

# ACADEMIC AND RESEARCH EXCELLENCE FOR IMPACT



THE FIAND ENANGENT

# OUR ΜΟΤΤΟ

#### TO LEARN AND TO APPLY, FOR THE BENEFIT **OF MANKIND**

The Hong Kong Polytechnic University (PolyU) strives to be an innovative world-class university that pursues excellence in education, research, and knowledge transfer for the benefit of Hong Kong, the Nation, and the world. The University nurtures socially responsible professionals and leaders with a strong sense of national identity and a global perspective, and pursues world-leading research and innovation for societal benefits. A robust culture of knowledge transfer and entrepreneurship is a cornerstone of the University, ensuring PolyU's technologies are transformed into practical real-world applications. The University's unwavering commitment to excellence has earned it international recognition, with PolyU consistently ranking among the top 100 universities worldwide. Based on this solid foundation, the University will continue to make positive contributions to society to foster a brighter future, living up to its motto, "To learn and to apply, for the benefit of mankind".

**GLOBAL RANKINGS** 



**QS World University Rankings** 2024



QS Asia

th



**THE World University Rankings** 2024

University Rankings 2024

THE Asia University Rankings 2024

THE Young University Rankings 2023 th

THE World's Most International Universities 2024

**PolyU's relentless pursuit** of excellence in education and research has earned us a spot among the top 100 universities worldwide.

# A LEGACY OF MAKING A **DIFFERENCE IN** SOCIETY

PolyU has come a long way since its inception in 1937. From its beginnings as a post-secondary technical school to becoming a full-fledged university in 1994, PolyU and its predecessors have played a crucial role in the social and economic development of our society. With a global alumni network of over 477,000 graduates, the University has fostered numerous distinguished leaders spanning various professions, industries, businesses, and communities, who have made a positive impact on the world.

Today, PolyU's relentless pursuit of excellence in education and research has earned us a spot among the top 100 universities worldwide. Over the years, the University has also made remarkable breakthroughs, including developing innovations to support our country's historic space missions, such as the Nation's first lunar sample return mission, Chang'e-5, and first Mars exploration mission, Tianwen-1. w

As PolyU's Council Chairman and a proud alumnus, I have had the privilege of witnessing our remarkable progress. This journey has been made possible by the support of the local and central governments as well as our dedicated council members, management team, staff, scholars, alumni, students, partners, and friends, and I am grateful for their steadfast contributions.

Moving forward, PolyU remains committed to growing alongside Hong Kong and playing a pivotal role in the scientific and technological development of the Greater Bay Area, the Nation and beyond, adhering to its motto, "To learn and to apply, for the benefit of mankind." With an unwavering focus on the betterment of society, we will continue to nurture leading talent and drive innovation to foster a brighter future.

Dr Lam Tai-fai, GBS, JP Chairman of Council

#### PRESIDENT'S MESSAGE

## ACADEMIC **EXCELLENCE FOR** SOCIETAL IMPACT

For over eight decades, PolyU has strived to live up to our motto, "To learn and to apply, for the benefit of mankind." This guiding principle is reflected in our holistic education, which nurtures students to become successful professionals and leaders with a deep affection for their family and nation, a global perspective, and a strong sense of social responsibility.

It is also reflected in the passion of our scholars and scientists to address society's most pressing challenges through impactful research and embracing a strong culture of knowledge transfer and entrepreneurship. By translating their research breakthroughs into practical solutions for industries, businesses, and communities, they enhance the sustainability and prosperity of our world.

In addition, as a university with a reputation for excellence in Engineering and Technology, as well as our unique disciplines among the eight publicly funded universities in Hong Kong, such as Design, Fashion and Textiles, Hotel and Tourism Management, Rehabilitation Sciences, and Optometry, we are well-positioned to continue driving innovation and contributing to the development of Hong Kong as an international innovation and technology centre in the Greater Bay Area, as well as the socio-economic advancement of our country and the global community.

I am confident that with the continued backing of the Nation, the Hong Kong Government, our benevolent donors, esteemed alumni, industry collaborators, academic partners, and numerous other stakeholders across various sectors, we will continue to elevate our position as an innovative world-class university that directly meets evolving societal needs.

**Professor Jin-Guang Teng** President

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We will continue to elevate our position as an innovative world-class university that directly meets evolving societal needs.



#### A PROUD HISTORY, A PROMISING FUTURE

PolyU is fundamentally linked with the development of Hong Kong. Over the years, the University has played an important role in the different stages of social and economic development of our community, helping to propel progress in Hong Kong, the Nation and the world.





#### 1947 HONG KONG **TECHNICAL COLLEGE**

Renamed the Hong Kong Technical College after World War II, the institution offered both full- and part-time courses to meet the soaring demand for trained technicians and professionals. The year 1957 saw the opening of new premises in Hung Hom, signifying the beginning of a new chapter in industrial education in Hong Kong.



PolyU has its origin in the development of local technical education in the years preceding World War II. The Government Trade School, the University's first predecessor, opened on Wood Road in Wanchai in 1937 and was the first publicly funded post-secondary technical institution in Hong Kong. Around 70 students filled classes run by three departments offering courses in marine wireless operating, mechanical engineering and building construction.









The Polytechnic gained approval from the University and Polytechnic Grants Committee for the self-accreditation of degree programmes. On 25 November 1994, the institution assumed full university status, with its name changed to The Hong Kong Polytechnic University and the University's new logo was formally introduced.

