

# Excel **x** Impact

Autumn 2023

## Embracing **SMART AGEING** with gerontechnology

Pioneering education model  
wins UGC Teaching Award

PolyU scholars honoured by National  
Natural Science Foundation of China

PolyU-nurtured startups listed in  
Forbes Asia 100 To Watch 2023



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## President's Message

As you may already know, the University Council has renewed my Presidency for a second five-year term, with effect from 1 July 2024. I am greatly honoured and humbled by this re-appointment and will continue striving to elevate The Hong Kong Polytechnic University (PolyU) to new heights in the years ahead.

This renewal comes at an exciting time when PolyU is excelling in education and research. For example, in education, our nursing scholars received the prestigious UGC Teaching Award 2023 for innovations, enhancing students' cultural awareness and global competence. In research, our scholars were honoured with the BOCHK Science and Technology Innovation Prize 2023 for exceptional achievements in 'Advanced Manufacturing' and 'Fintech'. Since the inception of this prestigious prize last year, PolyU has reinforced its position as a leading institution in Hong Kong, securing a total of four awards.

Our commitment to knowledge transfer and entrepreneurship continues to shine. We are proud that three startups nurtured by PolyU were included in Forbes Asia's '100 To Watch' 2023 list, marking them as rising stars in the Asia-Pacific region.

Moreover, we recently unveiled the University Square, PolyU's newest iconic landmark. This space epitomises our commitment to fostering a sustainable campus environment where students and staff can gather, collaborate, and relax, further enhancing our sense of unity and belonging.

As PolyU continues its journey of innovation and excellence, I sincerely appreciate your ongoing support.

Jin-Guang Teng  
President

# Embracing SMART AGEING

## with Gerontechnology

Population ageing is occurring at an unprecedented pace worldwide, posing significant challenges for Hong Kong, the Mainland, and the rest of the world, which makes the development of gerontechnology (gerontech) more pivotal than ever. Gerontech plays a crucial role in empowering older adults, improving their overall well-being, and enabling them to lead independent, connected, and fulfilling lives.

In an effort to empower seniors to maintain their overall well-being, PolyU has assembled leading multidisciplinary teams with strong expertise and track records in gerontech research, as well as collaborated with various stakeholders and supported startups. In the following pages, you will learn how PolyU is propelling the advancement of gerontech and engaging in other meaningful initiatives to help make smart ageing a reality for the elderlies in Hong Kong, the Greater Bay Area, and beyond.

### Establishment of the PolyU Research Institute of Smart Ageing

The PolyU Research Institute for Smart Ageing (RISA) adopts an interdisciplinary approach to ageing research, focusing on innovative solutions for the challenges faced by the ageing population, and aims to improve the quality of life for older adults and promote active and healthy ageing.

RISA comprises over 45 members from 15 academic departments and units at PolyU, covering a wide range of ageing-related issues such as medical

conditions, daily activities, and community-related topics. Their expertise includes stroke, dementia, osteoporosis, mobility, sleep, nutrition, caregiving, family dynamics, society, living space, and gerontechnology.

By leveraging technology, RISA develops innovative solutions like wearable devices, smart home systems, and telehealth technologies to enhance older adults' independence, safety, and

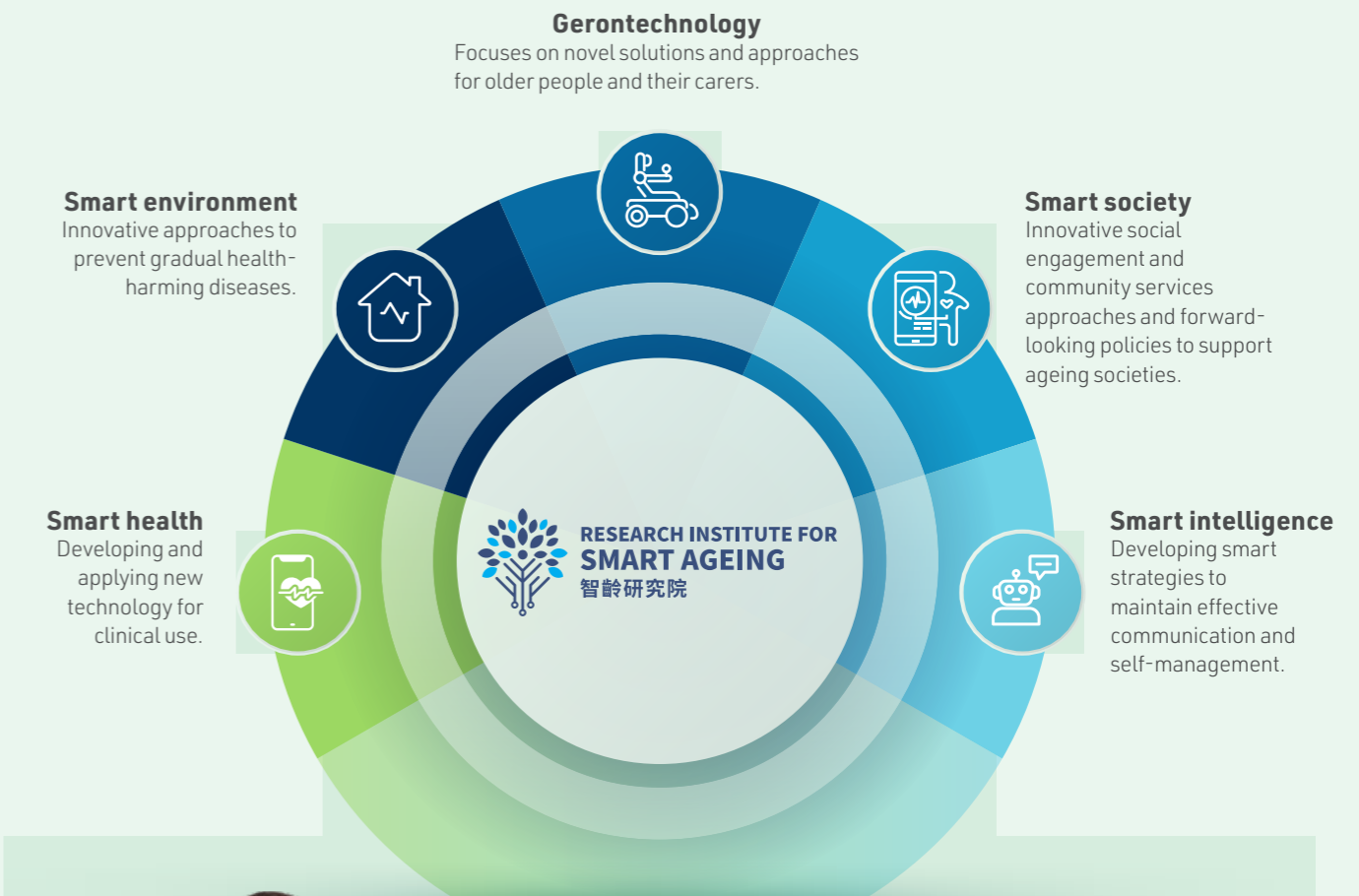
well-being. These technologies monitor health conditions, provide personalised care, and enable remote healthcare services.

Additionally, RISA collaborates with industry partners, government agencies, and community organisations to translate research findings into

practical applications. Through knowledge transfer and technology commercialisation, the institute aims to positively impact society and contribute to developing an intelligent ageing ecosystem.

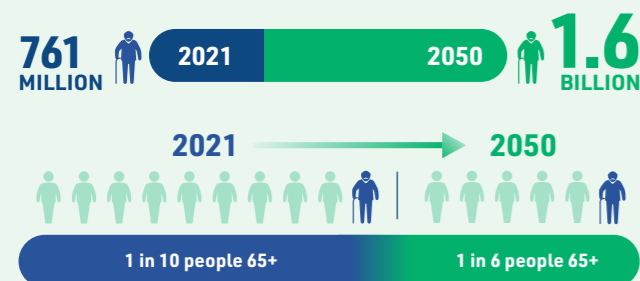
RISA is under the PolyU Academy for Interdisciplinary Research, also known as PAIR.

### Five research directions of RISA



### OVER Two-Fold Increase

The number of people aged 65+ will **MORE THAN DOUBLE** from

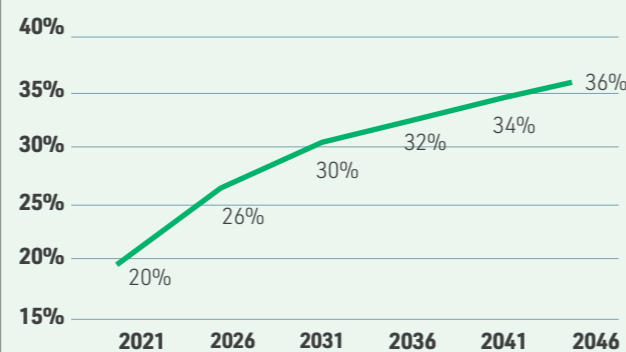


### THE 80+ Population is growing fast



Source: United Nations World Social Report 2023

### Share of population aged 65 and older in Hong Kong from 2021 to 2046



■ The Census and Statistics Department predicts that by 2046, 36% of the city's population will be aged 65 or above, meaning that over one in three people in Hong Kong will be an elderly person.



Smart ageing can simply mean 'better ageing', in that we perform activities like eating, communicating, managing time, sleeping, and exercising in a smarter way. Understanding how to become smarter is also a dimension of smart ageing.



**Professor Zheng Yong-ping,**  
Director of Research Institute for Smart Ageing

## • Moving Forward with the United Nations Decade of Healthy Ageing •

Population ageing is a pressing priority in the Western Pacific region, home to one of the world's largest and fastest-growing elderly populations. In October, the Healthy Ageing Conference 2023 was successfully held in Hong Kong. Organised by the World Health Organization (WHO) Collaborating Centre for Community Health Services of the School of Nursing of PolyU, and co-organised by the Department of Health of the HKSAR, RISA, and the PolyU Department of Rehabilitation Sciences, the conference laid a solid foundation for implementing an action plan on healthy ageing for the region. Ultimately, the goal is to realise the visions outlined in the United Nations Decade of Healthy Ageing (2021–2030) and create a healthier, more inclusive future for older individuals and their communities.



■ Distinguished guests and speakers presided over the inaugural ceremony of the Healthy Ageing Conference 2023, including Prof. Jin-Guang Teng, President of PolyU (centre); Mr Zhang Hui, Counsellor (DG level) from the Department of Ageing and Health, National Health Commission of the People's Republic of China (fourth from right); Dr Ronald Lam, Director of Health from the Department of Health of the HKSAR Government (fourth from left); Prof. David Shum, Dean of Faculty of Health and Social Sciences of PolyU (third from right); Prof. Engle Angela Chan, Interim Head of the School of Nursing of PolyU (third from left); Prof. Zheng Yongping, Director of Research Institute for Smart Ageing of PolyU (second from right); Dr Hiromasa Okayasu, Director of the Division of Healthy Environments and Populations at the WHO Western Pacific Regional Office (second from left); Dr Arnold Wong, Associate Professor of the Department of Rehabilitation Sciences of PolyU, (first from right); Prof. Angela Yee-man Leung, Director of the World Health Organization Collaborating Centre for Community Health Services, School of Nursing of PolyU (first from left).

## Pioneers in promoting gerontechnology

To tackle the challenge of a continued ageing population in Hong Kong, PolyU has proposed a project named "Jockey Club Smart Ageing Hub" (JCSAH, the Project). The goal of the Project is to promote new gerontech and improve the service

quality of residential care for the elderly. In December 2017, the project received a donation of HKD 47.95 million from The Hong Kong Jockey Club Charities Trust and was included in the list of the HKSAR Chief Executive's Community Project.



■ Mr Chris Sun, Secretary for Labour and Welfare of the Hong Kong Special Administrative Region (fifth from right), Mr Bryan Wong, Head of Charities (Positive Ageing & Elderly Care) of The Hong Kong Jockey Club (fourth from right), and Dr Miranda Lou, PolyU Executive Vice President (fifth from left), took a photo with Dr Eric Tam, Deputy Director of Jockey Club Smart Ageing Hub (fourth from left) and representatives of six strategic partners of the Real-life Hostels.

The Project aims to establish a cross-disciplinary network, not only to raise public awareness about gerontech but also to connect stakeholders in the field of elderly care to facilitate the sharing and exchange of ideas for enhancing the quality of relevant products and services.

Some of the innovative technology solutions developed by the Project include gerontech solutions that fit the operational needs of the Real-life Hostels, such as the eNightLog bed-leaving monitoring system, smart toilet sensing system, and a detachable laser indicator for gait training, have been implemented in multiple hostels.

Recently, PolyU hosted the JCSAH Project Achievement Sharing Day, sharing with stakeholders

the Project's fruitful achievements thus far. Discussion was also held on the future development of Hong Kong's gerontech ecosystem.

Mr Bryan Wong, Head of Charities (Positive Ageing & Elderly Care) of The Hong Kong Jockey Club, stated that the Project had made remarkable contributions to the promotion and development of gerontech, winning widespread societal recognition.

In the next three years, the Project team will continue to provide gerontech support to the community and collaborate with 11 self-financing residential care homes for the elderly operated by small-to-medium NGOs. The aim is to create more intelligent residential care homes, further develop the elderly care industry and promote wider adoption of gerontech in the community in light of the challenges posed by an ageing population.

## The six-year effort of JCSAH to promote the application of local gerontechnology has produced fruitful results

- 1 Collaborated with six non-governmental organisations to set up "Real-life Hostels" with gerontechnology devices, benefiting 3,500 elderly and disabled individuals, and alleviating the burden and pressure on frontline healthcare workers.



- 2 A "Day Experience Centre" was established within the PolyU campus. Besides, over 2,000 gerontech tools collected from around the world are showcased physically and virtually on the website.
- 3 Organised over 1,200 activities for public education on gerontech, benefiting over 40,000 individuals in Hong Kong, and contributing to the widespread application of gerontech.



■ Visitors to the Day Experience Centre

■ A Smart Ambassador (volunteer) is introducing the Smart Companion Robot to an older adult at the booth of the Gerontech and Innovation Expo cum Summit (GIES)

Supporting startups driving the development of gerontech

Two startups, co-founded by PolyU alumni and supported by the University, have made significant breakthroughs in gerontech product development. Their products not only enhance the quality of life for elderly and disabled individuals but also increase efficiency and alleviate the workload of healthcare workers.

Promoting freedom of travel with smart wheelchairs	
Startup	<b>Libpet Tech Limited</b>
Co-founders	Mr Jojo Xu - MSc in Electronic and Information Engineering Programme (2021) Mr Alex Lam - BEng (Hons) in Product Analysis and Engineering Design Programme (2021)
Innovation	<b>TENK</b> - a smart all-terrain wheelchair
Features	The wheelchair employs an exclusive, patented wheel belt system that can navigate rough terrains like grassland, beaches, and stairs, as well as cross-platform gaps at train stations without requiring assistance.  Equipped with Internet of Things sensing technology, the wheelchair enables users to monitor real-time information regarding speed, distance and battery level through a mobile app.
Benefits	This allows physically challenged people to travel independently and with ease. In case of an emergency, the smart system can immediately send alerts to caregivers and medical institutions for assistance.
Applications	Libpet has collaborated with organisations including the Hong Kong Federation of Handicapped Youth and Yang Memorial Methodist Social Service for product trials and testing.
Prospects	The startup has launched its wheelchair and currently has orders from Hong Kong, Mainland China, and South Africa. In the coming years, the company plans to expand its target markets in 2024-25 to include Japan, Singapore, Korea, and the Greater Bay Area, as well as Europe and North America in 2025-26.

