tech secure external funding from sources including Sense Capital, Lenovo Capital, Rockets Capital and Brizan ventures. In 2026, the company passed its Main Board listing hearing with the Hong Kong Stock Exchange, further supporting its efforts to expand product applications across multiple industries.



“Direct Drive Tech endeavours to bring robots into every household and sector and is committed to making robots more efficient, dexterous, and intelligent.”

Dr Xuyang Liu



LEADING THE WAY IN E-MOBILITY



Mr Jon Chan

Chairman & Founder, CYC Technology

CYC Technology is shaping the future of electric mobility. It has developed its own motors, battery systems and electronic control units in-house, and paired them with forward-thinking design and manufacturing expertise to produce pioneering brands. Its flagship electronic motorcycle brand, Bonnell, has achieved strong market validation through keen rider demand and victories in multiple competitive events. The full spectrum of electronic dirt bikes developed under the Bonnell brand, including 775 MX, 805 and 902, set new benchmarks for performance and engineering excellence. CYC also produces the brands Ristretto, CYC Motors and EBMX Global.

CYC Technology, founded by Mr Jon Chan, graduate of HKU Architectural Studies, is now entering the global stage. The project has received support along its journey from funding sources including the HKU DreamCatchers 100K Fund and the Technology Startup Support Scheme for Universities. It won the Consumer Electronics Show (CES) Editors' Choice Award in Bicycling in 2020.



“We built the components first, then the bike – because owning the technology from the ground up is the only way to truly lead the market.”

Mr Jon Chan



REIMAGINING SCREEN TIME



Mr David Lee
Co-Founder & CEO, Nex

Nex, a company co-founded and led by HKU alumnus Mr David Lee, uses cutting-edge technology to bring people together and offer community engagement experiences. The company began a few years ago with HomeCourt, an AI-powered basketball training app that was backed by NBA stars such as Jeremy Lin and became very popular during the COVID-19 pandemic. In 2023, it launched Nex Playground, which uses AI and computer vision to turn any living room into an immersive active play experience for up to four players – no wearables or controllers required.

Nex Playground was picked up by major US retailers such as Target and Walmart and its sales multiplied in 2025. The play system was also named one of Time magazine's Best Inventions of the Year and Parents' magazines Toy of the Year.

Mr Lee founded his first company during his time in HKU in 2003, which was later acquired by Apple. Before founding Nex, he was a Senior Engineering Manager at Apple, where he led the engineering team behind the development of iWork for iCloud.



“Technology changes, but families don't. We take the long-term view of how we can serve their needs better and better.”

Mr David Lee



PIONEERING NEXT-GENERATION VACCINES



Dr Qiubin Lin
Founder & CEO, Delonix Bioworks

A team of HKU-connected scientists has developed genetically engineered bacterial vaccines and, through their company Delonix Bioworks, are using their platform to target unmet needs such as meningococcal diseases and *Neisseria gonorrhoeae* infection. Since its founding in 2021 by two HKU PhD graduates, Dr Qiubin Lin and Dr Baozhong Zhang, and Professor Jiandong Huang, Chair Professor of Synthetic Biology, LKS Faculty of Medicine, School of Biomedical Engineering, Delonix has accelerated rapidly with support including US\$14 million seed funding in its founding year and winning the Grand Prize at the 2023 HKU Innovation & Entrepreneurship Challenge.

In 2026, Delonix became the first biotech in Chinese Mainland to secure IND clearance for an engineered OMV vaccine, the Group B meningococcal OMV vaccine DX-104. The vaccine is now advancing into parallel Phase 1 clinical trials in the Chinese Mainland and Australia.

“HKU was the crucible where my scientific resilience was forged. Navigating early setbacks during my doctoral studies taught me to tackle complex problems by exploring diverse avenues and learning from leading experts. In entrepreneurship – where challenges span science, fundraising and leadership – the mental toughness and structured, analytical mindset I developed at HKU remain my core strengths in steering a biotech enterprise through uncertainty.”