#### POLYU TODAY

PolyU is ranked among the world's top 100 universities today, inspiring all its members to excel in their aspirations, living up to the University's motto: "To learn and to apply, for the benefit of mankind". With an aspiration to drive positive impact and a heart to serve, PolyU continues to stay at the forefront of education and research, further pushing the boundaries of knowledge and innovation.

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The Hong Kong Polytechnic was formally established, with a mandate to provide professional education to meet the community's workforce needs. Early Polytechnic courses covered engineering, commerce, management, mathematics, science, nautical studies and textiles.

The campus underwent several phases of development to accommodate the ever-expanding number of academic programmes and student population, and the iconic "red brick castle" architecture began to take shape in 1976.





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#### **FACULTIES/SCHOOLS**





- Department of Logistics and • Maritime Studies
- Department of Management and Marketing
- School of Accounting and Finance

FACULTY OF CONSTRUCTION AND ENVIRONMENT 建設及環境學院



- Department of Building Environment and Energy Engineering
- Department of Building and Real Estate
- Department of Civil and Environmental Engineering

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人文學院

• Department of Chinese History

• Department of Chinese and

• Department of English and

• Chinese Language Centre

• English Language Centre

Confucius Institute of Hong Kong

and Culture

**Bilingual Studies** 

Communication

• Department of Land Surveying and Geo-Informatics

Faculty of Humanities





- Department of Applied Social Sciences
- Department of Health Technology and Informatics
- Department of Rehabilitation • Sciences
- School of Nursing
- School of Optometry

#### POLYU DES<sup>•</sup>GN



#### **GRADUATE SCHOOL**



The Graduate School (GS) at PolyU plays a crucial role in planning, managing, and ensuring the quality of our research postgraduate (RPg) education. With topquality RPg programmes across nine Faculties/Schools and joint PhDs with leading universities, the GS fosters interdisciplinary research collaboration among students, academia, and industry to address the changing needs of Hong Kong, the Nation and the world.

#### FACULTY OF Engineering 工程學院



- Department of Aeronautical and Aviation Engineering
- Department of Biomedical Engineering
- Department of Computing • Department of Data Science
- and Artificial Intelligence\* • Department of Electrical and Electronic Engineering
- Department of Industrial and Systems Engineering
- Department of Mechanical Engineering

# **SCIENCE**



- Department of Applied Biology and Chemical Technology
- Department of Applied Mathematics
- Department of Applied Physics
- Department of Food Science and Nutrition













**SUBJECT RANKINGS** 

QS

1<sup>st</sup>

WORLD

UNIVERSITY

RANKINGS

Civil and Structur Engineering

**19** 

Art and Design





by Subject 2022







7

by Subject 2024		
nent <b>38</b> <sup>th</sup>	Engineering	
t 45 <sup>th</sup>	Business and Economics	
al <b>80</b> <sup>th</sup>	Social Sciences	
87 <sup>th</sup>	Computer Science	
<b>89</b> <sup>th</sup>	Arts and Humanities	
安 示 ジ SHANGHAI RANKING by Subject 2023		
st st	Hospitality and Tourism Management	
1º 1 st	Management	
1° 2°	Transportation Science and Technology	
nd 1º 3	Civil Engineering	
st	Best Universities for	

Blockchain 2022

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# NURTURING BRIGHT MINDS WHO CONTRIBUTE TO THE WELL-BEING OF SOCIETY

At PolyU, we strive for a holistic learning experience, nurturing future professionals and leaders with a deep affection for their family and Nation, a global outlook, and a strong sense of social responsibility, so that they can contribute to the long-term development of Hong Kong, the Nation, and the world.

160+ Programmes



**10,301** Graduates

# WORLD-CLASS **EDUCATION**

PolyU is committed to providing students with world-class education, reflected in the University being ranked among the top 100 institutions globally by prestigious organisations such as QS, Times Higher Education, and U.S. News & World Report. Moreover, PolyU is a leading university in a range of disciplines, including hospitality and leisure management, art and design, civil and structural engineering, social sciences and public health, to name just a few.

#### NURTURING SOCIALLY RESPONSIBLE **GRADUATES VIA SERVICE-LEARNING**

We were the first local university to make social responsibility and civic engagement a core component of our undergraduate education. We offer over 75 Service-Learning subjects taught by more than 30 academic units, educating students about social issues and enabling them to apply their classroom knowledge in service to the community.

Since 2012, our Service-Learning initiative has enrolled more than 37,800 students, contributing over 1.51 million hours of service to communities in Hong Kong, Mainland China and Taiwan, and overseas in countries such as Cambodia, India, Indonesia, Japan, Kazakhstan, Kyrgyzstan, Myanmar, the Philippines, Rwanda, South Africa, Thailand and Vietnam.

Our students have been:

- Performing much-needed eye exams for underprivileged youth.
- Installing solar panels to light up entire communities.
- Providing clean drinking water by setting up water filtration systems.

# **ENRICHING STUDENTS' LEARNING JOURNEY WITH COMMUNITY &** HANDS-ON **EXPERIENCES**

PolyU's community-based and practical learning experiences enhance students' confidence and passion to make a tangible impact wherever they are.