■ Mr Jojo Xu (left) and Mr Alex Lam (right), co-founder of Libpet Tech Limited, with the smart all-terrain wheelchair TENK.



Relieving healthcare workers' workload with anti-infection mobile toilet	
Startup	<b>PREN Limited</b>
Co-founders	Mr Phil Woo Pak-fai - BA (Hons) in English for Business and Professional Communication in 2008, and a Master of Design (Design Strategies) in 2013 Mr Kong Lee - Userpreneur
Innovation	<b>allcareAI™</b> - anti-infection mobile toilet
Features	Controlled by built-in sensors in a patented integrated design, allcareAI's toilet seat and bowl are wrapped in a specially designed seat cover and excretion collecting bag to seal the dropped excretion into the temporary storage compartment below the mobile toilet, and automatically replaced with a new seat cover and excretion collecting bag in an unmanned way.
Benefits	Healthcare workers only need to collect the sealed bags from the temporary storage compartment for direct disposal, saving 74% time for cleaning and disinfection before and after each use. This process is both convenient and hygienic, and helps to prevent odour and excretion spills.
Applications	The anti-infection mobile toilet is currently undergoing trials and testing in various residential care homes in collaboration with the PolyU Jockey Club Rehabilitation Engineering Clinic. Additionally, PREN has been included in the supplier list of the Hospital Authority.
Prospects	The startup plans to introduce its products to the local market by the end of this year and expand to the Greater Bay Area within the next two years.

■ Mr Phil Woo (left) and Mr Kong Lee (right), co-founders of PREN Limited, with the allcareAI™ anti-infection mobile toilet.



An innovative approach to monitoring the health of the elderly

惜食堂 + X PolyU  
惜食天使 · 識健計劃

Joining hands with the charitable organisation Food Angel, PolyU's School of Nursing has launched a pilot programme aimed at monitoring the health of 100 elderly people living in Sham Shui Po. The two-year project has received a donation of over HK\$11 million from the Li Ka Shing Foundation.

As part of the pilot programme, PolyU will train Food Angel's staff to conduct basic health checks on elderly individuals – including measuring their blood pressure and blood oxygen levels, as well as pain index – while distributing lunch boxes to them. The health data collected by the delivery workers will be uploaded to the mHealth monitoring platform. Registered nurses (RNs) will have access to the platform to evaluate the health status of older adults. When needed, a registered nurse will give in-depth personal care and interventions via the mHealth app to the older adult.

This programme will provide a more effective way of managing the health of the elderly through remote monitoring. Referrals to allied health professionals or social workers can also be made by the RNs for early interventions. The team hopes that this first-of-its-kind grassroots community health model or health-social partnership will give the Government scientific evidence for adopting the mHealth app and the service model, as a way to strengthen primary health care.



Gerontech and Innovation Expo cum Summit



In November, RISA and JCSAH participated in the Gerontech and Innovation Expo cum Summit (GIES), the largest gerontechnology public education event in Hong Kong. The expo provided an opportunity for the general public, elderly, and rehabilitation service sector to explore and learn more about gerontechnology.



With the rapidly increasing elderly population, a significant challenge looms over all sectors of society. Embodying its motto of "To learn and to apply, for the benefit of mankind," PolyU is committed to fostering an environment conducive to the ageing process. This commitment is achieved through research, education,

practical initiatives, and collaborative efforts with various stakeholders. The ultimate goal of PolyU is to emerge as a leading university in advancing smart ageing, benefiting not only Hong Kong but also the Nation and the world at large.





PolyU actively promotes strategic plans for advancing PolyU's research and innovation in the Mainland, translating scientific research to meet the needs of industry and society.



# Driving Impactful **RESEARCH** and **INNOVATION** in the **MAINLAND**

## A conversation with Associate Vice President (Mainland Research Advancement) Professor DONG Cheng

A distinguished biomedical engineer, Professor DONG Cheng was appointed Associate Vice President (Mainland Research Advancement) at PolyU in 2023. He also serves as Chair Professor of Cell Engineering and ImmunoMedicine and Director of The Hong Kong Polytechnic University Shenzhen Research Institute. Prior to PolyU, he had a prolific career in the US and received prestigious awards including the Faculty Career Award from the US National Science Foundation.

**You have been working overseas for more than 30 years. What drove you to join PolyU as the Associate Vice President (Mainland Research Advancement) and Director of The Hong Kong Polytechnic University Shenzhen Research Institute (SZRI)?**

Indeed, it was a big decision for me when I considered moving from the US to Hong Kong, especially after spending more than three decades of my academic career in an American institution as a professor and an academic administrator. What really attracted me to join PolyU was the University's reputation and its significant emphasis on research innovation and translation.

In my capacity as the Associate Vice President for Mainland Research Advancement, I will lead PolyU in large-scale research advancement across Mainland China, promoting research translation and enterprise where it is most needed.

Furthermore, my position as the Director of SZRI provides me with another important opportunity to make PolyU's research more impactful. I am eager to shape SZRI into a more "theme-based multi-investigators interdisciplinary platform", so that PolyU's translational research will meet the most critical needs in Shenzhen, as well as the Greater Bay Area (GBA), now and in the near future.

**Could you share your insights into the University's future strategies for advancing its research impact in the Mainland?**

If we focus solely on the Hong Kong market, we will miss an opportunity to advance our research enterprise goals. It is critically important for us to learn the Mainland's needs from local governments, industries, and higher education institutions in technology innovation, talent cultivation and economic growth. We must focus our strategies for PolyU on effective research innovations and translations into impactful applications in the Mainland.

Currently, PolyU is building multiple Technology and Innovation Research Institutes in Mainland cities, including Jinjiang, Wuxi, Hangzhou, and Wenzhou, amongst others, where we could accomplish such goals. All these reflect our strategic plans for advancing PolyU's research and innovation in Mainland China.

At the same time, a strategic shift of SZRI into a more "theme-based multi-investigators interdisciplinary platform" will foster greater impact for research innovation and translation that meet the needs of the GBA. Detailed areas of platform development are currently under discussion, involving both the PolyU leadership and the Shenzhen local government. Plans are slated to be launched at the beginning of 2024.

**From your perspective, what are the strengths and opportunities of PolyU in advancing its research impact in the Mainland?**

PolyU possesses applied research strengths. We also have eleven research institutes and six research centres (under the PolyU Academy for Interdisciplinary Research) to facilitate interdisciplinary collaboration for impactful research to address key societal challenges. We shall fully advance these strengths and translate our research innovations into applications. A crucial word for how and where PolyU can fulfill our mission is 'opportunities'. The strategies we have in place for advancing our Mainland research impact and translation I mentioned earlier will take PolyU to the next level of success.

**As the Chair Professor of Cell Engineering and ImmunoMedicine, could you share some of your recent research focuses with us?**

My research area lies in biomedical engineering, specifically in cellular and immune-engineering, focusing on immune cell-mediated drug delivery and immunotherapies. As part of the developments of the new SZRI platform, I aim to build and focus on three key new areas for my research: Stem Cells and Immune Engineering, Cell Manufacturing, and Immune Cell Therapy. Research in these areas will have an impact on clinical applications, immunotherapy, personalised medicine and industrial technology innovation.

**Could you share your views about the future development of biomedical engineering? And in what ways PolyU could elevate its biomedical engineering research to the next level?**

Biomedical Engineering (BME) is one of the fastest growing disciplines within the fields of engineering and science. Its applicability in the medical field makes it a truly interdisciplinary profession. In terms of BME at PolyU, we prepare our students to become future leaders in medical professions, healthcare industries, biomedical research, and academia.

PolyU's current strategies in building various Technology and Innovation Research Institutes in the Mainland offer great opportunities for biomedical innovation to meet societal and industrial needs, and hence are a perfect platform for BME research translation and success.

**What advice would you give to young people who aspire to be successful researchers in Mainland China, especially in the Greater Bay Area region?**

Keep your eyes open, keep your mind open, and pursue interdisciplinary fields. It is not a matter of which specific major you choose; it is a matter of where your passion lies. PolyU is now charting a new path and is building new connections in the Mainland, especially in the GBA, where there are plenty of opportunities to apply and translate knowledge into something that can really benefit mankind. So, come join PolyU!

**Do you have a motto that you live by?**

There is no limit to what we can achieve: the sky is not the limit.

**What are your hobbies? How do you spend your leisure time?**

Walking, hiking, biking, and photography. I enjoy nature, as well as good food.

## PolyU nursing scholars' pioneering education model awarded the UGC Teaching Award

The Internationalisation at Home (IaH) team from PolyU's School of Nursing received the University Grants Committee (UGC) Teaching Award in the Collaborative Teams category for 2023 in recognition of their achievement in developing a new IaH education model, which goes beyond conventional clinical practices to develop students' cultural awareness and global competence.



■ During the UGC prize presentation ceremony, the Internationalisation at Home team received the 2023 UGC Teaching Award in the Collaborative Teams category from Mr Tim Lui, Chairman of UGC (centre). Team members receiving the award included (from left) Dr Arkers Wong Kwan-ching, Prof. Engle Angela Chan (team leader), Dr Betty Chung Pui-man, and Mr Timothy Kam-hung Lai, from the School of Nursing.



### IaH activities integrated into study programmes for eight years

Led by Professor Engle Angela Chan, Interim Head and Professor of the School of Nursing, the IaH team members included Dr Arkers Wong Kwan-ching, Assistant Professor; Mr Timothy Lai Kam-hung, Associate Professor of Practice; Dr Betty Chung Pui-man, Assistant Professor of Practice; and Dr Doris Leung Yuet-lan, Adjunct Assistant Professor.

Since 2015, the team has integrated IaH activities in the BSc (Hons) in Nursing programme and post-graduate collaborative projects with local and international peers designed to enhance students' global learning experience, impacting over 1,100 undergraduate and postgraduate students globally.

During the pandemic, the team provided a platform to continue the cultural exchange activities, serving as an online "overseas exchange" learning experience to develop students' global vision. Other colleagues in the School of Nursing also adopted the IaH model into their Service-Learning subject and summer exchange programme.

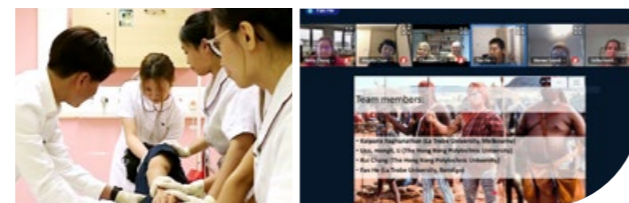
The team hopes to further the impact of IaH across multiple disciplines and will integrate virtual reality technology to provide an immersive learning experience.



Professor Engle Angela Chan

### Examples of IaH activities at undergraduate and postgraduate levels

- Student-created and video-based simulated scenarios help students learn in various clinical practices across cultural contexts.
- Students from PolyU and overseas universities discussed the ethical and cultural dilemmas associated with nursing professional and research practices, which help students integrate international and intercultural dimensions into their research.



IaH activities focusing on peer-led mentoring can help students enhance their continuous development in global competence and ability to communicate with culturally diverse patients by gaining in-depth understanding and appreciation of clinical practices worldwide.

## Launch of the Yuen Ren Chao Prize in Language Sciences

The Faculty of Humanities of PolyU launched the Yuen Ren Chao Prize in Language Sciences to honour scholars and researchers who have made distinguished contributions to language sciences and to inspire future generations of scholars and students in language science research.

This international award is named after the late Professor Yuen Ren Chao, widely regarded as the father of modern Chinese language studies. His significant academic contributions have left an indelible mark on humanities research and education, influencing scholars in China, Asia and around the world.

■ PolyU's central management team, members from the Faculty of Humanities, and distinguished guests officiated the launch ceremony of the Prize.



Scan the QR code to learn more about the Prize



■ Renowned artists Dr Warren Mok and Ms Bing Bing Wang performed the songs composed by Prof. Chao.

### The launch ceremony of the Prize

PolyU central management team, joined by Professor Li Ping, Dean of the Faculty of Humanities; and Professor William Wang Shi-yuan, Chair Professor of Language and Cognitive Sciences; officiated the launch ceremony along with distinguished guests including Dr Louis Ng Chi-wa, Director of Hong Kong Palace Museum; Professor Ovid Jyh-Lang Tzeng, Academician of Academic Sinica; Dr Warren Mok, Artistic Director of Opera Hong Kong and renowned tenor; Ms Bing Bing Wang, renowned soprano; and Professor Xu Jie, Dean of Faculty of Arts and Humanities of the University of Macau.

The ceremony opened with a welcoming remark by Professor Jin-Guang Teng, President of PolyU,

saying that "the Prize will serve as a crucial catalyst in fostering greater linguistic and cultural understanding in the years to come." Dr Louis Ng, Professor William Wang, Professor Ovid Tzeng and other distinguished academics gave their insights and sharing on Professor Chao's academic achievements and contributions.

### Two awards are to be given biennially

During the event, Professor Li Ping announced that two awards under the Prize will be presented biennially, starting in 2024. They are the Lifetime Achievement Award and Early Career Contribution Award, to senior and junior scholars who have made distinguished contributions to research and education in language sciences, respectively.

# Igniting social responsibility through SERVICE-LEARNING

PolyU places a strong emphasis on providing a holistic education in order to nurture civically engaged global talents for Hong Kong and beyond. To this end, we are the first university in Hong Kong to make Service-Learning (SL) a graduation requirement for all undergraduate students, with aspirations to become a centre of SL excellence in Asia.

Since their launch in 2012/13, our SL programmes have been well-recognised in professional and international communities. This year, we celebrate the 11th anniversary of the programme and its positive impact on society.

We offer over 70 SL subjects taught by more than 30 academic units, educating students about social issues and enabling them to apply their classroom knowledge to serve the community.

Since 2012, our SL initiative has enrolled more than 37,900 students, contributing over 1.51 million hours of service to communities in Hong Kong, Mainland China and Taiwan, as well as other places such as Cambodia, India, Indonesia, Japan, Kazakhstan, Kyrgyzstan, Myanmar, Philippines, Rwanda, South Africa, Thailand and Vietnam.

Cambodian students in the STEM workshops organised by PolyU students.



**Making an impact beyond the classroom**  
The United Nations (UN) Sustainable Development Goals (SDGs) are a collection of 17 interlinked objectives adopted by the UN General Assembly in their 2030 Agenda with a target of creating a better life for humankind. As a member of the global community, the PolyU SL programme nurtures students into socially responsible global citizens. It guides them in applying their knowledge and skills towards addressing these SDGs. Some SDGs currently being addressed by our programme are the following:

Theme	SDG		
STEM Education and Language Enhancement	4	QUALITY EDUCATION	
Community Development	7	AFFORDABLE AND CLEAN ENERGY	11
Leadership Training	3	GOOD HEALTH AND WELL-BEING	4
Health Care Support	3	GOOD HEALTH AND WELL-BEING	
Capacity Building	8	DECENT WORK AND ECONOMIC GROWTH	11
Raising Awareness and Combating Stereotypes	5	GENDER EQUALITY	10



Dr Grace Ngai, Head of PolyU's Service-Learning and Leadership Office (front row, fourth from left), Mr Mbonyumuvunyi Radjab, Mayor of Rwamagana District (fifth from left), Ms Lin Hang, Minister Counsellor and Deputy Head of Mission of the Embassy of the People's Republic of China in Rwanda (sixth from left), and teachers and students from the PolyU-led team of over 100 members, at the celebration ceremony.