Dr Qiubin Lin



FROM MEME TO MINT: RAY CHAN'S NEW CHAPTER IN CULTURAL COLLECTIBLES



Mr Ray Chan
Co-founder, 9GAG &
CEO, MemeStrategy (HKEX:2440)

HKU alumnus Ray Chan is a homegrown Hong Kong entrepreneur and co-founder of 9GAG, a global meme platform launched in 2008 with a simple mission: to make the world happier. Since then, 9GAG has grown into one of the world's leading humour-based social media platforms, reaching more than 200 million users worldwide.

As the company expanded beyond Hong Kong, Ray and his team joined the 500 Startups and Y Combinator accelerator programs in 2011 and 2012, connecting 9GAG with Silicon Valley's technology ecosystem and reinforcing its community-led approach to digital innovation. Today, 9GAG's global reach and influence on internet culture stand as a testament to the worldwide potential of a Hong Kong-founded technology company.

In 2025, Ray acquired a controlling stake in a company listed on the Hong Kong Stock Exchange and rebranded it as MemeStrategy (HKEX:2440). As CEO, he now leads its growth at the intersection of digital innovation and cultural collectibles. Through the Grade10 brand, he is building an integrated trading card ecosystem spanning production, grading, vaulting, financing, retail and events, including Grade10 FEST, the largest trading card show in Hong Kong, which draws 25,000+ collectors per edition.



“In the age of AI, tangible experiences are becoming more valuable than ever. They create moments of connection, shared stories and a sense of community – the kind that technology alone can't replicate. We aim to build the digital infrastructure that supports it, while carrying forward 9GAG's enduring mission: to make the world happier.”

Mr Ray Chan



CLEARBOT: THE AUTONOMOUS AQUA-CLEANER



Mr Sidhant Gupta
Co-Founder & CEO,
Clear Robotics
Mr Utkarsh Goel
Co-Founder & CTO,
Clear Robotics

Co-founded in 2019 by engineering alumni Sidhant Gupta and Utkarsh Goel, Clear Robotics empowers communities, businesses, and governments worldwide with electric, autonomous marine technology to build cleaner, safer, and more efficient waterways. In under seven years, Clear Robotics has engineered a fleet of four specialised self-driving vessels.

Clear Robotics' vessels are 100% electric, zero-emission watercraft designed for fully autonomous or remote operation. Clear Robotics operates a specialised fleet of four zero-emission electric vessels – Fetch, Class 2, Class 3, and Alligator – tailored for everything from narrow-space inspections and heavy-duty trash collection to invasive weed removal. Built to navigate shallow and tight spaces, they clean waterways by clearing up to 200 kg of floating debris or 90 square meters of invasive weeds per hour. In addition, these agile vessels conduct precise bathymetric, draft, and water quality surveys, delivering real-time data and actionable insights directly to a user-friendly monitoring dashboard.

Today, Clear Robotics actively 27+ boats and operates across Hong Kong, Singapore, Manila, and India, working alongside prominent international partners to achieve its ultimate goal: building the world's largest fleet of unmanned ships.



“No one should risk their life in hazardous waters to clear trash or run surveys—we are taking humans out of harm's way and setting a new global standard for safe, autonomous maritime work.”

**Mr Sidhant Gupta
and Mr Utkarsh Goel**

We extend our sincere gratitude to the staff, partners, and students for their incredible support in the making of this publication.

About HKU RISE

HKU RISE — Research, Innovation, Strategic Partnerships and Entrepreneurship — is dedicated to translating discoveries into practical solutions that foster positive social impact and contribute to a sustainable future.

We connect the HKU community with essential services and opportunities, including research funding, intellectual property (IP) management, knowledge/technology transfer, commercialisation, industry collaborations, and startup incubation.

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We are witnessing an unprecedented era of discovery, with breakthroughs creating new possibilities for generations to come. HKU is at the forefront of innovation, shaping the future of our city, region, and the world.

We warmly invite you to be part of this remarkable chapter by supporting HKU RISE. Your generous contribution will empower our researchers to pursue breakthroughs and help realise their innovations from the laboratory to the wider world, creating lasting impact for the humanity.

Together, we accelerate discovery, catalyse innovation, and create lasting impact across the global community.



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