#### ENHANCING COMPETENCIES THROUGH WORK-INTEGRATED EDUCATION

To enrich students' professional readiness to serve the world around them, PolyU became the first university in Hong Kong to offer a mandatory Work-Integrated Education programme for undergraduates. The programme broadens students' practical experience and global perspective through internships in Australia, Mainland China, Greece, Hong Kong, Italy, South Korea, the UK, New Zealand, Singapore, South Africa, Taiwan, Thailand, and more.



# NURTURING TALENTED CHANGEMAKERS

PolyU is committed to empowering students to become future leaders who can inspire positive social change while embracing their unique skill sets—whether in tech, research, sports, arts, STEM, and more.



#### HARNESSING EMERGING TECH CAPABILITIES

Our newly incorporated undergraduate programmes, Artificial Intelligence and Data Analytics (AIDA) and Innovation and Entrepreneurship (IE), cultivate leaders adept at navigating the Industry 4.0 era and emerging technologies.



#### FOSTERING FUTURE KNOWLEDGE CREATORS VIA URIS

Designed to develop a new generation of enquirers and problem-solvers, our Undergraduate Research and Innovation Scheme (URIS) connects undergraduates with research projects supervised by university scholars. URIS students automatically join the virtual College of Undergraduate Researchers and Innovators (CURI) and receive priority allocation to the CURI Residential College with young academics as resident tutors.



#### CULTIVATING DIVERSE STRENGTHS VIA STARS

PolyU admits students with exceptional talents in sports, arts and culture, leadership and community services, and STEM through our Special Talents Admission and Recognition Scheme (STARS). A vibrant learning community awaits these outstanding students in our STARS Residential College.

# ENRICHING CREATIVITY AND CHARACTER WITH ART AND CULTURE

Art and culture are essential to PolyU's holistic education, with programmes covering performing arts, visual arts, film, creative media, literature, history, and cultural heritage. We also have the PolyU Orchestra, PolyU Choir and PolyU Theatre to foster students' creativity.

Our Artist-in-Residence (AIR) programme was established in 1999 to promote cultural exchange between students and professional artists. Over the years, AIR has had around 30 renowned art virtuosos engaging with our university community, from Maestro Mr Leung Kin-fung, to Historian-in-Residence Dr Joseph S. P. Ting, Pioneer of Contemporary Ink Painting Mr Wucius Wong, King of Drama Dr Chung King-fai, and Eminent Cantonese Opera Artist Mr Yuen Siu-fai.

To further advance PolyU's artistic and cultural impact to the community, the University also launched the PolyU Artists' Alliance in April 2023, bringing together artists from different fields with Dr Liza Wang, the highly respected performing artist and a University Fellow, as the Alliance's Convenor.









# **EMPOWERING ATHLETES AND UNIQUE TALENTS TO THRIVE**





Through our Outstanding Sportsmen Recommendation Scheme (OSRS), which has admitted over 1,500 elite athletes, Student-Athlete Learning Support and Admission (SALSA) Scheme, and our Elite Athletes Study Programme with the Hong Kong Sports Institute, we offer high-potential studentathletes the best of both worlds: the opportunity to study while pursuing excellence in sports.



# EXPANDING STUDENTS' HORIZONS

Through exposure to varied subjects, cultures, and experiences, PolyU students gain a deeper appreciation of the Nation and the world, realising the difference that they can make in their communities and society at large.



#### **DEVELOPING SOCIAL** VALUES AND NATIONAL **IDENTITY**

PolyU's curriculum promotes social responsibility, leadership integrity, law-abiding citizenship, as well as knowledge of Chinese history and culture. In January 2023, we established the Research Centre for Chinese History and Culture to further strengthen the local youth's sense of national identity and participation towards the Nation's development.

#### FACILITATING **KNOWLEDGE & WISDOM EXCHANGE THROUGH MENTORSHIP**

PolyU's university-wide mentorship programme, "INSPIRE", offers coaching, life experience-sharing, and job shadowing led by alumni, University Fellows, Poly-preneurs, Council and Court members, and other outstanding leaders. The programme has over 275 mentors and 1,150 mentees to date, enabling students to enhance their personal, academic, and professional development.

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PolyImpact

POLYU INVENTIONS AND INNOVATIONS THAT BENEFIT THE WORLD

Embedded within PolyU's DNA is a strong desire to better the world. In addition to pursuing pioneering research in frontier areas, we also embrace a strong culture of knowledge transfer. By proactively translating scientific discoveries into innovations and viable solutions, we expand human knowledge, tackle global challenges, and take the lead in making a positive impact on businesses, industries, and the world around us.

# нк\$5,341м Total Research Funding

# 4,025 Ongoing Research Projects

~2,900 Research Personnel

200+

Scholars Ranked Among the World's Top 2% Most-cited Scientists

(according to an index by Stanford University)

Having the largest number of top 2% scientists in Hong Kong and globally in the fields of Civil Engineering, and **Building and Construction** 

(according to an index by Stanford University)

# **BRINGING INTERDISCIPLINARY** SOLUTIONS TO COMPLEX SOCIETAL CHALLENGES



PolyU Academy for Interdisciplinary Research 香港理工大學高等研究院

#### THE LARGEST-OF-ITS-KIND RESEARCH PLATFORM IN HONG KONG AND THE **GREATER BAY AREA**

Amid challenges like climate change, an ageing population, and energy shortages, the world requires game-changing research for a sustainable future. The PolyU Academy for Interdisciplinary Research (PAIR) is a unique research model for Hong Kong, fostering a collaborative platform across different disciplines to provide practical solutions for pressing societal issues.