## Powering up Rwandan villages via rural electrification

A shining example is the accomplishments of our students and teachers in Rwanda this summer. PolyU sent a team of over 100 members, comprising of PolyU students and teachers, visiting students and teachers from the University Social Responsibility Network, and secondary students and teachers from Hong Kong, on a two-week SL programme, "Habitat Green in East Africa". They designed and developed green energy solutions for 400 families in seven remote villages in Rwanda.

Ambassador-designate of the People's Republic of China to the Republic of Rwanda Mr Wang Xuekun highly praised PolyU's Service-Learning programme. He said that the project enabled students to apply what they had learned in bringing electricity to impoverished families in Rwanda. In building bonds between peoples, the SL programme demonstrated the spirit of Belt and Road.

After more than ten years of Service-Learning in Rwanda, our teams have installed over 1,200 solar power systems, offering reliable and sustainable basic electricity supply to rural villages, many of which have never seen artificial light. These include 150 systems that were installed during COVID using a pioneering "tele-engineering" approach

Moving forward, PolyU will continue to advance meaningful Service-Learning projects, and enhance our students' learning with global citizenship and cross-cultural competencies through an expansion of our non-local SL programmes. It is planned that by the 2027/28 academic year, every undergraduate student will have a non-local study opportunity, half of which will be achieved through our SL programmes.

Learning trip to GBA and Singapore advanced students' competitiveness

The Student Affairs Office organised the Student Leaders' Greater Bay Area (GBA) and Overseas Learning Trip this summer to expand PolyU students' global outlook and advance their competitiveness by engaging in innovative and entrepreneurial activities.

The seven-day trip was led by Professor Ben Young, PolyU's Vice President (Student and Global Affairs) and Professor Albert Chan, Dean of Students. 24 student leaders who held positions in departmental student societies and interest clubs were selected to join the trip.



■ PolyU student leaders had a one-week outbound trip led by Prof. Ben Young (front row, fifth from right), Prof. Albert Chan (front row, fourth from right), and Ms Kelly Lam, Associate Dean of Students and Section Head (Student Development) of the Student Affairs Office of PolyU (front row, sixth from right).

Distinguished alumni shared entrepreneurial experiences

The delegation visited Guangzhou and met Mr Liu Sing-cheong, an Outstanding PolyU Alumni Awardee and University Fellow, who has a rich connection with entrepreneurs. He facilitated visits to firms in the fields of insurance, home decoration, and architecture for students to learn about the entrepreneurs' successful stories.

Explored the diverse culture of Singapore

The PolyU delegation then visited Singapore. They toured the National University of Singapore and the Nanyang Technological University and exchanged views with the universities' student affairs unit. They also explored the diverse culture of Singapore and were immersed in the urban green space of the "Garden City".

■ Mr Liu Sing-cheong (front row, second from left) arranged visits to enterprises in Guangzhou.



Students also gained insights from the entrepreneurial sharing by Dr Johnny Ng Kit-chong, an Outstanding PolyU Alumni Awardee. Dr Ng encouraged students to seize opportunities by going for their passion with perseverance. The students were inspired to discover opportunities in GBA and other countries..

Professor Albert Chan said this enriching trip provided opportunities for students to interact with alumni, industry leaders and institutional partners from the Mainland and overseas, which allowed them to gain valuable insights and experiences.

PolyU is committed to nurturing a global and outward-looking mindset among students. Currently, the University offers financial support of up to HK\$10,000 to each undergraduate student participating in Service-Learning and CAR subjects with a non-local learning component.

■ Dr Johnny Ng Kit-chong (the person standing) shared his insights into entrepreneurship during the students' visit to Singapore.



PolyU education technologies win EdTech Heroes Award

Two of PolyU's education technology projects have recently received the EdTech Heroes Award. The Hybrid Immersive Virtual Environment (HiVE) team won the Grand Award (Higher Education), the Educational Development Centre (EDC) received the Learning Experience Award in Adult Learning Track.

The EdTech Heroes Award is organised by Esperanza, a non-profit organisation founded by the former Financial Secretary Mr John Tsang. The Award seeks to encourage the adoption of technologies to innovate teaching and learning in Hong Kong.

Project	<b>Transforming Education: Embrace and Unleash the Power of Student-led Education via Expanding Horizons with Compassionate Tech-Education</b>	Project	<b>A Pioneering Learning Analytics Platform for Quality Assurance in Higher Education in Hong Kong</b>
Team	HiVE	Team	EDC Learning Analytics Team
Award	Grand Award (Higher Education)	Award	Learning Experience Award
Project description	The project team has been leading the development of innovative pedagogies and the implementation of immersive learning activities using the Hybrid Immersive Virtual Environment (HiVE). Through the HiVE platform, the team has successfully integrated the concepts of blended learning and flipped classroom modes into their teaching approach, empowering students to take ownership of their own learning. Funded by the PolyU Large Equipment Fund and recognising the importance of student engagement, peer support and staff-student partnership in creating a vibrant and interactive learning environment, this initiative aims to benefit all PolyU staff and students.	Project description	The Learning Analytics Platform (LAP) is an advanced educational tool designed to collect data from different sources and connect them to provide a holistic view of student learning to different stakeholders, including management, teachers, students and support staff. LAP consolidates data and simplifies the processes of data collection and analysis by integrating seamlessly with the institution's infrastructure to enable an effective and efficient data reporting environment. The platform not only provides data and visualisations but also guides stakeholders to use the data provided systematically for quality assurance. As such, LAP fosters an evidence-based approach to continuous improvement of pedagogy.



■ Professor David Shum, Dean of Faculty of Health and Social Sciences (fourth from right) receives the award from Mr John Tsang, Founder of Esperanza (fourth from left) on behalf of the HiVE team.



■ Mr John Tsang (second from left) presents the award to Dr Julia Chen, Director of Education Development (centre), Ms Ada Tse (first from left) and Mr Dick Chan (first from right), Educational Development Officers, EDC.

## Groundbreaking invention for implantable bioelectronic devices:

# LIQUID METAL MICROELECTRODES

with soft, stretchable and permeable properties

**P**olyU-led Interdisciplinary Research Team, led by Professor Zheng Zijian, Chair Professor of Soft Materials and Devices in the Department of Applied Biology and Chemical Technology, has successfully developed a new type of liquid metal microelectrodes ( $\mu$ LMEs) with unprecedented flexibility, stretchability, and permeability, which can be applied in implantable biocompatible electronic devices. The research findings have been published in the international scientific journal *Science Advances*.

### Achieving long-term biocompatibility

The team placed a fibrous polymer onto silver (Ag) micropatterns using electrospinning to create  $\mu$ LMEs, enabling patterning at an ultra-high density of up to 75,500 electrodes per square centimetre, surpassing the previous achievements by thousands of times. These cutting-edge  $\mu$ LMEs possess long-term biocompatibility, allowing comfortable wear on human skin, and have been demonstrated for specific applications in monitoring animal brains.

Previous biocompatible electronic devices were fabricated on porous elastomers, but the porosity and roughness of these substrates limited the patterning resolution, making it challenging to increase electrode density. The research team successfully overcame this bottleneck by using the technique of photolithography to place electronic circuitry onto the fibrous polymer substrates, achieving a thin and flexible structure that is highly conductive under high strain and possesses long-term biocompatibility, similar to thin paper.

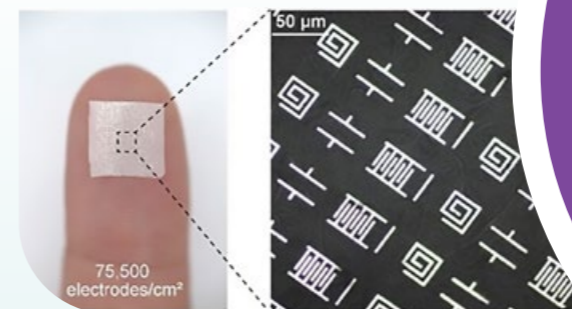
The conductive component used in  $\mu$ LMEs, eutectic gallium-indium (EGaIn), is a liquid metal alloy with a low melting temperature that maintains conductivity under extreme strain. It is also flexible and highly biocompatible. During the fabrication process, the circuitry patterns made of EGaIn is placed onto a permeable "fibre mat" created through electrospinning. This fabrication method results in a soft, flexible and stretchable electronic device suitable for comfortable wear and implantation.

The concept of a super-elastic fibre mat was first developed by Professor Zheng's team in 2021 and is now adopted in the newly developed  $\mu$ LMEs.



### Professor Zheng Zijian

- Chair Professor of Soft Materials and Devices, Department of Applied Biology and Chemical Technology
- Lead Investigator, Otto Poon Charitable Foundation Research Institute for Smart Energy
- Associate Director, Research Institute for Intelligent Wearable Systems
- Associate Director, University Research Facility in Materials Characterization and Device Fabrication



■  $\mu$ LMEs with a high density of 75,500 electrodes/cm<sup>2</sup>

To validate the flexibility and stretchability of  $\mu$ LMEs for use as an ideal choice for implantable neural interfaces for brain monitoring, the team synthesised a  $\mu$ LMEs array with small electrode diameter and high channel density to serve as an electrocorticography signal receiver in the rat brain. The  $\mu$ LMEs exhibits mechanical properties similar to brain tissues, allowing it to attach closely to the cortical surface and accurately record neural signals in vivo. When a sleeping rat generates identifiable brainwaves during non-rapid eye movement sleep, the  $\mu$ LMEs array can precisely detect somatosensory evoked potentials resulting from electrical stimulation applied to different parts of the body.

### Unlocking new possibilities in implantable bioelectronics

Notably, the softness and stretchability of the  $\mu$ LMEs also make them ideal for implantation at the neural interface for brain monitoring. The



Thanks to the combination of photolithography and soft, permeable SBS fibre mats, microelectrodes with unprecedented resolution and biocompatibility are realised. The technological advancement in medical and augmented reality fields can be pushed forward by these  $\mu$ LMEs.

Professor Zheng Zijian



exceptional properties of the  $\mu$ LMEs also extend their applications beyond brain monitoring. When applied to human skin, these  $\mu$ LMEs electronic patches leave only trace or even no residues when subjected to pressure, making them highly promising in the field of wearable electronics. Their potential applications range from physiological monitoring to medical diagnosis and interactive technology.

The research team, supported by funding from the Research Grants Council's Senior Research Fellow Scheme, PolyU, City University of Hong Kong, the National Natural Science Foundation of China, and InnoHK, remains committed to pushing boundaries further, aiming to enhance the patterning resolution of  $\mu$ LMEs, and unlock new possibilities in the field of implantable bioelectronics.

# A total of 27 healthcare solutions secure HK\$25.1 million from HMRF for the greater good

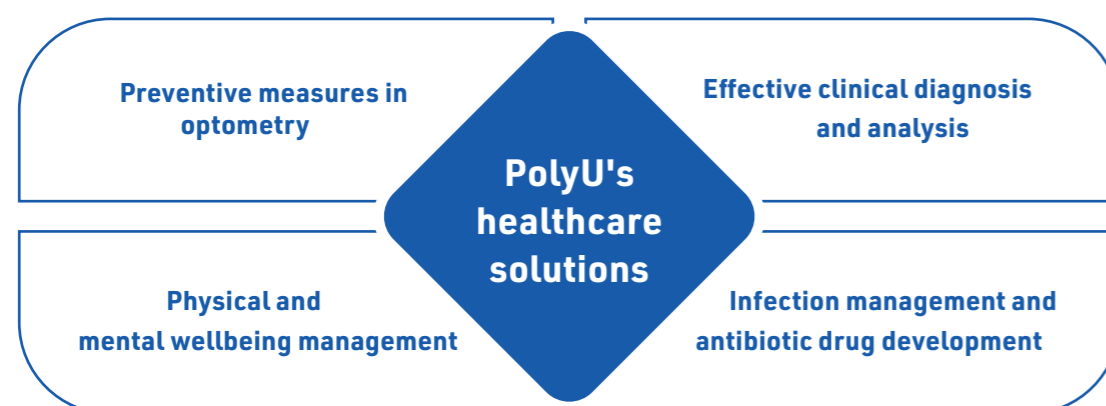


PolyU makes its best efforts to conduct ground-breaking research that addresses pressing health issues and provides innovative solutions to benefit individuals across all age groups. In the 2021 funding exercise, the University has received total funding support of HK\$25.1 million for 27 projects from the Health and Medical Research Fund (HMRF), representing an increase in the number of projects and the total amount awarded.

Researchers from the PolyU Faculty of Health and Social Sciences, Faculty of Humanities, Faculty of Science, and

School of Design are among those awarded funding to develop innovative and impactful solutions. The 27 studies address various medical and mental needs, from diagnosis to treatment, prevention, recovery, and physical and psychological care. The funded projects testify to PolyU's strength in interdisciplinary studies and determination to enhance the quality of medical and mental healthcare.

Below is a selection of projects awarded with HK\$ 1 million or more, sorted into four categories based on their research goals and outcomes:



## About HMRF

Established by the Health Bureau in 2011, HMRF aims to build research capacity and to encourage, facilitate and support health and medical research to inform health policies, improve population health, strengthen the health system, enhance healthcare practices, advance the standard and quality of care, and promote clinical excellence, through the generation and application of evidence-based scientific knowledge in health and medicine.

## Physical and mental well-being management

Technologies have been applied to enhance the efficacy of physical and mental treatment in both clinical and community settings.

- Dr Yvonne Han Ming-yee's research studies the long-term efficacy of transcranial direct current stimulation (a non-invasive neuromodulation technique) to improve the cognitive and social functions of individuals with autism.
- Dr Wong Yu-lok's research adopts online acceptance and commitment therapy education to improve mental well-being of teenagers with adolescent idiopathic scoliosis and their parents.
- Dr Wang Shanshan's project develops an e-bibliotherapy app/manual to improve psychological well-being and health-related quality of life for caregivers.
- Dr Wang Hailiang introduced traditional exercise Qigong and VR-based training to design an innovative VR-based Qigong exercise platform for older adults to delay the progressive course of dementia.

## Infection management and antibiotic drug development

Addressing infections and advancements in antibiotic medication have long been important areas of focus in medicine.

- Prof. Chen Sheng developed drug candidates for the treatment of infections.
- Dr Wong Wing-leung's project combats antibiotic resistance in bacteria, particularly superbugs.

Moving forward, PolyU researchers will continue to translate scientific discoveries into innovations and viable solutions for the betterment of society.

## Preventive measures in optometry

Research in primary eye care is of fundamental importance in protecting vision and preventing eye-related disease in the long term.

- Dr Do Chi-wai's project examines the therapeutic significance of baicalein in treating glaucoma.
- Dr Chun Ka-man's research combines optical and pharmaceutical intervention to control the progression of myopia in schoolchildren.

## Effective clinical diagnosis and analysis

The incorporation of artificial intelligence technologies, such as deep learning and machine learning, helps advance clinical diagnosis and analysis.

- Prof. Zhang Weixong's project uses AI technologies to integrate genomic and neuroimaging data to understand disease etiology and subtypes of schizophrenia for personalised medicine.
- Dr Li Tian's research enhances the image quality and clinical efficacy of the 4D multi-parametric MRI radiotherapy technique to achieve a more accurate measurement of tumour motion and volume in order to facilitate radiotherapy planning.