PolyU scholars have been scientific purveyors of groundbreaking research across various fields, with a focus on three research areas:

Advanced technologies and manufacturing

Good health and well-being

Smart and sustainable cities









#### RESEARCH INSTITUTES & RESEARCH CENTRES UNDER PAIR $\bigcirc$

#### **RESEARCH INSTITUTES**



Research Institute for Advanced Manufacturing



Research Institute for Intelligent Wearable



Research Institute for Smart Ageing



Research Institute for Sports Science and Technology





Research Centre for Chinese Medicine



Mental Health Research Centre



Research Centre of Textiles for Future Fashion



Research Institute for Artificial Intelligence of



Research Institute for Land and Space



Otto Poon Charitable Foundation Smart Cities Research Institute



Research Institute fo Sustainable Urban Development



Research Institute for Future Food



Photonics Research Institute



Otto Poon Charitable Foundation Research Institute for Smart Energy



Research Centre for Deep

Space Explorations

CTRCRE 碳中和資源工程研究中

Research Centre for

Engineering towards Carbon Neutrality

Resources



Research Centre for Digital ransformation of Tourism



Research Centre for SHARP Vision

# **HIGH-LEVEL SCIENTIFIC EXCHANGE AND COLLABORATION** WITH THE MAINLAND

Further reinforcing PolyU's expertise in research and knowledge transfer are a number of cutting-edge University research labs and centres supported by the Nation and industry partners, fostering frontier research and innovation in different disciplines.

State Key Laboratories

- State Key Laboratory of Chemical Biology and Drug Discovery
- (The Hong Kong Polytechnic University) • State Key Laboratory of Ultra-precision Machining Technology (The Hong Kong Polytechnic University)

Hong Kong Branches of Chinese National Engineering Research Centres

- Hong Kong Branch of National Engineering Research **Centre for Steel Construction**
- Hong Kong Branch of National Rail Transit Electrification and Automation Engineering Technology Research Centre

Chinese Academy of Sciences (CAS) -PolyU Joint Laboratories

- CAS Academy of Mathematics and Systems Science (AMSS)-PolyU Joint Laboratory of Applied **Mathematics**
- CAS Guangzhou Institute of Geochemistry (GIG)-PolyU Joint Laboratory of the Guangdong-Hong Kong-Macao Greater Bay Area for the Environment
- CAS Institute of Rock and Soil Mechanics (IRSM)-PolyU Joint Laboratory on Solid Waste Science
- Multi-modal Medical Molecular Imaging Joint Laboratory



#### **UNIVERSITY RESEARCH CENTRES**

- Colour, Imaging, and Metaverse Research Centre
- International Centre of Urban Energy Nexus
- Peking University-The Hong Kong Polytechnic University China Social Work Research Centre
- Policy Research Centre for Innovation and Technology
- Research Centre for Artificial Intelligence in Geomatics Research Centre for Assistive Technology
- Research Centre for Blockchain Technology
- Research Centre for Carbon-Strategic Catalysis
- Research Centre for Chinese History and Culture
- Research Centre for Cultural and Art Technology
- Research Centre for Data Science and Artificial Intelligence
- Research Centre for Electric Vehicles
- Research Centre for Future (Caring) Mobility
- Research Centre for Gerontology and Family Studies
- Research Centre for Nanoscience and Nanotechnology
- Research Centre for Nature-Inspired Science and Engineering
- Research Centre for Quantitative Finance
- Research Centre for Unmanned Autonomous Systems

#### ADVANCING GLOBAL COLLABORATIONS WITH THREE WORLD-CLASS RESEARCH CENTRES UNDER INNOHK

To help develop Hong Kong into a hub for global research collaboration, PolyU has partnered with world-leading institutions, harnessing its research competency in artificial intelligence, design, and vision science to create three research centres under two research clusters: AIR@InnoHK (focused on artificial intelligence and robotics technologies) and Health@InnoHK (focused on healthcare-related technologies).

These three world-class research centres at the Hong Kong Science Park are:





Laboratory for Artificial Intelligence in Design (AiDLab), established in collaboration with the Royal College of Art, UK.

PolyU has also become the first local collaborating institution of the "Centre for Artificial Intelligence and Robotics, Hong Kong Institute of Science & Innovation, Chinese Academy of Sciences". Established by the Institute of Automation of the Chinese Academy of Sciences, the Centre has been admitted into AIR@InnoHK under the InnoHK Clusters.

Established under the Mainland/GBA Research Funding Scheme:

- Joint Research Centre for Microelectronics
- Joint Research Centre for Marine Infrastructure
- Joint Research Centre for Biosensing and Precision Theranostics
- Joint Research Centre for Design and Net-shape Forming of Micro-/Meso-scaled Surface Functional Structures
- Joint Research Centre for Primary Health Care
- Joint Research Centre for Language, Brain, and Applications



# **ADDRESSING** SOCIETAL NEEDS WITH **IMPACTFUL RESEARCH**

PolyU has been harnessing its world-class research and knowledge transfer capabilities to make a positive impact.