More on the 27 funded projects:



## World urban informatics experts shed light on the future of smart cities



■ The GSCS & ICUI 2023 Opening Ceremony was attended by: (from left) Prof. Gong Peng, Vice President and Pro-Vice Chancellor of The University of Hong Kong; Prof. Michael Batty, Fellow of the British Academy and the Royal Society; Prof. Michael Goodchild, Member of the National Academy of Sciences; Prof. John Shi Wenzhong, Director of SCRI and President of ISUI; Prof. Sun Dong, Secretary for Innovation, Technology and Industry, HKSAR Government; Prof. Jin-Guang Teng, PolyU President; Mr Tony Wong, Government Chief Information Officer; Prof. Christopher Chao, PolyU Vice President (Research and Innovation); Dr Otto Poon, Founder of the Otto Poon Charitable Foundation; and Prof. Chen Qingyan, Director of the PolyU Academy for Interdisciplinary Research.



■ Speaking at the Opening Ceremony, Prof. Sun Dong thanked PolyU for bringing together strong advocates for smart cities from around the world.

Under the leadership of Professor John Shi Wenzhong, Director of Otto Poon Charitable Foundation Smart Cities Research Institute (SCRI), Otto Poon Charitable Foundation Professor in Urban Informatics and Chair Professor of Geographical Information Science and Remote Sensing, the International Society for Urban Informatics (ISUI) and SCRI co-organised the Global Smart Cities Summit cum the 3rd International Conference on Urban Informatics (GSCS & ICUI 2023) in August with huge success.

The three-day conference held on the PolyU campus was joined by more than 500 experts, scholars, industry professionals, policy makers and investors from around the globe, who exchanged insights and frontier knowledge in smart cities and urban informatics through keynote speeches, forum discussions, and technology innovation exhibitions.

A total of 300 abstract submissions from 21 countries and regions were received.

The biennial GSCS & ICUI is among the unremitting efforts made by Professor Shi to promote urban informatics in academia and society over the years. As the founding President of ISUI and the founding Editor-in-Chief of the international journal Urban Informatics, Professor Shi has led ISUI and SCRI to jointly publish the new ISUI Smart City Index, the first index fully based on publicly available data to evaluate smart-city development.

A global pioneer in advocating urban informatics for the development of smart and sustainable cities, PolyU has set smart cities research as one of its strategic development areas, through SCRI established in 2020.

## Interdisciplinary efforts to drive Chinese medicine development

Traditional Chinese Medicine (TCM) is gaining ground, with its global market revenue growing at over 5% annually. In 2019, the World Health Organization started to prepare benchmarking documents for TCM training and practice. Locally, Hong Kong's first Chinese Medicine Hospital will be completed by 2025. The HKSAR Government's commitment to support the national blueprints for developing a healthy China and five Chinese Medicine (CM) Highlands in the Greater Bay Area will help institutionalise the TCM industry and elevate the discipline to a higher level.



### Interdisciplinary expertise to further CM research

CM has been one of the research foci of PolyU's Department of Applied Biology and Chemical Technology (ABCT) for more than two decades.

To address the growing needs for TCM research and applications, PolyU established the Research Centre for Chinese Medicine Innovation (RCMI) in 2021. Assembling 60 faculty members from eight departments, RCMI aims to conduct high impact research to provide scientific evidence to elucidate TCM theory for better understanding by the research and medical communities, and the public.



RCMI focuses on translational clinical research, which promotes preventive health and related treatments, the illustration of TCM theory and action mechanisms using modern tools, new drug development, and empirical evidence of TCM practices for its integration into primary care.



**Professor Wong Man-sau,**  
Director of RCMI and Professor of the Department of Food Science and Nutrition

The research centre has identified three directions:

- Metabolic syndrome (MetS) and liver disease - including re-development of classical and famous TCM formulae; study of TCM efficacy on diabetic retinopathy; and understanding of MetS and liver disease development, beneficial effects of CM in treatment as well as molecular mechanisms
- Women's health - including bone and muscle health, cardiovascular health, mood disorder and pain management, and translation of pre-clinical studies to clinical trials
- Integrative solutions for physical wellness - including recovery of physical and cognitive functions in stroke, efficacy and neurophysiology mechanisms of TCM treatment evaluation, Tai Chi, and online TCM-Based wellness programme

In its first year of operation, RCMI won HK\$9 million in grants and ten external projects, undertook 28 internally-funded projects, and contributed to seven affiliated publications. Its interdisciplinary pursuits can be exemplified by its collaborative research with the Research Institute for Smart Ageing on the use of TCM for disease prevention and health promotion for elders, involving scholars from the disciplines of biomedical engineering, rehabilitation science, and applied biology and chemical technology. The Centre has signed a collaborative agreement with Increasepharm (HK) to establish a joint laboratory focusing on osteoporosis, dementia, and ocular diseases. It has also signed an agreement with the Chinese YMCA of Hong Kong to build a clinical research platform for collaborative research and student and staff training.



# Game-changing discovery: POWER OF 3D PRINTING TO CREATE TITANIUM ALLOY

**T**itanium alloys are advanced lightweight materials indispensable for many critical applications. In a groundbreaking discovery, researchers from PolyU in collaboration with RMIT University and the University of Sydney have developed high-performance titanium alloy using 3D printing technology. The research was published in *Nature*, a leading international weekly journal of science first published in 1869. The research could help extend the applications of titanium alloys, foster sustainability and drive innovative materials technologies.

## Existing challenges

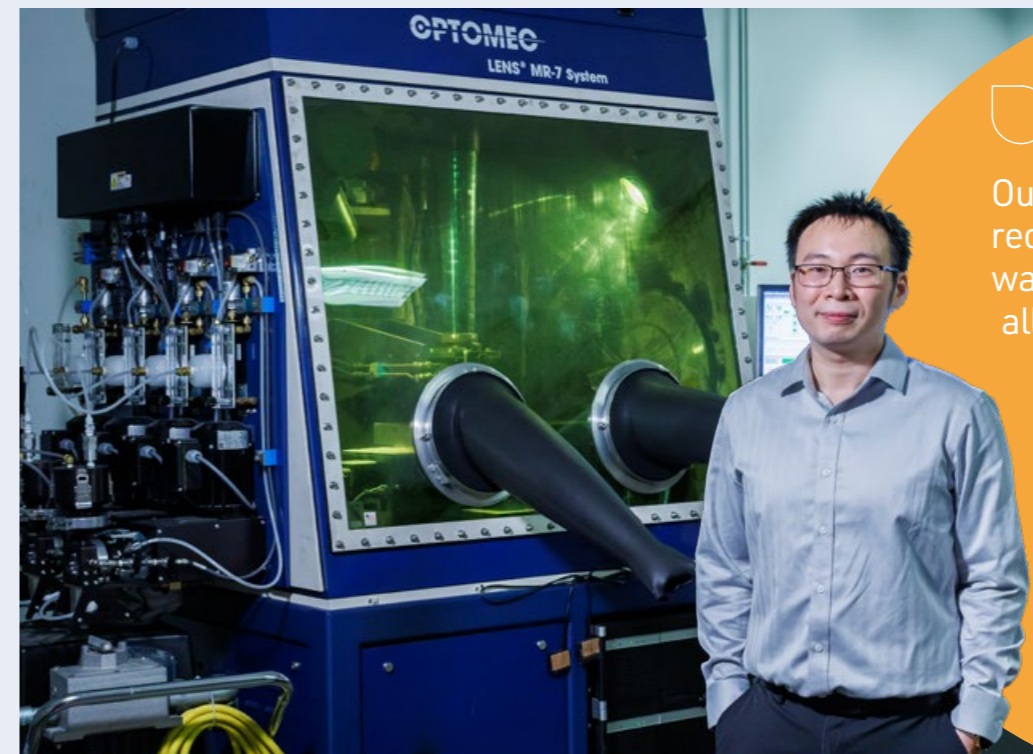
While traditional manufacturing methods, such as casting, can be used to produce titanium alloy, the poor properties of the resulting material may render it unsuitable for practical engineering.

Also, the energy-intensive Kroll process, typically used to produce titanium alloys, generates off-grade sponge titanium, which accounts for approximately 10% of all sponge titanium, resulting in substantial waste and increased production costs.

## Overcoming limitations

Instead, the research team has successfully used additive manufacturing, also known as 3D printing, to solve those long-standing issues in titanium alloy production. Through the use of 3D printing, the research team has produced a new strong, ductile, and sustainable titanium alloy ( $\alpha$ - $\beta$  Ti-O-Fe alloy). These properties are achieved by incorporating inexpensive and abundant oxygen and iron, the two most powerful stabilising elements and strengtheners for  $\alpha$ - $\beta$  phase titanium alloys.

■ Prof. Keith K.C. Chan (right), Chair Professor of Manufacturing Engineering at the Department of Industrial and Systems Engineering at PolyU, and Dr Zibin Chen (left), Assistant Professor in the same department, have discovered that additive manufacturing technology can create high performance metal alloys.



■ The team resorted to additive manufacturing for the production of titanium alloys.



Our work can facilitate the recycling of more than 10% of waste generated by the metal alloy production industry. This can significantly lower both material and energy costs for industries, and contribute to environmental sustainability and carbon footprint reduction.



Dr Zibin Chen

Additionally, it can be used to fabricate metal parts with unique structures and compositions, which cannot be achieved using traditional methods.

3D printing can also effectively address the challenges associated with quality and waste by enabling the recycling of off-grade sponge titanium, converting the waste into powder for use as raw material.

## Expanding applicability

The research team's discovery of the innovative use of additive manufacturing to produce titanium alloys and potentially other metal materials offers numerous advantages, such as reduced costs, improved performance, and sustainable waste management.

Compared with the Ti-6Al-4V benchmark material, which has been widely used since its formulation in 1954, the new titanium alloy produced by the research team demonstrates better mechanical performance, with comparable ductility and considerably higher strength.

The new titanium alloy has immense potential for diverse applications, in areas from aerospace, marine engineering, consumer electronics to biomedical devices, thanks to its enhanced strength, flexibility, and cost-effectiveness.

## PolyU's U3DP listed among global top university 3D printing labs 2022



The University Research Facility in 3D Printing (U3DP) has been named one of the Top University 3D Printing Labs of 2022 in the world by All3DP, a leading Munich-based magazine for digital makers.

Established in 2017, U3DP represents another major step taken by the University to enhance and promote the culture and environment within which research can thrive and excel. It is the first and only one of its kind among Hong Kong higher education institutions, the city's largest research centre in 3D printing in terms of range and quantity of facilities, and also houses the very first Makerbot Innovation Centre in the Asia Pacific region.

# Three PolyU researchers seize BOCHK Science and Technology Innovation Prize 2023



Three researchers from the University have been honoured with the Bank of China (Hong Kong) Limited (BOCHK) Science and Technology Innovation Prize 2023 (STIP) for their exceptional accomplishments in the fields of "Advanced Manufacturing" and "FinTech". A cash prize of HK\$2 million is awarded for each field.

The laureates strived to develop cutting-edge technologies and make groundbreaking discoveries that contribute to the betterment of the community, creating a lasting impact on the world.

Professor Jin-Guang Teng, President of PolyU, congratulated the laureates, saying that PolyU took pride in being home to such a distinguished group of scholars, "PolyU remains committed to supporting its researchers in their pursuit of research that not only benefits Hong Kong, but also the country and the world."

The STIP, established by the Hong Kong Alliance of Technology and Innovation and sponsored by the BOCHK, aims to facilitate the development of science and technology innovation in Hong Kong by rewarding outstanding individuals and groups who have made significant contributions to science and technology innovation in Hong Kong.

## Awarded field: Advanced Manufacturing



Professor Cheung's pioneering ultra-precision nano multi-ring machining technology has successfully been applied in the research and development of a novel and high-efficacy nano multi-ring defocus incorporated spectacle lens for myopia control, which has the potential to benefit myopic schoolchildren globally.

He has made outstanding contributions with his innovative research into new methods, processes and new equipment for ultra-precision machining, precision metrology and smart precision manufacturing.

### Professor Benny Cheung Chi-fai

Director, State Key Laboratory of Ultra-precision Machining Technology (The Hong Kong Polytechnic University)  
Chair Professor of Ultra-precision Machining and Metrology, Department of Industrial and Systems Engineering

## Awarded field: FinTech



Professor Au's groundbreaking research focuses on the design and analysis of cryptographic algorithms, which advances blockchain technology and spearheads the Web3 revolution, paving the way for secure, interoperable and scalable applications in decentralised protocols and applications. His inventions have been adopted by leading IT companies and blockchain platforms.

His team also won US\$550,000 at ZPRIZE 2023 for research on zero-knowledge cryptography.

### Professor Allen Au Man-ho

Professor, Department of Computing

## Awarded field: FinTech



Professor Luo's innovative work in cybersecurity has been instrumental in identifying and fixing security vulnerabilities and defending against cyber-attacks that pose significant risks to critical infrastructures, including blockchain systems, smart contracts, smartphones, IoT devices and automobiles.

His work has led to ten best/distinguished paper awards, including the ACM SIGSOFT Distinguished Paper Award at ISSA 2022 and Best Paper Award at INFOCOM 2018, as well as several awards from the industry.

### Professor Daniel Luo Xiapu

Professor, Department of Computing

Three PolyU scholars and 52 young scientists honoured by National Natural Science Foundation of China

PolyU has once again demonstrated its research excellence with an unprecedented number of accolades from the National Natural Science Foundation of China (NSFC) for the year 2023. Three research projects have been awarded under the NSFC's Key Programme with a total funding support of RMB 6.18 million. Eight research projects have been awarded under the General Programme, while two projects led by young scholars have been bestowed the Excellent Young Scientists Fund (Hong Kong and Macau) with a funding of RMB 2 million. Additionally, 50 researchers have been honoured with the Young Scientists Fund.



(left to right) Dr Huang Xinyan, Associate Professor of the Department of Building Environment and Energy Engineering; Prof. Wang Zuankai, Associate Vice President (Research and Innovation); Prof. Ding Xiaoli, Chair Professor of Geomatics, Department of Land Surveying and Geo-informatics; Prof. Xu Zhao, Professor of the Department of Electrical and Electronic Engineering; and Dr Kathy Leng Kai, Assistant Professor of the Department of Applied Physics

NFSC's Key Programme Awardees

Project coordinator	Project
<b>Professor Wang Zuankai</b> <ul style="list-style-type: none"><li>Associate Vice President (Research and Innovation)</li><li>Chair Professor of Nature-Inspired Engineering, Department of Mechanical Engineering</li><li>RGC Senoir Research Fellow</li></ul>	Flow boiling technology under extremely high-temperature environment: from fundamental mechanisms to vital materials
<b>Professor Ding Xiaoli</b> <ul style="list-style-type: none"><li>Chair Professor of Geomatics, Department of Land Surveying and Geo-informatics</li><li>Director, Research Institute for Land and Space</li></ul>	Detection of underground water pipe leakage based on multi-temporal PolInSAR technology
<b>Professor Xu Zhao</b> <ul style="list-style-type: none"><li>Professor, Department of Electrical and Electronic Engineering</li></ul>	Low-carbon smart operation of integrated energy system considering multi-energy flow trading mechanism, interaction model and decision-making algorithm under complex time-space coupling environment

Excellent Young Scientists Fund (Hong Kong and Macau) Awardees

Project coordinator	Project
<b>Dr Huang Xinyan</b> <ul style="list-style-type: none"><li>Associate Professor, Department of Building Environment and Energy Engineering</li></ul>	Smouldering wildfire
<b>Dr Kathy Leng Kai</b> <ul style="list-style-type: none"><li>Assistant Professor, Department of Applied Physics.</li></ul>	Molecularly thin 2D hybrid perovskite and innovative devices

PolyU young scientists have not only received individual awards but have also excelled as a collective. A total of 50 young researchers from various faculties and schools have been recognised with the Young Scientists Fund. Among these, 13 of the awarded projects were initiated by the Shenzhen Research Institute of PolyU. This recognition from the NSFC underscores PolyU's world-class research capabilities.