#### Deep Space Exploration

We have been actively involved in space projects over the past few decades, and have actively supported the Nation's space missions, including missions to the Moon and to Mars, through the development of sophisticated technological instruments and identifying possible landing regions. Our projects include developing the "Camera Pointing System" for Chang'e-3 and Chang'e-4's lunar landings, creating the "Surface Sampling and Packing System" for Chang'e-5's lunar sampling mission, and producing the "Mars Camera" for the Tianwen-1 mission.

#### Smart Cities

We aim to provide an interdisciplinary platform for PolyU's experts to develop leading research in Smart Cities by capitalising on our existing interdisciplinary research strengths. Our key research themes also cover the six smart areas identified by the Hong Kong Smart City Blueprint, in response to the specific needs of Hong Kong as well as the generic needs for global smart cities development.

#### Materials & Sensing Technology

Our projects include new fabric-sensing technologies used in smart footwear and clothing to train athletes, prevent sports injuries and help people suffering from hypertension, Parkinson's disease, cardiovascular disease and diabetes. In addition, new processing technologies have been developed on the PolyU campus to produce novel electronic fabrics made from the world's finest electronic yarns.













#### Life Sciences & Healthcare

We are harnessing the power of science and innovation to transform the future of healthcare. From investigating the molecular mechanisms of cancer drug resistance to creating an AI drug discovery platform, we take pride in leveraging our unique expertise to make a positive impact on our world.

#### AI & Robotics

Our facilities include the state-of-the-art Artificial Intelligence and Robotics Lab in our Industrial Centre, as well as the Research Institute for Artificial Intelligence of Things. Our research outcomes include PolyPi, an innovative autonomous robot developed for pipeline inspection.



#### Advanced Manufacturing

Our vision is to create a world-class hub for global research and knowledge transfer in advanced manufacturing to drive the economic growth of Hong Kong, the Greater Bay Area and the Nation, with advanced processing and materials technologies, carbon-neutral manufacturing, digital manufacturing, and manufacturing systems and instrumentation as key research directions.

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### PROMOTING ENTREPRENEURSHIP, DRIVING CHANGE

A pioneer in promoting innovation and entrepreneurship, PolyU is a breeding ground for aspiring entrepreneurs. Through the PolyVentures initiative, the University has developed a robust entrepreneurial ecosystem that helps our academic- and student-led startups translate PolyU's research outcomes into real-world impact.

# 480+ Total Active Startups

**370+** International and Local Awards





Ponies



# **PolyVentures**

Our PolyVentures ecosystem empowers aspiring PolyU-affiliated entrepreneurs to transform innovative ideas into successful businesses. Our platform, rooted in entrepreneurship and innovation, offers resources like funding, networking, incubation programmes, training, and business matching services. We foster a mindset encouraging creativity, innovation, and risk-taking, enabling entrepreneurs to overcome business challenges and bring cutting-edge technologies and innovations to the market, positively impacting society.



#### ENTREPRENEURSHIP DEVELOPMENT FRAMEWORK

#### **EDUCATION AND IDEATION**

X + Innovation & Entrepreneurship

Undergraduate Research and Innovation Scheme

Future Challenge Competition (Domain-based)

Proof-of-Concept 2.0 Scheme

## PRE-INCUBATION / INCUBATION

Micro Fund Scheme

Programmes

Programme

GBA Startup Postdoc

(Hong Kong & Shenzhen)

• Up to \$120K funding for

• Direct admission to HKSTP

students and alumni

#### INVESTMENT FOR ACCELERATION

Two-tier Angel Fund Scheme

• Technology Startup Support Scheme for Universities and investment by PolyU Entrepreneurship Investment Fund

PolyU Entrepreneurship Investment Fund (EIF)



#### **EDUCATION AND IDEATION**

#### Future Challenge Competition

A startup ideation competition for students, researchers, alumni and industrialists to team up and come up with tech ideas and business models for the future.



#### **PRE-INCUBATION/ INCUBATION**



Max. HK\$120,000 funding Further incubation support up to HK\$1.29M

PolyU was the first university in Hong Kong to provide funding support to students to encourage entrepreneurship. Since its launch in 2011, the Fund has extended pre-incubation support to over 310 startups. The programme was revamped as Micro Fund 2.0 in 2021 with the support of the Hong Kong Science and Technology Parks Corporation (HKSTP), providing two-stage acceleration support for PolyU startups.

#### **INVESTMENT FOR ACCELERATION**

#### **Two-Tier ANGEL FUND Scheme**

Leveraging the Technology Startup Support Scheme for Universities under the Innovation and Technology Commission (ITC), the Angel Fund consists of two tiers (HK\$1M & HK\$3M) and supports technology startups comprising PolyU students, graduates, or faculty members. The Scheme supports early-stage startups which require a higher starting capital for research and development.

Funding Amount	
Tier One - HK\$1M Fund	Tier Two
HK\$0.5 million grant by Innovation and Technology Commission +	HK\$1.5 privat
HK\$0.5 million top-up investment by PolyU EIF (optional)	<b>Up to H</b> dollar-to- gra

#### Proof-of-Concept (POC) **Funding Scheme**

The PolyU Student Entrepreneurial Proof-of-Concept (POC) Funding Scheme, launched in 2017, is a key entrepreneurship education component at PolyU to support the ideation and prototyping of student innovations. With the support of the "Dr Winnie S M Tang-PolyU Student Innovation & Entrepreneurship Scholarship" since 2022, the POC Fund has been upgraded to POC 2.0.