PolyU researchers receive Higher Education Outstanding Scientific Research Output Awards from Ministry of Education

Three research projects led by PolyU scholars have received the Higher Education Outstanding Scientific Research Output Awards (Science and Technology) 2022 from the Ministry of Education (MOE), with a First-Class and two Second-Class Awards in Natural Science, in recognition of their outstanding achievement.

Setting up by the MOE to recognise outstanding research projects at tertiary institutions nationwide, the awards are presented to individuals or units who have made remarkable contributions in science and technology advancement, translational research and talent cultivation. Congratulations to the awardees!

Higher Education Outstanding Scientific Research Output Awards (Science and Technology) 2022 awardees

Project coordinator:

**Professor Yang Tong**

- Chair Professor of Mathematical Science, Department of Applied Mathematics
- RGC Senior Research Fellow

Award:

First-Class Award in Natural Science

Project:

Mathematical Theory of Compressible Navier-Stokes Equations and Related Models

Collaborating universities:

South China University of Technology



Project coordinator:

**Professor Wang Tao**

- Chair Professor of Atmospheric Environment, Department of Civil and Environmental Engineering

Award:

Second-Class Award in Natural Science

Project:

Atmospheric Chemistry of Reactive Nitrogen Oxides and its Impacts on Regional Atmospheric Environment

Collaborating universities:

Shandong University, Nanjing University and the Chinese Research Academy of Environmental Sciences



Project coordinator:

**Professor Raymond Wong Wai-yeung**

- Dean of Faculty of Science
- Chair Professor of Chemical Technology, Department of Applied Biology and Chemical Technology
- Clarea Au Professor in Energy
- RGC Senior Research Fellow

Award:

Second-Class Award in Natural Science

Project:

Alkylthio Side-Chain Engineering of High-Performance Organic Photovoltaic Materials

Collaborating universities:

Soochow University, Institute of Chemistry, Chinese Academy of Sciences and Hong Kong Baptist University



## PolyU-Jinjiang Technology and Innovation Research Institute officially unveiled



■ Dr Lam Tai-fai, Council Chairman of PolyU (seventh from right) and Mr Lin Ruiliang, Vice Governor of Fujian Province (seventh from left) were among the officiating guests of the unveiling ceremony.

PolyU and the Jinjiang Municipal People's Government held a signing cum unveiling ceremony in September. The joint institute, officially inaugurated in Jinjiang, is the first research institute established by PolyU beyond the Greater Bay Area. This marks a significant achievement in promoting deeper cooperation between Fujian and Hong Kong, as well as a key step by both the University and the city towards creating a better future together.

The Research Institute aims to nurture outstanding engineers and high-quality innovative entrepreneurial talents who are technology application-oriented, and strives to become a technology innovation hub and attract a cluster of emerging industries helping to shape the future and foster global connections.

Scan the QR code to learn more about PolyU's latest partnerships with the Mainland:



## Joint research institute to be established in Shenzhen

PolyU joint hands with the Shenzhen Guangming District People's Government to set up the PolyU-Shenzhen Industrial Technology and Innovation Research Institute in Guangming, Shenzhen. The joint institute aimed at strengthening and facilitating the exchange of pedagogy, technology and talent between Hong Kong and Shenzhen.

The University envisions effective collaboration in industry, academia, and research, leveraging the advantages of PolyU's scientific talents and innovative research technologies, and attracting more high-quality Hong Kong enterprises and researchers to the region. The collaboration will involve PolyU faculty members, students and alumni engaging in scientific research, exchanging ideas and starting businesses in Shenzhen.



■ The MoU was signed by Prof. Christopher Chao, Vice President (Research and Innovation) of PolyU (front row, right) and Mr Yao Gaoke, Deputy District Mayor of Guangming District (front row, left).

## Research commercialisation with industry players in support of RAISE+ Scheme

In support of the Government's RAISE+ Scheme, PolyU joined forces with two renowned technology innovation investment companies, namely Shenwan Hongyuan Asset Management (Asia) Limited and Joincap Capital Limited to facilitate the commercialisation of the University's research outputs in the Guangdong-Hong Kong-Macao Greater Bay Area.

PolyU is the first institution in Hong Kong to establish partnerships with Shenwan and Joincap. The two companies plan to set aside a joint fund of HK\$150 million to invest in PolyU's research projects, to foster more industry-university-research collaborations, promote the development of downstream sectors, and enhance Hong Kong's capacities in innovation and technology as a whole.



■ Dr Miranda Lou, Executive Vice President of PolyU (front row, centre), Mr Victor Wang, Managing Director of Shenwan Hongyuan (front row, left), and Mr Avan Fung, licensed representative of Joincap Capital (front row, right) signed the MoU.

## Staunch support from HKATG to advance satellite technologies for navigation and communication



■ Attendees: Prof. Wing-tak Wong, Deputy President and Provost (third from left); Dr Daniel Yip, Non-executive Director, HKATG (third from right); Dr Miranda Lou, Executive Vice President (second from left); Dr Michael Hu, Vice President and Technology Strategy Director, HKATG (second from right); Prof. Christopher Chao, Vice President (Research and Innovation) (first from left); and Prof. Dong Cheng, Associate Vice President (Mainland Research Advancement) (first from right).

PolyU and the Hong Kong Aerospace Technology Group (HKATG) signed a Memorandum of Understanding to explore opportunities for collaboration in satellite navigation and communication, satellite remote sensing, payload development, and strengthening exchanges among industry, academia and research sectors.

Under this collaborative framework, and to promote the development of advanced concepts and technologies such as smart cities and urban air mobility, HKATG will provide PolyU with conventional

optical remote sensing and synthetic aperture radar observation data in Hong Kong and the Greater Bay Area. It will also provide low-Earth orbit satellite payload space, payload testing, and low-Earth orbit satellite measurement and control services for research and education purposes.

In addition, HKATG has generously donated to PolyU the naming rights of a multispectral optical remote sensing satellite, which is expected to launch in 2024. The total estimated value of this in-kind donation is HK\$20 million (including data and equipment).

# POLICY RECOMMENDATIONS for Societal Benefits

PolyU's research efforts serve the important goal of advising policymakers on various issues of public concern, with proposals made recently by the Jockey Club Design Institute for Social Innovation (J.C.DISI) and the Policy Research Centre for Innovation and Technology (PReCIT).



**PReCIT has made recommendations for the HKSAR Chief Executive's 2023 Policy Address in three crucial areas:**

## Carbon neutral cities

- Policy and legal studies on the promotion of hydrogen fuel cell vehicles
- Encouraging the development of the green economy and international carbon market
- Enhancing global and regional collaborations in building carbon neutral cities
- Promoting the green deck to publicise the concept of sustainable development
- Reducing the time for building energy audits and optimising ventilation systems
- Automatic food waste collection and dewatering system for sustainable waste management

## Belt and Road (BRI) development

- Establishing BRI I&T hub
- Establishing BRI government-industry-academia-research consortium
- Establishing BRI countries outstanding student grant and loan schemes to attract talents
- Establishing scholarships and research funding schemes to promote academic collaborations between Hong Kong and the BRI countries
- Promoting tourism and cultural exchange initiatives in the BRI countries
- Facilitating cross-border trade activities in the BRI

## Greater Bay Area I&T development

- Adopting PolyU Innovation and Technology Index as an indicator of Hong Kong's I&T development
- Building a university town in the Northern Metropolis to establish a seamless innovation ecosystem
- Establishing an international education hub to attract global talents to Hong Kong
- Building a central research platform for Chinese Medicine (CM) and an international dietary supplement research centre
- Establishing an international data centre and a supercomputing centre
- Optimising AI laws and regulations and promoting Legal Entity Identifier (LEI) applications exploration

■ Ir Prof. Christopher Chao, Vice President (Research and Innovation), is also the Director of PReCIT.



## Policy Paper on University-Industry Collaboration for Chinese Medicine Innovation in the GBA

Co-authored by PReCIT and PolyU's Research Centre for Chinese Medicine Innovation (RCMI) last September, the Policy Paper outlines recommendations for policymakers on capitalising on the opportunities arising from the dynamic consumer market and talent pool in the GBA with the aim of fostering the development and innovation in the traditional CM industry. Key recommendations are:

- Enhancing Hong Kong's CM Research and Development Ecosystem
- Promoting the Internationalisation of CM
- Commercialisation and Innovation of CM Health Maintenance Products
- Constructing a Bio-digital Product Innovation Hub

Professor Wing-tak Wong, PolyU Deputy President and Provost, said, "The Government is advised to provide financial support for the collaborative training programmes organised by tertiary institutions in the GBA and CM hospitals in Hong Kong and Mainland China so as to nurture skilled CM talents ready for the opportunities emerging from the development of the GBA."

## PReCIT launches inaugural PolyU Innovation and Technology Index

In August, PReCIT released for the first time the PolyU Innovation and Technology (I&T) Index, which compares the I&T strengths and challenges of Hong Kong with those of various regions in Greater China, as well as among four major bay areas in the world, with respect to five areas, namely R&D, startups, talent, industry, and impact.

It was found that the top three regions for I&T in Greater China are Guangdong, Jiangsu, and Beijing in that order, whereas Hong Kong ranks seventh. The I&T rankings of the four major bay areas are: first, San Francisco Bay Area; second, Tokyo Bay Area; third, Guangdong-Hong Kong-Macao Greater Bay Area (GBA); and fourth, New York Bay Area.

Recommendations for Hong Kong include increasing R&D expenditure, encouraging patent licensing, accelerating new industrialisation, embracing the digital economy, and accelerating GBS integration, among others.

## J.C.DISI's study reviewing HK's transitional housing programme

Meanwhile, J.C.DISI released interim findings on the Study on Effective Transitional Housing Delivery in Hong Kong in August, with multiple policy recommendations.

To relieve the pressure on those with urgent housing needs, the HKSAR Government plans to complete 84 transitional housing projects and provide over 21,000 housing units by 2024-25. The Study examined 35 projects located at open-air sites with newly constructed relocatable units using Modular Integrated Construction (MiC) technology, which account for about 86% of transitional housing units delivered under the programme.

After comparing Hong Kong's transitional housing programme with programmes in other cities using relocatable building structures, the Study concludes that Hong Kong's programme is the most unprecedented in terms of scale and development speed, while having the widest societal participation.

The Study supports the Government taking the role of

a builder in the Light Public Housing (LPH) programme to enhance the efficiency of delivery, and proposes to:

- Recognise the function and position of transitional housing
- Integrate transitional housing and LPH
- Standardise the design of MiC units
- Assist tenants to settle down in the Northern Metropolis
- Engage NGOs in community making in LPH development
- Advance planning on the re-use of MiC units

The University founded J.C.DISI in 2012 to facilitate proactive policy advocacy and social innovations through trans-disciplinary research. PReCIT was established in 2022 with the aim of becoming an influential voice on development strategy and related policies in the field of innovation and technology.

■ Supported by the Strategic Public Policy Research Funding Scheme, the research project is led by Prof. Ling Kar-kan, Director of J.C.DISI of PolyU (centre); Dr Raymond Tam, Teaching Fellow of the Department of Applied Social Sciences at PolyU (left) and Dr Calvin Luk, Project Manager (Spatial) of J.C.DISI of PolyU (right).



# AI-ASSISTED design of functional clothing enhances SCOLIOSIS TREATMENT

**S**afeguarding human health has been a key theme of PolyU's impactful research. An example of that is the groundbreaking solution invented by PolyU researchers to tackle scoliosis. Professor Joanne Yip Yiu-wan, Associate Dean and Professor of School of Fashion and Textiles, has always been keen to find ways to improve the treatment of scoliosis and enhance AIS patients' quality of life.

Traditionally, the most common treatment is a rigid brace worn for 18 to 23 hours daily until skeletal maturity (for two to three years). Patients, especially teenagers, are reluctant to wear braces, however, due to their discomfort and aesthetic reasons. Also, it is

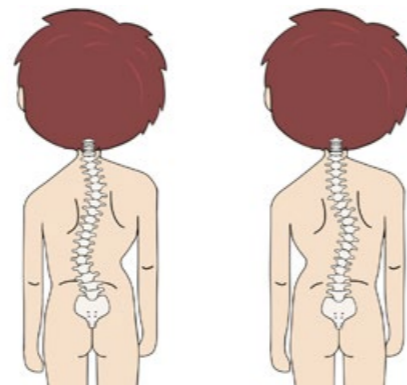
time-consuming and challenging to constantly modify the brace design for an optimum corrective effect.

## PolyU invention that meets societal need

Professor Yip's own experience caused her to look for an alternative solution. "My friend's daughter had scoliosis, but the brace was so uncomfortable that she refused to wear it. Eventually, she missed the best time for treatment and needed spinal surgery," she said. An idea was formed in her mind to design a product both comfortable and lightweight enabling individuals to receive the necessary support before it became too late.

### What is Adolescent Idiopathic Scoliosis (AIS)?

Adolescent Idiopathic Scoliosis (AIS) is the most common type of scoliosis, affecting about 2-3% of adolescents. Some patients may develop various complications with an impact on their physical, social and psychological well-being. Among the major complications are impaired cardiopulmonary function, chronic back pain, body image disturbance such as uneven shoulders, prominent ribs and asymmetric trunk.



■ The project led by Prof. Joanne Yip (fourth from left) was awarded a Gold Medal with Congratulations of the Jury at the 48th International Exhibition of Inventions Geneva.



Body-mapping tank top equipped with a biofeedback system, which can progressively provide muscle training to patients with spinal deformities so as to restore a balance in muscle activity and reduce the displacement of both sides of the spine.

Anisotropic textile brace for adolescents who have moderate scoliosis (Cobb's angle between 20° to 40°), which is more flexible, more comfortable, and lighter in weight allowing patients to enjoy a quality life.

Posture correction girdle for adolescents who have the early stages of scoliosis (Cobb's angle between 10° to 20°), which can enhance postural controlling and reduce the possibility of spinal curve progression in scoliosis.



With their best efforts, Professor Yip and her team successfully employed Artificial Intelligence (AI) to create a series of tailor-made functional clothing for treating AIS. Patient data has been used to train a decision tree and three neural networks to prescribe and configure the brace, which is then customised by professionals.

Through optimising the placement of padding, tightness of elastic straps, and configurable 3D structures, the innovative designs can reduce the spinal curvature of AIS patients and improve the functionality and comfort of the functional clothing. A replacement for the heavy and uncomfortable traditional brace is finally found.

## PolyU academic-led startup to make real impact

Professor Yip founded the startup Active Biotechnology (Hong Kong) Company Limited to commercialise the research outcome, benefitting mankind with innovative technology. To date, the company has launched a body mapping tank-top that provides tailored pain-free posture training for adolescents with early scoliosis.

The tank-top is also equipped with inertial measurement unit (IMU) sensors that are synchronised with pre-recorded surface electromyography (sEMG) signals. Designed with maximum wear comfort and accurately positioned IMUs, the tank-top can be worn for extended periods of time without negative effects on quality of life. The tank-top works alongside an application – available on smartphones and computers – that monitors body posture information in real time. The technology encourages scoliosis patients to take a more active role in improving their control and coordination of movement and daily posture, while reducing the future likelihood of bracing or surgical treatment.

## ActiveBiotech:

### Active Biotechnology (Hong Kong) Company Limited

The spin-off company of PolyU endeavours to develop posture training systems for medical, sports and healthcare applications. Its innovative and insightful technologies are intended to address the unmet needs of adolescents with mild scoliosis as well as provide alternative options for those who are undergoing bracing treatment without reducing their quality of life.

PolyU researchers shine in Falling Walls Science Breakthroughs of the Year 2023



**Dr Ma Cong**  
Associate Professor, Department of Applied Biology and Chemical Technology  
25 winners of the Falling Walls Science Breakthroughs of the Year 2023 in Science Start-ups

PolyU has once again demonstrated its excellence in scientific innovation, with two esteemed faculty members receiving recognition in the Falling Walls Science Breakthroughs of the Year 2023 competition. These awards highlight the University's commitment to leveraging cutting-edge research to address pressing global challenges.

YnnoMed Limited, a PolyU startup co-founded by Dr Ma Cong, Associate Professor of the Department of Applied Biology and Chemical Technology, is among the 25 winners in the Science Start-ups category of the Falling Walls Science Breakthroughs of the Year 2023. It is the only winner from Hong Kong to receive the global award in this category.

The PolyU spin-off has been honoured for its groundbreaking work in developing new antibiotic drug candidates. Leveraging AI-assisted technology developed in-house, YnnoMed focuses on discovering and developing first-in-class antimicrobial drugs to combat antibiotic-resistant bacterial infections. Their preclinical development platform boasts several promising antimicrobial medicines.

In another remarkable achievement, Dr Huang Bolong, Associate Professor of the Department of Applied Biology and Chemical Technology, has been selected as a finalist in the Engineering and Technology category. Dr Huang's groundbreaking



**Dr Huang Bolong**  
Associate Professor, Department of Applied Biology and Chemical Technology  
Finalist of the Falling Walls Science Breakthroughs of the Year 2023 in Engineering and Technology

research on nanocatalysts for broad carbon-strategic applications of sustainable energy earned him this esteemed recognition.

By combining theoretical calculations and machine learning techniques, Dr Huang is committed to creating novel catalysts for crucial chemical reactions in sustainable development. His research encompasses various areas, including water-splitting hydrogen generation, oxygen reduction and evolution for fuel cells and metal-air batteries, and carbon dioxide reduction for controlling carbon emissions.

PolyU continues to foster an environment that nurtures scientific entrepreneurship and breakthrough innovations. The recognition received by YnnoMed and Dr Huang not only reflects the caliber of research conducted at the University but also showcases PolyU's commitment to driving impactful solutions for the benefit of society and the environment.

The Falling Walls Science Breakthroughs of the Year competition is organised by the Falling Walls Foundation, a Berlin-based non-profit organisation. The foundation aims to promote breakthrough thinking. It is actively building a growing network of leaders in academia, business, and the public sector to tackle grand challenges and bring groundbreaking ideas to society.

\* Please refer to p.45 for another award received by Professor Wang Zuankai.

PolyU-nurtured startups recognised by Forbes Asia 100 To Watch 2023

Forbes Asia released its 100 to Watch list recently which spotlights small companies and startups on the rise across the Asia-Pacific region. Among 15 startups from Hong Kong, three PolyU-nurtured startups, namely Eieling Medical Limited, Fleming MedLab Limited, and Telefield Medical Imaging Limited have been listed.

For the selection of the 100 to Watch list, a total of

13 countries and regions are represented across 11 categories, including biotechnology and healthcare, e-commerce and retail, and finance. Forbes Asia editors evaluated each submission by various metrics, including a positive impact on the region or industry, a track record of strong revenue growth or ability to attract funding, promising business models or markets, and a persuasive story.

PolyU-nurtured startups



**Co-founder:** **Ir Professor Zheng Yongping**  
Henry G. Leong Professor in Biomedical Engineering  
Chair Professor of Biomedical Engineering  
Director of Research Institute for Smart Ageing  
Director of Jockey Club Smart Ageing Hub

**Category:** Biotechnology & Healthcare

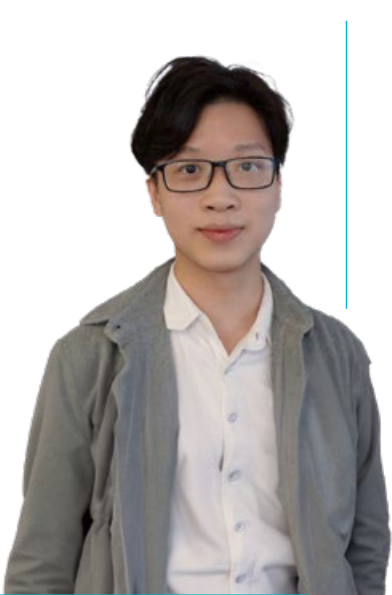
**Company profile:** **Eieling Technology** was founded in 2018, aiming to simplify liver health checkups with its portable, ultrasound imaging device called Liverscan®. Clinical trials are being conducted on the device in several major hospitals in Mainland China and Hong Kong, with a plan for local release this year, and a full-scale worldwide launch in 2026.  
Established in 2012, **Telefield Medical Imaging Limited** is a leading global provider of 3D ultrasound imaging technology, equipment and solutions. As the world's first and only ultrasound scoliosis assessment system and with more than 120 filed or granted patents, Scolioscan® is currently in use in hospitals and clinics in 13 countries and regions and has helped reduce harmful exposure to radiation for over 20,000 scoliosis patients worldwide.



**Co-founder:** **Dr Kelvin Heung Ho-lam**  
Research Assistant Professor  
Department of Building and Real Estate

**Category:** Biotechnology & Healthcare

**Company profile:** Founded in 2021, **Fleming MedLab** is an academic-led, biomedical robotics startup specialising in stroke rehabilitation and gait training. It focuses on developing a lightweight, wearable, and easy-to-use medical-grade rehabilitation robotic exoskeleton, which is designed to detect the movement intent of users and provide adaptive assistive force to empower joint movement.



## Driving translational vision research with Aier Eye Hospital Group



■ Prof. Wing-tak Wong, Chairman of the CEVR Board of Directors cum Deputy President and Provost of PolyU (left), and Ms Elaine Zhang, Global Strategy and Business Development Director of Aier (right).

PolyU's Centre for Eye and Vision Research (CEVR) and Aier Eye Hospital Group (Aier) signed a memorandum of understanding to promote the development of advanced eye and vision research. Synergising the strengths of both parties, CEVR and Aier will jointly promote development of advanced eye and vision research,

conduct collaborative research and commercialise the technology and research outputs. Also they will provide advice and support to start-ups, nurture research talents, and promote a common vision of disseminating cutting-edge research innovations to both the Mainland China and international eyecare markets.

### About CEVR

CEVR is a research collaboration between The Hong Kong Polytechnic University and the University of Waterloo in Canada under the InnoHK initiative of the HKSAR Government. It is the first global hub performing ground-breaking research in five key areas - myopia and eye growth, ocular drug discovery and delivery, vision enhancement, tear film and ocular surface and advanced optometric technology - with the mission to generate technologies to prevent vision loss in the ageing population and preserve healthy vision.

## Co-establishing the Centre of Research Excellence for Eye Care with Rohto



■ The Centre's launch ceremony was officiated by: from PolyU, President Prof. Jin-Guang Teng (fourth from left), Vice President (Research and Innovation) Prof. Christopher Chao (third from left), Associate Vice President (Research and Innovation) Prof. Wang Zuankai (second from left), and Director of the PolyU-Rohto Centre of Research Excellence for Eye Care and Chair Professor of Experimental Ophthalmology of School of Optometry, Prof. Mingguang He (first from left); and from Rohto, Mr Michael Sin, President of Mentholatum Asia Pacific (fourth from right), Mr Wesley CHAN, General Manager of Sales and Marketing, Mentholatum (China) Pharmaceutical Co., Ltd (third from right), Ms Teresa Wong, General Manager of Sales and Marketing of Mentholatum Hong Kong and Macau (second from right), and Mr Patrick Mok, General Manager (Production) of Mentholatum (China) Pharmaceuticals Co., Ltd (first from right).

PolyU has recently partnered with Rohto, an eye care brand under Mentholatum, to establish the PolyU-Rohto Centre of Research Excellence for Eye Care. The launching ceremony titled "Leading Research in Eye Fatigue, Empowering the Joy of Seeing" was held in October 2023. The Centre aims to provide comprehensive medical and care solutions for eye fatigue by gathering teams of ophthalmic experts to conduct research and testing in multiple locations and establish collaborative networks with various regions to develop eye health and care technologies.

Through collaboration with various sectors, the Centre is dedicated to creating a healthy environment for eye health, cultivating healthy eye habits, and mitigating the impact of visual fatigue on public eye health, thereby improving individuals' quality of life.

The occasion also saw the joint release of the "Promoting Healthy Vision and Prioritizing Standardised Diagnosis of Eye Fatigue" advocacy paper by PolyU and Rohto. Organised under the "Know-Diagnose-Explore-Engage" framework, the paper aims to promote public awareness of eye fatigue.

## PolyU-Accel Group Metaverse+ Joint Laboratory established



■ The Joint Lab was kicked off with a ceremony officiated by Ms Lillian Cheung, Under Secretary for Innovation, Technology and Industry (centre); Prof. Jin-Guang Teng, President of PolyU (fourth from left); Mr Ko Lai-hung, Chairman and CEO of Accel Group (fourth from right); Ms Iris Wong Ping-fan, Hong Kong delegate to the National People's Congress (third from left); Mr Chan Han-pan, LegCo Member (third from right); Dr Miranda Lou, Executive Vice President of PolyU (second from left); Mr Jamie Sze Wine-him, Honorary Advisor, Hong Kong Federation of Fujian Associations (second from right); Prof. Li Qing, Chair Professor of Data Science and Head of the Department of Computing of PolyU (first from left); and Mr Ho Chi-shing, Board of Directors, The Hong Kong Green Building Council (first from right).

The Accel Group Holdings Limited (Accel Group) joined hands with PolyU to establish the PolyU-Accel Group Metaverse+ Joint Laboratory (Joint Lab) in August, with a plan to donate HK\$10 million to the University in the next five years to support the Joint Lab's project development and operation.

The Joint Lab was founded to foster research and application of metaverse technology in various sectors, accelerate the ongoing development of Hong Kong as a green and smart city, strengthen industry-academia-

research collaboration, and cultivate professional talents. It will conduct research into the metaverse's role in enterprise cooperation, industrial applications, green and smart city initiatives, energy management, and sustainable supply chain systems.

Combining the knowledge and research capability of academia with the experience and resources of industry, this collaboration between PolyU and Accel Group will further strengthen cross-disciplinary cooperation and explore the potential and value of metaverse technology in industrial applications and environmental protection.

## Over 800 professionals trained in six years in "Belt and Road Advanced Professional Development Programme in Power and Energy"

To meet the growing demand for talents among the Belt and Road countries and regions, the "Belt and Road Advanced Professional Development Programme in Power and Energy" was co-organised by PolyU, Xi'an Jiaotong University (XJTU), the State Grid Corporation of China (SGCC) and The Hongkong Electric Company, Limited (HK Electric) for the sixth consecutive year. This cross-regional and multi-cultural university-industry collaboration programme is the first-of-its-kind in both Mainland China and Hong Kong, aiming to nurture senior executives and researchers through diversified, cross-regional, systematic and innovative training schemes.

A total of 32 participants from ten Belt and Road countries and regions joined this year's Programme, with 11 seminars and talks organised in 12 days. Participants also visited various high-end power facilities, including SGCC's training facilities in Jinan, the State Key Lab of Electrical Insulation and Power Equipment in Xi'an, and HK Electric's Lamma Power Station and cable tunnels in Hong Kong, to learn about cutting-edge technologies and modern management theories.

Since its inception in 2018, the Programme has attracted 811 industry professionals from 43 countries and regions to attend, providing more than 10,000 hours of exchanges, online and offline training, and field trips.

■ A total of 32 participants from ten Belt and Road countries and regions joined the Graduation Ceremony of the Programme.



## Professor Jin-Guang Teng re-appointed as PolyU President

The Council of PolyU is pleased to announce the re-appointment of Professor Jin-Guang Teng as President of the University for five years. Professor Teng's second term will commence on 1 July 2024, and continue until 30 June 2029. Since his appointment in 2019, PolyU has risen from the 106th to 65th place in the QS World University Rankings and from 171st to 87th in THE World University Rankings 2024, reaffirming its reputation as one of the world's leading universities.



I feel greatly honoured and humbled by this re-appointment and will continue to do my utmost to elevate the University to new heights in the years ahead. The strong support you have shown to me and my team over the years is also immensely appreciated, and I look forward to your continued support in the future.

Professor Jin-Guang Teng  
President



In addition to his dedication in nurturing students to become future professionals and leaders with a deep affection for their family and the Nation, as well as a global perspective, Prof. Teng is also committed to fostering interdisciplinary research and transforming research outcomes to meet societal needs. I believe PolyU will continue to excel and forge ahead as an innovative world-class university under the outstanding leadership of Prof. Teng.

Dr Lam Tai-fai  
Council Chairman



■ Prof. Teng's re-appointment was unanimously supported by the full Council.

## In celebration of the 74th anniversary of the founding of the People's Republic of China



On the occasion of the 74th anniversary of the founding of the People's Republic of China, PolyU held a flag-raising ceremony at the new University Square on campus. The event brought together Council and Court members, University senior management, over 1,000 distinguished guests and PolyU members, and close to 70 visiting teachers and students from Tsinghua University. The ceremony was performed by the PolyU Student Flag-Raising Team.

The ceremony was a symbolic gesture of unity and support for the Nation and Hong Kong, with attendees expressing their heartfelt wishes for national prosperity and stability. It demonstrated not only the University's dedication to providing holistic education to nurture socially responsible talents who possess a strong sense of national identity and a global perspective, but also its commitment to making further contributions to the Nation's self-reliance in science and technology.

■ Ms Wu Cheng, Deputy Director, Department of Educational, Scientific and Technological Affairs of the Liaison Office of the Central People's Government in the Hong Kong Special Administrative Region (HKSAR) (fourth from right) and Mr Wang Wenxian, Deputy Director, Office for Safeguarding National Security of the Central People's Government in the HKSAR (fourth from left) officiated the ceremony. They were joined by PolyU's Council Chairman Dr Lam Tai-fai (fifth from right); President Prof. Jin-Guang Teng (fifth from left); Deputy Council Chairman Dr Lawrence Li Kwok-chang (third from right); University Court Chairman Dr Katherine Ngan (third from left); President Emeritus Prof. the Honourable Poon Chung-kwong (second from right); Honorary Court Chairman Dr Roy Chung Chi-ping (second from left); Deputy President and Provost Prof. Wing-tak Wong (first from right); Executive Vice President Dr Miranda Lou (first from left), among others.

■ PolyU held a flag-raising ceremony to celebrate the 74th anniversary of the founding of the People's Republic of China. Over 1,000 distinguished guests, staff, students and alumni attended the ceremony. They were joined by close to 70 visiting teachers and students from Tsinghua University.



## Five distinguished individuals conferred **HONORARY DOCTORATES**



■ PolyU Council Chairman Dr Lam Tai-fai (first from left) and President Prof. Jing-Guang Teng (first from right) congratulate the Honorary Doctorate recipients The Hon Mrs Laura Cha Shih May-lung (third from right); Prof. Gong Qihuang (third from left); Mr Xiaojia Charles Li (second from left); Prof. Xu Ningsheng (second from right); and Prof. Zhong Nanshan, who joined the ceremony online.