#### **PolyVentures GBA STARTUP Postdoc Programme** @Hong Kong | Shenzhen

#### HK\$3M Fund

million secured te investment

+ HK\$1.5 million -dollar matching rant by ITC

#### Transforming PhD to Technopreneur

Piloted in 2019, the GBA Startup Postdoc Programme @Hong Kong/Shenzhen aims to promote research-based entrepreneurship and nurture recent doctoral graduates to become "Technopreneurs". The first of its kind in Asia, the programme offers dual academic supervision and industry mentorship for doctoral graduates who have strong passion and vision to commercialise research outcomes in the Greater Bay Area through acceleration support for PolyU startups.

#### PolyU **ENTREPRENEURSHIP INVESTMENT FUND**

The Entrepreneurship Investment Fund is an early-stage equity investment fund that leverages the resources and expertise of our co-investors and partners to further drive our research-into-impact mission. The Fund supports the scaling-up of startup companies which commercialise PolyU's research and innovations.

# POLYU ACADEMIC-LED **STARTUPS**

#### Soft contact lens to slow myopia progression

Prof. To Chi-ho, Prof. Carly Lam and Dr Dennis Tse of the School of Optometry have developed the novel myopia defocus technology to slow myopia progression. Additionally, Prof. To established VST to commercialise the technology and launched the DISC contact lens to market. The lens was proven to retard myopia progression among children aged between 8 and 13 by 60% on average. Later, VST partnered with Prof. Benny Cheung, Chair Professor of Ultra-precision Machining and Metrology, to develop the novel Nano Multi-ring Defocus Incorporated Spectacle (NMDIS) lens which can be applied to spectacle lenses for providing added comfort while offering more stable vision for wearers.









# **DEVELOPING INVENTIONS** FOR IMPACT







**Total Active** Startups



#### **HAIROBOTICS**

Hai Robotics, founded in 2016 by Mr Richie Chen and Mr Fang Bing, graduates of the Department of Electronic and Information Engineering of PolyU, is a startup that provides worldleading autonomous casehandling robotic systems.

to Watch List

**TELEFIELD** IMAGING D MEDIC

VISION SCIENC TECHNOLOGY

COMPANY

#### Radiation-free 3D scanning helps scoliosis patients monitor their condition

Ir Prof. Zheng Yongping, Founding Head of the Department of Biomedical Engineering, developed Scolioscan, the world's first 3D ultrasound scoliosis assessment system, so that patients, especially adolescents, can be screened for scoliosis without the radiation hazards associated with X-ray imaging.

The system can even be used to predict the future progression of scoliosis and evaluate the effects of treatments in real time during exercise or brace fitting. It has been used in different parts of the world, including Australia, Mainland China, Germany and the Netherlands.

Non-toxic, eco-friendly antimicrobial coating reduces risk of

eco-friendly antimicrobial coating, can kill 99% of common bacteria and viruses.

Prof. Li Pei of PolyU's Department of Applied Biology and Chemical Technology, and **Dr Tenny Lam**, a PolyU Doctor of Business Administration graduate, co-established Grand Rise, translating the patented core-shell nanoparticle technology invented by Professor Li to eco-friendly new materials. Their first product, CareCoatex<sup>™</sup>, a biocompatible, non-toxic and

disease from surface transmission

# GRAND

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#### Antimicrobial 3D printing materials for infection control in public and medical markets

Dr Chris Lo Kawn-yu, Professor, and Prof. Kan Chi-wai, Associate Dean (Strategic Planning & Development), School of Fashion and Textiles, developed the world's first antiviral 3D printing material technology, which can be used to create antibacterial products that can eliminate 70% of the pathogens on surfaces within two minutes and 99.2% within 20 minutes. It is highly effective in preventing the spread of pathogens, e.g., E. coli and human coronavirus.



graduate Mr James O in 2013, GoGoX is one of the first mobile app-based logistics platforms in Asia revitalising the traditional logistics industry with innovative technology.

by Dr Bruce Wang, a graduate of the Department of Mechanical Engineering, provides industry-leading portable power solutions, solar technology, and the world's first smart home ecosystem.

2012 by Mr Dante Tsang, a graduate of the Associate in Information Technology programme, is a startup that offers a suite of automation tools. It helps businesses with sales, marketing, order management, and shipment tracking.

Included in Forbes Asia 100







# ALUMN



OUTSTANDING POLYU ALUMNI AWARD 2022 Award Presentation Ceremony 傑出理大校友獎2022頒獎典禮





#### FORGING A BETTER WORLD WITH **EXCEPTIONAL ALUMNI**

For over eight decades, PolyU has nurtured more than 477,000 graduates worldwide. These graduates have flourished as distinguished leaders, high achievers, and role models in various fields including the public sector, healthcare, accounting, engineering, the arts, entrepreneurship, community leadership, and many more.

PolyU alumni are ambassadors of meaningful change. Imbued with a strong desire to apply their knowledge in serving society, they have helped address the needs of Hong Kong, the Nation and the world through their respective careers. These thriving professionals have also continued to support PolyU's next generation of leaders by participating in various alumni initiatives.