PolyU held its 29th Congregation on campus in November 2023. Honorary Doctorates were conferred upon five distinguished individuals: The Hon Mrs Laura Cha Shih May-lung, GBM, GBS, JP; Professor Gong Qihuang; Mr Xiaojia Charles Li, SBS; Professor Xu Ningsheng and Professor Zhong Nanshan. The University also conferred academic awards on a total of 10,304 students this year, including 375 Doctor of Philosophy degree graduates, 120 professional doctoral degree graduates, 50 Master of Philosophy degree graduates, 5,153 taught master's degree graduates, 4,244 bachelor's degree graduates, 17 postgraduate diploma recipients, and 345 sub-degree award recipients.

### Honorary Doctorate recipients (in alphabetical order of last name)

#### The Hon Mrs Laura Cha Shih May-lung, GBM, GBS, JP

Doctor of Business Administration *honoris causa*

Mrs Cha is Chairman of Hong Kong Exchanges and Clearing Ltd and a member of the Hong Kong-United States Business Council. She is also an Independent Non-Executive Director of Ant Group Co. Ltd., a Senior International Advisor of Foundation Assets Management Sweden AB and a member of Sotheby's International Advisory Board. Besides, she is also Vice Chairman of the International Advisory Council of the China Securities Regulatory Commission, and a Director of the World Federation of Exchanges. She was the first, and to-date, the only person outside Mainland China to join the Central Government of the People's Republic of China at the vice-ministerial rank when she served as Vice Chairman of the China Securities Regulatory Commission from 2001 to 2004. She has made impactful contributions to the development of the financial services sector in both Hong Kong and Mainland China.



#### Professor Gong Qihuang

Doctor of Science *honoris causa*

Professor Gong is President of Peking University. He is also a distinguished optic expert who has long been engaged in cutting-edge research on nonlinear optics and spatiotemporal small-scale optics. Professor Gong was elected as a member of the Chinese Academy of Sciences and a member of the World Academy of Sciences. He was elected as a fellow of the Institute of Physics, United Kingdom, Optical Society of America, and International Society for Optics and Photonics. He has received awards such as the Second Prize of the National Natural Science Award, the First Prize of the Beijing Science and Technology Award and the First Prize of the Ministry of Education Science and Technology Progress Award. His research results have been selected three times as being among the "Top 10 Scientific and Technological Advances in Chinese Universities".



#### Mr Xiaojia Charles Li, SBS

Doctor of Business Administration *honoris causa*

Mr Li is the Founder and Chairman of Micro Connect and the Chairman of Micro Connect Macao Financial Assets Exchange. He was the Chief Executive Officer of the Hong Kong Exchanges and Clearing Limited (HKEX) from January 2010 to December 2020. Under his visionary leadership, HKEX accomplished many significant milestones in its history, notably the acquisition of the London Metal Exchange in 2012, the launch of the Shanghai-Hong Kong Stock Connect cross-border trading scheme in 2014, Shenzhen-Hong Kong Stock Connect in 2016, Bond Connect in 2017, and the Listing Reforms in 2018. These strategic initiatives were pivotal in strengthening Hong Kong's position as a prominent international financial hub and an initial public offering centre.



#### Professor Xu Ningsheng

Doctor of Science *honoris causa*

Professor Xu is an academician of the Chinese Academy of Sciences, having graduated from Sun Yat-sen University in 1982 and later received his PhD degree from the University of Aston. He was a professor at his alma mater, Sun Yat-sen University in 1996 and promoted to the position of President in 2010. In 2014, he moved to Fudan University, Shanghai, where he assumed the position of President until his retirement in 2021. An internationally renowned researcher, he has been involved in vacuum nanoelectronics for a long time and was the Director of the State Key Laboratory of Optoelectronic Materials and Technologies. He has received numerous awards including the esteemed Second-Class State Natural Science Awards.



#### Professor Zhong Nanshan

Doctor of Science *honoris causa*

Professor Zhong is an academician of the Chinese Academy of Engineering, having graduated from the Peking University Health Science Center in 1960 and went to the University of Edinburgh and the University of London for further studies and research. He is now a Professor of Internal Medicine at Guangzhou Medical University, Director of the Guangzhou Laboratory, Director of the National Clinical Research Center for Respiratory Diseases, Head of the Senior Expert Group of the National Health Commission, and a member of the World Health Organization's Technical Advisory Group on COVID-19 Preparedness and Response. He spearheaded the battle against the SARS outbreak in 2003 and the COVID-19 pandemic in 2019. He has received numerous prestigious awards, including The Medal of the Republic, the highest national honour, in 2020.





## Opening of University Square

PolyU's newest iconic landmark, the University Square, was officially opened on 10 November 2023.

Situated at the heart of the campus, the University Square is a lush green lawn that provides an engaging environment where students and staff can gather, collaborate, or unwind. It also plays a crucial role in fostering a sense of belonging and unity among all University members by infusing greenery and vitality into the campus.

To commemorate the opening of the University Square, an inauguration ceremony was held, officiated by Dr Lam Tai-fai, Council Chairman of PolyU, and Professor Jin-Guang Teng, President of PolyU. They unveiled a plaque symbolising the

University's commitment to providing an enriching, green and sustainable campus environment for the PolyU community. Dr Lam said, "We have built an oasis on campus for students to relax, meet friends, and hold activities which are all important in enriching school life."

This joyful occasion was witnessed by members of the PolyU Council, Court, and PolyU Foundation Governing Committee, as well as the University's management, staff, students, and alumni.

In the future, the University Square will serve as a significant venue, not only as a photo spot but also as a location for hosting events such as flag-raising ceremonies.

■ Dr Lam Tai-fai (left) and Professor Jin-Guang Teng officiated the Inauguration Ceremony of the University Square.



## Naming Global Student Hub after Mr Wong Man and Ms Tang Kit-wah



■ Mr King Wong (seventh from right) and Mr Tommy Wong (fifth from right) unveiled the plaque for the "Wong Man and Tang Kit Wah Global Student Hub", together with PolyU Council Chairman Dr Lam Tai-fai (eighth from left), PolyU President Prof. Jin-Guang Teng (seventh from left), and PolyU Foundation Chairman Dr Sunny Chai (sixth from left). They were accompanied by members of the Wong family and the PolyU senior management.

PolyU has recently renamed the Global Student Hub on the campus the "Wong Man and Tang Kit Wah Global Student Hub" to honour Mr King Wong and his family's recognition for and generous support to PolyU's education and research development. Mr King Wong and his younger brother Mr Tommy Wong officiated at the naming ceremony held on 11 October 2023.

Mr King Wong holds multiple professional qualifications including those of barrister, accountant and engineer. He has been a part-time lecturer at the Faculty of Construction and Environment since 2015 and was appointed an Adjunct Professor in 2023. Mr Tommy Wong is also a seasoned educator who has taught and guided many students over the years.

Having grown up under the influence and teachings of their parents, Mr King Wong and his five siblings strongly believe growing up in a loving and inclusive environment with good teachers and friends is beneficial for the all-round development of youngsters. He is very pleased to see that PolyU attaches great importance to whole-person education



■ Mr King Wong (left) and Mr Tommy Wong (right) received a memento from PolyU.

and is the first university in Hong Kong to include Service-Learning as a compulsory subject in the undergraduate curriculum, in addition to establishing the Research Centre for Chinese History and Culture to give students greater opportunities to learn about Chinese culture and wisdom.

He said that naming the Global Student Hub after his late parents not only commemorated their contributions to society and the family, but also allowed him and his family to support the advancement of higher education in Hong Kong.

■ Covering an area of more than 420 square meters and accommodating over 200 people, the "Wong Man and Tang Kit Wah Global Student Hub" is a popular hangout spot for the PolyU community and a venue for various cultural and social activities.



Classroom named after Dr Joseph Lee

PolyU has recently named a classroom after Dr Joseph Lee, President of Wofoo Foundation Limited, who shares a common vision with the University to educate for a better society. A naming ceremony was held on 20 October in appreciation of Dr Lee's generous support for the University's education and research development.

A seasoned entrepreneur, Dr Lee founded Wofoo Plastics Limited in 1980, and made significant contributions in the fields of social services, manufacturing, and trade. Since the early 1990s, he has increasingly devoted his time and efforts to serving society. Dr Lee pledged himself to foster a caring, inclusive, and respectful society and further the Wofoo vision of "Harmony brings a family prosperity. Cohesion makes a nation wealthy."

Dr Lee has also supported a number of studies on nurturing Hong Kong's young people, including two large-scale research projects led by PolyU's Associate Vice-President (Undergraduate Programme) Professor Daniel Shek.



From left: PolyU Council Chairman Dr Lam Tai-fai, Dr Joseph Lee, and PolyU President Prof. Jin-Guang Teng

PolyU scholar honoured for solving a 266-year-old scientific challenge

Professor Wang Zuankai, PolyU Associate Vice President (Research and Innovation) and Chair Professor of Nature-Inspired Engineering, has been honoured among the ten winners of the 2023 Falling Walls Science Breakthroughs of the Year award in the Engineering and Technology category.



Prof. Wang Zuankai is a winner of the 2023 Falling Walls Science Breakthroughs of the Year award in the Engineering and Technology category.

His innovation on structured thermal amour is recognised with the accolade of "Breaking the Wall to the Leidenfrost Effect".

When the temperature surpasses the Leidenfrost point, a continuous vapour layer forms between the solid and the liquid, leading to a reduction in heat transfer due to increased thermal resistance. Finding an efficient method for cooling hot surface has been a persistent challenge within thermal engineering and materials science.

This long-standing challenge first discovered in 1756 was fundamentally solved by Professor Wang's research "Inhibiting the Leidenfrost effect above 1,000°C for sustained thermal cooling", published in *Nature* in 2022. His breakthrough opens up many promising applications, especially in the highly efficient cooling of electronic devices, data centres, and nuclear power plants.

The annual award from the Berlin-based Falling Walls Foundation recognises the most impactful recent discoveries in science and society worldwide.

PolyU scholars honoured for contributions to the Nation's space missions

Professor Yung Kai-leung, Director of the University Research Centre for Deep Space Explorations (RCDSE); and Professor Wu Bo, Associate Director of RCDSE; have recently been honoured with the Outstanding Award (Individual) for China's Lunar Exploration Mission Chang'e-5 and the Outstanding Award (Individual) for China's First Mars Exploration Mission, respectively.

The accolades were presented by the Ministry of Industry and Information Technology, China National Space Administration and four other ministries to the two distinguished scholars in recognition of their contributions to the Nation's space exploration achievements.

PolyU President Professor Jin-Guang Teng congratulated the two professors and said the University will continue to push forward the frontiers of technology and science and contribute to other national space missions.

The PolyU team's contribution to the Chang'e-5 mission was also recognised with a group award.

PolyU is the only tertiary institution in Hong Kong to have gained international space exploration experience. For more than a decade, in support of the Nation's ambition to become a space powerhouse, PolyU has been contributing to various space missions including the Chang'e-3, -4 and -5 missions to the Moon and the Tianwen-1 mission to Mars. It lent its expertise to help identify landing sites and design and manufacture space instruments, including the Mars Landing Surveillance Camera and the Camera Pointing System besides the Surface Sampling and Packing System.



President Prof. Jin-Guang Teng (centre) congratulates Prof. Yung Kai-leung (left) and Prof. Wu Bo (right) on their national honours.

Award:	Outstanding Award (Individual) for China's Lunar Exploration Mission Chang'e-5	Award:	Outstanding Award (Individual) for China's First Mars Exploration Mission
Mission:	Chang'e-5, China's first lunar sample return mission in 2020	Mission:	Tianwen-1, China's first Mars probe to complete orbiting, landing and roving in one mission in 2021
Contribution:	Led a team to develop and manufacture the "Surface Sampling and Packing System", which automatically collected and packed lunar surface samples	Contribution:	Led a team to apply the advanced topographic mapping and geomorphological analysis technologies to identify safe and scientifically valuable landing sites on Mars in collaboration with national space institutions
			
Professor Yung Kai-leung		Professor Wu Bo	

## Two PolyU scholars honoured with RGC Awards

The Research Grants Council (RGC) has conferred the title "RGC Senior Research Fellow" on Professor Ni Meng, Associate Dean of the Faculty of Construction and Environment and Professor of the Department of Building and Real Estate, and the title "RGC Research Fellow" on Professor Li Buyang, Professor of the Department of Applied Mathematics under the Senior Research Fellow Scheme (SRFS) and the Research Fellow Scheme (RFS) 2023/24 respectively for their excellence in cross-disciplinary research.

The accolades to the two PolyU scholars come with research funding grants of around HK\$7.8 million for SRFS and HK\$5.2 million for RFS, as well as

relief from teaching and administrative duties for 60 months.

The achievements of the two researchers demonstrate PolyU's distinguished academic and research capabilities in interdisciplinary fields, in addition to the University's commitment to scientific research in addressing global societal needs.

The SRFS and RFS aim to provide sustained support to exceptionally outstanding researchers at the UGC-funded universities, with a view to facilitating their full dedication to research and development. Each scheme provides ten grants to scholars from any academic discipline.



**Professor Ni Meng**  
- RGC Senior Research Fellow 2023/24

Professor Ni's research interests cover areas including fuel cells, rechargeable metal-air batteries, electrochemical water-splitting, and electrochemical systems for low-grade waste heat utilisation. He serves as a reviewer for more than 80 academic journals including *Science*, *Nature Energy*, *Nature Communications*, *Joule*, and *Advanced Materials*.

His research project titled "Protonic ceramic fuel cells for clean power generation: From new cathode materials to new stack designs" is backed by SRFS.



**Professor Li Buyang**  
- RGC Research Fellow 2023/24

Professor Li's research endeavours in applied, numerical and computational mathematics have led to the discovery of solutions to a wide variety of mathematics questions. His contributions to the field of mathematics have also earned him the Hong Kong Mathematical Society Young Scholars Award 2022.

He receives support from RFS for his research project "Challenges, numerical analysis and new computational methods for curvature-driven surface evolutions and related problems".

## Young PolyU scientist lauded in MIT Technology Review Innovators Under 35 award

Dr Kathy Leng Kai, Assistant Professor from the Department of Applied Physics, has been honoured as one of the "Innovators Under 35" (TR35) in the Asia Pacific region in 2023 by the Massachusetts Institute of Technology Review. This prestigious recognition highlights Dr Leng's remarkable accomplishments in science and technology innovation.

As a materials scientist, Dr Leng is the first researcher to observe the atomic structure of molecularly thin hybrid perovskites and establish a correlation with their optoelectronic properties. Additionally, she has successfully developed the first monolayer perovskite photodetector that converts light to electricity with high efficiency. This groundbreaking achievement will significantly advance the field of flexible optoelectronics and fundamental physics in the future.

Expressing her gratitude, Dr Leng extended her appreciation to her peers and senior colleagues for their support, "Being part of this collaborative research network gives me much inspiration and encouragement."



■ Dr Kathy Leng Kai (centre) received the MIT TR35 award in the Asia Pacific region in 2023.

Recognition through impactful publications, grants, and conference presentations inspires me to work harder."

Due to her expertise in a niche research area, Dr Leng has received various accolades, including the Excellent Young Scientist Fund (Hong Kong and Macau) from the National Natural Science Foundation of China in 2023, and the Young Innovative Researcher Award 2023 from PolyU.

## Six outstanding young researchers presented with YIRA 2023

An award presentation ceremony was held in October to applaud the exceptional efforts and passion for scientific research demonstrated by the six PolyU Young Innovative Researcher Award (YIRA) 2023 recipients.