#### FOSTERING CONNECTIONS WITH **EXTENSIVE ALUMNI NETWORKS**

PolyU maintains an extensive network of engaged and supportive alumni in Hong Kong and around the world. From 41 local alumni associations, to further alumni networks in Mainland China and overseas associations across Australia, Canada, Singapore, the UK and the United States, our alumni networks keep PolyU graduates connected with the university community long after they have left the campus. These networks also enable established graduates to reach out to existing students, and vice-versa, enabling fruitful knowledge, career, and opportunity exchanges between the two.

#### SUPPORTING POLYU'S CONTINUED GROWTH

Always seeking to grow and inspire growth, many of our alumni regularly participate in programmes that support their alma mater and the PolyU community. They lend their expertise, time, and networks towards mentoring students, leading alumni groups, participating in fundraising events, and more, contributing to PolyU's continued pursuit of academic and research excellence in whicheve way they can.



Local Associations

**Overseas Associations** 

**Mainland Networks** 

105 **Outstanding PolyU Alumni** Awardees

as of December 2023

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# BUILDING STRONG CONNECTIONS WORLDWIDE

PolyU has built robust partnerships with tertiary and research institutions worldwide, and with a firm presence in Mainland China, we are also committed to supporting the development of the Guangdong-Hong Kong-Macao Greater Bay Area. We are actively strengthening our international networks, and advancing our education, research, and knowledge transfer impact around the globe.

# GLOBAL ENGAGEMENT





Overseas Partner Institutions from 42 Countries and Regions

# MAINLAND NETWORK

#### Joint PhD Programmes with

**14** Mainland Universities



900+

Mainland Partner Universities / Research Institutes

# **ADVANCING THE NATION'S DEVELOPMENT WITH EDUCATION & RESEARCH**

PolyU has actively built ties with the Mainland to advance its research capabilities and develop talent who are capable of moving the Nation towards progressive economic growth.

#### NATION-APPROVED RESEARCH FACILITIES

PolyU is home to two State Key Laboratories and two Hong Kong Branches of the Chinese National Engineering Research Centres: State Key Laboratory of Chemical Biology and Drug Discovery, State Key Laboratory of Ultra-Precision Machining Technology, National Engineering Research Centre for Steel Construction (Hong Kong Branch), and the National Rail Transit Electrification and Automation Engineering Technology Research Centre (Hong Kong Branch). Approved by the Ministry of Science and Technology, these facilities are dedicated to advancing the technological and scientific development of the Nation and the GBA through research covering life sciences, infrastructure development, advanced optics and critical precision components, rail technical innovations, drug discovery, advanced manufacturing, applied engineering for steel construction, and more.

#### **DRIVING INNOVATION WITH SPACE AND INFRASTRUCTURE PROJECTS**

PolyU has contributed to a number of key deep space exploration, mega-structure and high-speed railway research projects for the Nation over the years.

We are the only local university to have been involved in national space missions, making significant contributions to the Nation's historic space missions including the Chang'e-3 mission in 2013, Chang'e-4 mission in 2019, Chang'e-5 mission in 2020 and Tianwen-1 mission in 2021. To enable predictive maintenance and improve the service reliability of our metro lines, we have also developed a smart railway condition monitoring technology whose proprietary optical fibre sensing technology has now been installed in several parts of the Nation's high-speed rail network as well as adopted in multiple countries. Moreover, our Structural Health Monitoring System provides health checks throughout a building's lifespan, and has been installed in major architecture such as the Sutong Bridge and Canton Tower in the Mainland



#### NURTURING FUTURE LEADERS WITH JOINT PROGRAMMES

PolyU has been offering joint programmes ranging from master's to doctoral levels in collaboration with Mainland universities. PolyU also has the highest number of educational programmes approved by the Ministry of Education among Hong Kong institutions.

#### POLYU'S COOPERATIVE EDUCATION PROGRAMMES APPROVED BY THE MINISTRY OF EDUCATION

**Doctor of Hotel and Tourism Management** (in collaboration with Zhejiang University)

**Doctor of Management** (in collaboration with Renmin University of China)

Master of Arts in Fashion and Textiles (Fashion Merchandising) (in collaboration with Xi'an Polytechnic University)

Master of Business Administration (in collaboration with Xi'an Jiaotong University)

Master of Science in Disaster Nursing (in collaboration with Sichuan University)

Master of Science in Hotel and Tourism Management (in collaboration with Zhejiang University)

Master of Science in Information Systems (in collaboration with Xi'an Jiaotong University)

Master of Science in International Real Estate (in collaboration with Zhejiang University)

Master of Science in Quality Management (in collaboration with Zhejiang University)



#### **ADDRESSING SOCIETAL NEEDS** WITH TRANSLATIONAL RESEARCH

To transform our research into targeted solutions for the Mainland, PolyU is setting up translational research institutes in various Mainland cities. These institutes aim to align the University's research capabilities with the industrial and societal needs of the Mainland cities, thereby promoting their development. Funding for each institute is secured from the host cities for the institute's applied research and knowledge transfer activities.

The University has already signed MoUs and detailed agreements with Jinjiang, Wuxi, Hangzhou and Wenzhou to set up translational research institutes. We have also signed MoUs with Shenzhen (Guangming), Nanjing, Wuhan, Hefei, Ganzhou, and the Eastern Institute of Technology in Ningbo to establish translational research institutes.

#### SIX REGIONAL BASES IN THE MAINLAND

PolyU was the first institution in Hong Kong to be invited to visit leading institutions in the Nation back in 1978. Over the years, the University has established six regional bases in the Mainland – in Beijing, Chengdu, Hangzhou, Shanghai, Shenzhen and Xi'an.