The YIRA 2023 winners are (photo below):

- Dr Cai Songhua, Assistant Professor, Department of Applied Physics (second from right)
- Dr Kelvin Heung Ho-lam, Research Assistant Professor, Department of Building and Real Estate (second from left)
- Dr Kathy Leng Kai, Assistant Professor, Department of Applied Physics (third from left)
- Dr Ma Yuen, Assistant Professor, Department of Mechanical Engineering (first from right)
- Dr Zhang Shuowen, Assistant Professor, Department of Electrical and Electronic Engineering (first from left)
- Ir Dr Zheng Pai, Assistant Professor, Department of Industrial and Systems Engineering (third from right)

Professor Jin-Guang Teng, President of PolyU, commended the awardees' achievements and said, "The YIRA underscores PolyU's commitment to innovation, excellence and impact in our research endeavours for the benefit of society. Our young researchers' work illustrates their immense potential."

■ President Professor Jin-Guang Teng (centre), Vice President (Research and Innovation) Prof. Christopher Chao (fourth from left), and Director of Research and Innovation Prof. Christina Wong (fourth from right) congratulate the YIRA 2023 winners.



Senior staff appointments and promotions  
(between 1 July and 30 September 2023)

Congratulations to the following PolyU members who have recently taken up a new capacity at the University (Listed in alphabetical order):

Appointments



**Ir Professor Chan Ching-chuen**  
as Distinguished Chair Professor of Electric Vehicles and Smart Energy  
Department of Electrical and Electronic Engineering  
on 5 Sept 2023



**Dr Laura Lo Shuen**  
as Associate Vice President (Institutional Advancement) and Director of Institutional Advancement  
Office of Institutional Advancement  
on 19 Sept 2023



**Professor Chung Chi-yung**  
as Head  
Department of Electrical and Electronic Engineering  
on 1 Jul 2023



**Professor Siok Wai-ting**  
As Head and Professor  
Department of Chinese and Bilingual Studies  
on 1 Aug 2023



**Professor Ahmed Youssef Elghazouli**  
as Chair Professor of Earthquake Engineering and Structural Integrity  
Department of Civil and Environmental Engineering  
on 3 Jul 2023



**Professor Zhang Dan**  
as Chair Professor of Intelligent Robotics and Automation  
Department of Mechanical Engineering  
on 3 Jul 2023



**Professor Simon Lee Ming-yuen**  
as Chair Professor of Biomedical Sciences  
Department of Food Science and Nutrition  
on 1 Aug 2023

Promotions



**Professor Cai Jing**  
as Associate Dean  
Faculty of Health and Social Sciences  
on 21 Jul 2023



**Professor Sylvia Chen Xiaohua**  
as Chair Professor of Social and Cultural Psychology  
Department of Applied Social Sciences  
on 1 Jul 2023



**Professor Cao Jiannong**  
as Director  
University Research Facility in Big Data Analytics  
on 1 Jul 2023



**Professor Fu Xiaowen**  
as Head  
Department of Industrial and Systems Engineering  
on 1 Jul 2023



**Ir Professor Keith Chan Kang-cheung**  
as Associate Dean (External Engagement)  
Faculty of Engineering  
on 1 Jul 2023



**Professor Kee Chea-su**  
as Head  
School of Optometry  
on 1 Jul 2023



**Professor Edward Chan Ko-ling**  
as Chair Professor of Child and Family Welfare  
Department of Applied Social Sciences  
on 1 Jul 2023



**Professor Marco Pang Yiu-chung**  
as Chair Professor of Neurorehabilitation  
Department of Rehabilitation Sciences  
on 1 Jul 2023

## Major external appointments and awards of PolyU members

From July to September 2023, the following PolyU members were either appointed significant duties to share their scholarly expertise to benefit the wider community or had their academic efforts duly recognised. (Listed in alphabetical order)



### Dr Anthony Kong

Assistant Professor, School of Design

#### Appointment

- Fellow, Royal Society of Arts



### Dr Lam On

Associate Director and Teaching Fellow,  
Chinese Language Centre

#### Appointment

- Chief Examiner, Chinese Language Paper 2, Hong Kong Diploma of Secondary Education Examination, Hong Kong Examinations and Assessment Authority



### Professor Kun-pyo Lee

Swire Chair Professor of Design  
Alex Wong Siu Wah Gigi Wong Fook Chi  
Professor in Product Design Engineering  
Dean, School of Design

#### Appointment

- Co-chair, Jury Committee for Seoul Design Award 2023



### Dr Liu Xintao

Associate Professor  
Department of Land Surveying and  
Geo-Informatics

#### Appointment

- Chair, Commission on Geospatial Analysis and Modeling of International Cartographic Association



### Dr Justina Liu Yat-wa

Associate Professor, School of Nursing

#### Award

- The 2nd Smart Ageing Awards 2022 Social & Community Engagement Silver Award, Golden Age Foundation



### Dr Ben Ma Tsang-wing

Assistant Professor,  
Department of Chinese History and  
Culture

#### Appointment

- Young Researcher in Oriental Studies, The Research Institute for Oriental Cultures, Gakushuin University, Japan



### Dr Sivaganesh Selvaraj

Research Assistant Professor,  
Department of Civil and Environmental  
Engineering

#### Appointment

- Task Group Member, Thin-Walled Structures in Structural Stability Research Council, c/o American Institute of Steel Construction

#### Award

- Yoon Duk Kim - Young Researcher Award from Structural Stability Research Council, c/o American Institute of Steel Construction



### Professor Daniel T. L. Shek

Associate Vice President (Undergraduate Programme)  
Dean, Undergraduate Studies  
Chair Professor, Department of Applied Social Sciences  
Li & Fung Endowed Professorship in Service Leadership Education

#### Appointment

- Chairman, Assessment Panel of the Public Policy Research Funding Scheme and Strategic Public Policy Research Funding Scheme, HKSAR Government



### Dr Shih Yi-teng

Assistant Professor, School of Design

#### Award

- Red Dot Design Award 2023



### Professor Stephen Wang

Director, Research Centre of Future Caring Mobility  
Professor, School of Design

#### Appointment

- Fellow, Royal Society of Arts



### Professor William S. Y. Wang

Chair Professor of Language and Cognitive Sciences,  
Department of Chinese and Bilingual Studies

#### Award

- Honorary Professorship, Macau University of Science and Technology



### Dr Peggy Woh Pei-yee

Research Assistant Professor,  
Department of Food Science and Nutrition

#### Award

- US-ASEAN Science, Technology, and Innovation Cooperation Seed Grant 2023



### Professor Frances Wong

Associate Dean and Chair Professor of Advanced Nursing Practice,  
Faculty of Health and Social Sciences

#### Appointment

- Honorary Member, Clinical Ethics Committee, Hospital Authority



### Dr Wu Maochun

Assistant Professor,  
Department of Mechanical Engineering

#### Award

- Fellow, International Association of Advanced Materials



### Dr Xu Yang

Associate Professor,  
Department of Land Surveying and Geo-Informatics

#### Award

- 2023 China Geographic Information Science and Technology Progress Award - 1st Class Award



### Professor Yip Shea-ping

Head and Chair Professor of Diagnostic Science and Molecular Genetics,  
Department of Health Technology and Informatics  
Associate Director, Research Centre for SHARP Vision

#### Appointment

- Non-official Director, Board of Directors, Hong Kong Genome Institute Board, The Hong Kong Genome Institute
- Non-official member, Research Fellowship Assessment Panel, Health and Medical Research Fund Research Fellowship Scheme, Research Council, Health Bureau, HKSAR Government



### Dr David Yuen Chun-wah

Teaching Fellow,  
Chinese Language Centre

#### Appointment

- Technical Advisor of the Employees Retraining Board

\* Please refer to the stories on p.11, 16, 19, 25, 27, 28, 35, 45, 46, 47, and 48 for further information on the accolades received by other PolyU staff members.

# UNITING ALUMNI ACROSS BORDERS

To foster strong connections with over 477,000 graduates worldwide, PolyU has established several alumni networks in the Mainland and overseas, and the most recent addition was the PolyU Sichuan Alumni Network.

## PolyU Sichuan Alumni Network Established



In September 2023, PolyU's management joined hands with representatives from eight Mainland alumni networks and alumni from Sichuan, who gathered in Chengdu to witness the official establishment of the PolyU Sichuan Alumni Network.

Dr Miranda Lou, Executive Vice President of PolyU; Ir Professor Edwin Cheng, Dean of the Faculty of Business; Professor Lu Haitian, Director of Mainland Development; and Dr Sean Xu, Assistant Director of Mainland Development, attended the establishment ceremony. Over 120 enthusiastic PolyU Sichuan alumni were present to witness this memorable occasion.

The inaugural general meeting and a celebratory dinner were also held on that day. During the dinner, Dr Lou delivered a speech highlighting the latest developments of the University. She emphasised that



■ Dr Miranda Lou, Executive Vice President of PolyU (left) and Mr Luo Quan, the President of PolyU Sichuan Alumni Network, officiated at the establishment ceremony of the Network.

the University is actively pursuing the establishment of research institutes and aims to leverage the support of its alumni networks to transfer research outcomes into applications for the betterment of society.



The alumni networks play a crucial role in bringing together PolyU graduates from different regions and contribute to the development of alumni activities in the Mainland and globally. The newly established PolyU Sichuan Alumni network facilitates cooperation between institutes and enterprises, provides

investment and entrepreneurship information, and offers alumni opportunities for technology transfer.

Sichuan-based alumni are welcome to join the Network and contribute to the development and advancement of their alma mater. Join now:



## The President meeting alumni in Australia



During a recent trip to Australia, Professor Jin-Guang Teng, President of PolyU, and Professor Christopher Chao, Vice President (Research and Innovation) of the University, attended two alumni dinner gatherings in Sydney and Melbourne hosted by the PolyU (Australia) Association in September 2023. The events brought together over 150 guests, including alumni and former staff residing in Australia.

During the dinners, President Teng shared PolyU's latest achievements and developments, highlighting its groundbreaking research, innovative education programmes, and unwavering commitment to fostering global collaborations. The alumni were enthusiastic to learn about the milestones of their alma mater. They were delighted to have the opportunity to meet and exchange their thoughts with President Teng and Professor Chao.

A notable highlight of the gathering in Sydney was the presence of Ms Trista Lim, Director of the Hong

Kong Economic and Trade Office, Sydney. Memorable souvenirs were presented to President Teng and Professor Chao, including artistic photographs by alumnus Mr Alex Ma.

President Teng expressed heartfelt gratitude to the Association, particularly acknowledging Dr Karen Tam, President of the Association, and Executive Committee members. He commended their endeavours in connecting PolyU members in Australia, stating, "These were truly fulfilling gatherings. I deeply sensed our alumni's strong love of their alma mater."

Alumni who have graduated from PolyU, current students, or current or former teaching staff, are welcome to join the relevant networks based on their current location or the programmes they have studied in, to stay connected with their alma mater, former friends and colleagues in PolyU. You may learn more about PolyU's alumni networks here:



# POLYU STUDENTS AND ALUMNI BAG FOUR MEDALS AT ASIAN GAMES

At the 19th Asian Games Hangzhou held from 23 September to 8 October 2023, 72 students and alumni from PolyU competed for Hong Kong and achieved great success, triumphed with one silver and three bronze medals in the fencing, rowing, and swimming events.

The PolyU athletes participated in twenty sports events, including athletics, basketball, cycling, handball, karate, and water polo. After fierce competitions, Tam Hoi-lam, a Master's student at PolyU, won two bronze medals in the swimming relay events. Cheung Hoi-lam and Sophia Wu, undergraduate students at PolyU, captured a silver

medal in pair rowing and a bronze medal in foil fencing, respectively.

Overall, students and alumni from seven local universities bagged two golds, eight silvers and 22 bronzes in the Asian Games Hangzhou.

The University has long been supportive of whole-person education and sports development of students. By providing flexible admission routes to student-athletes, they can pursue both sports and academic goals. For details about the scholarships PolyU offers to student-athletes, please scan the QR code:



## Students and alumni from PolyU competed in the Asian Games



Football team



Basketball team



Swimming team



Water polo team



Fencing

**Sophia Wu**  
BBA (Hons) in  
Marketing

**Bronze Medal in the  
Women's Foil Fencing  
Team**



Rowing

**Cheung Hoi-lam**  
BBA (Hons) in Marketing

**Silver Medal in the  
Women's Pair Rowing**



Swimming

**Tam Hoi-lam**  
Master in  
Physiotherapy

**Bronze Medals in the  
Women's 4x100m  
Freestyle Relay and  
4x100m Medley Relay**

## PolyU experts provided rehabilitation services to national athletes

A team led by Professor Amy Fu, Peter Hung Professor in Pain Management, Associate Head and Professor of the Department of Rehabilitation Sciences, provided rehabilitation services to the national team in preparation for the Asian Games Hangzhou, as well as the Paris Olympics in 2024. The team was responsible for formulating research plans on sports recovery and exploring strategies to address fatigue and overload strain caused by exercise.

Additionally, PolyU signed an agreement with the Center for Weight Lifting, Wrestling and Judo of the General Administration of Sport of China (the Center) to collaborate on the "Rehabilitation strategies in preparation for the Paris 2024 Olympics" project. In this collaboration, PolyU will provide rehabilitation services to the Center, and the Center will assist in conducting applied research that focuses on improving athletes' performance and preventing injuries.

Celebrating together at the International Cultural Festival



■ PolyU management and distinguished guests from the Consulates General kicked off the International Cultural Festival.

The inaugural International Cultural Festival at PolyU proved to be an extraordinary triumph, leaving an indelible mark on the University community. Spanning 11 captivating days in October, this vibrant celebration embraced the richness of diverse cultures through a myriad of captivating activities.

From tantalising food appreciation sessions to immersive cultural workshops, booth exhibitions, and mesmerising live performances, the festival was a kaleidoscope of experiences. Traditional dances

enthralled the audience, while film screenings and craft demonstrations transported attendees to far-flung corners of the globe.

The festival attracted an impressive turnout of over 6,000 individuals, including 40 esteemed guests from the Consulates-General, with no less than 10 Consuls General. Undoubtedly, this cultural extravaganza left an indelible impact, forging cherished memories that will be treasured for years to come.



Ten students awarded scholarships supported by SHKP-Kwoks' Foundation

Ten undergraduate and postgraduate students from the Department of Building Environment and Energy Engineering, the Department of Building and Real Estate, and the Department of Civil and Environmental Engineering have each been awarded a scholarship of up to HK\$40,000 under the Building Homes with Heart Scholarship Programme jointly launched by the SHKP-Kwoks' Foundation and PolyU.

The scholarship programme provides support to exceptional PolyU students, particularly those facing financial challenges, in their pursuit of studies in construction, real estate or engineering-related disciplines.

At the award presentation ceremony, Vice President (Student and Global Affairs) Professor Ben Young said: "PolyU is delighted to collaborate with Sun Hung Kai

Properties to nurture a new generation of talent for the construction industry and promote the advancement of new green technologies, helping Hong Kong become carbon neutral and creating a sustainable future."



■ An award ceremony was held with representatives from Sun Hung Kai Properties (SHKP) including Foundation Director Mr Thomas Kwok (front, third left), Executive Director Mr Adam Kwok (front, second right), and Executive Director Mr Robert Chan (front, first left) joined by PolyU Vice President (Student and Global Affairs) Prof. Ben Young (front, third right), Dean of Faculty of Construction and Environment Prof. Li Xiangdong (front, second left), and Dean of Students Prof. Albert Chan (front, first right).

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**Excel x Impact** is published quarterly to keep the local and international communities informed of PolyU's activities, people and achievements. For contributions and enquiries, please contact the Communications and Public Affairs Office at paadmin@polyu.edu.hk.

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