Building on the strengths of these regional bases and partnerships, the University will capitalise on development opportunities in the Mainland, taking a greater part in the development of the Nation.

**POLYU'S MAINLAND PRESENCE** 





The Hong Kong Polytechnic University Institute for Disaster Management and Reconstruction

#### **EMPOWERING THE BELT AND ROAD INITIATIVE**

PolyU is a founding member of the University Alliance of the Silk Road to promote cultural exchange and collaboration with more than 150 leading universities from 37 countries and regions. We also developed the Belt and Road Cross-Professional Advancement Programme to provide an interdisciplinary knowledge platform for professionals and business leaders in Hong Kong and the Mainland, as well as the Belt and Road Advanced Professional Development Programme in Power and Energy, the first of its kind in Mainland China and Hong Kong, to address the growing demand for talent in the power and energy sector. Furthermore, our bilateral research exchange schemes include the Belt and Road Academic Fellowship Scheme, the K.C. Wong Belt and Road Visiting Fellowship Scheme, and the Research Student Attachment Programme.

Leveraging our expertise and capacity-building network, we foster talent development, research and knowledge transfer among Belt and Road countries.

# **OUR WORLDWIDE** REACH

As an international and world-class university with a multicultural learning, teaching and research environment, PolyU maintains relationships with over 275 overseas partner institutions in 42 countries and regions across the globe. We have over 440 academic collaboration agreements in place worldwide, encompassing student exchange initiatives as well as research collaborations. The University will continue to broaden the scope of its collaboration with existing partners and establish new partnerships with highly ranked institutions worldwide, solidifying PolyU's position as a leading force in global academia.



#### **GLOBAL CONNECTIONS**









#### **STUDENT EXCHANGE PARTNERS**



\* One of the student exchange partnerships is a worldwide arrangement with "Global Engineering Education Exchange (GE3)" which does not fall into a single region.

#### **CHAMPIONING AN INTERNATIONAL** LEARNING ENVIRONMENT

PolyU is committed to building a truly international and inclusive campus. Ranked 10th in the "World's Most International Universities 2024" by Times Higher Education, we have forged partnerships with leading institutions worldwide to facilitate international academic exchanges, as well as promote cultural diversity and an appreciation of global issues, among our students. By 2027/28, we also aim to provide every undergraduate student access to a nonlocal study opportunity.



#### **UNIVERSITY SOCIAL** RESPONSIBILITY **NETWORK (USRN)**

Established in 2015, the USRN is a global alliance promoting University Social Responsibility by exchanging ideas, resources, and practices to guide USR development in higher education. With 20 member institutions worldwide, including PolyU as a founding member and Executive Committee Chair, members are leading universities dedicated to making a positive societal impact.

#### **DEVELOPING OUTSTANDING PHD GRADUATES WITH GLOBAL PARTNERS**

Through our Joint PhD Programmes, students can benefit from the research excellence of overseas partner universities and obtain their PhD degrees from both PolyU and any of these prestigious institutions: Queensland University of Technology (Australia), University of Technology Sydney (Australia), and University of Surrey (UK).





# EXPANDING THE CAMPUS AND ACHIEVING CARBON NEUTRALITY

PolyU is dedicated to building a green learning environment. We have been undertaking campus development initiatives to advance our leadership in education and research as well as support a carbon-neutral Hong Kong. Leveraging our own innovations, these projects aim to facilitate the adoption of sustainable applications beyond the campus for the betterment of Hong Kong, the Nation, and the world.

#### **OS WORLD UNIVERSITY RANKINGS: SUSTAINABILITY 2023**

# Hong Kong 2<sup>nd</sup>

# Global 82<sup>nd</sup>

#### WASTE AND CARBON REDUCTION

**246,700+**<sub>nos.</sub> **Recycling Volume** at Reverse Vending 146% compared to 2021/22 Machine (RVM)



**Direct** and Indirect Carbon **Emissions per** Capita (Scope 1 and 2 emissions only)

>30%

compared to the peak level in 2014/15

230+ tonnes

**Reduction of Municipal Solid** Waste Disposal to Landfill from Main Campus

# AN INTERDISCIPLINARY **APPROACH TO** DECARBONISING HONG KONG

In support of the Hong Kong Government's carbon neutrality plan, PolyU has established the Campus Carbon Neutrality Committee to oversee the University's progress against its 2045 carbon neutrality roadmap. The Carbon Neutrality Funding Scheme has also been created to support the application of related research on campus and aid various PolyU experts as they work on groundbreaking decarbonisation research initiatives for the University and the wider community.



# **IN-CAMPUS COLLABORATIONS FOR** A GREENER FUTURE

PolyU's laboratories are built to develop technologies for driving carbon neutrality, smart energy management, building sustainability, and community health. By incorporating these homegrown innovations into our present and future spaces, PolyU becomes a proof-of-concept platform, from which impactful, market-ready solutions can flourish to realise a more sustainable society.

#### **ADVANCING REAL-WORLD APPLICATIONS WITH SUSTAINABILITY-RELATED RESEARCH PROJECTS**

Nurturing original thinkers with a heart for the environment, PolyU is shaping the future of sustainability research with revolutionary inventions initiated and applied within and around the campus:



A building-integrated photovoltaics system for promoting clean, eco-friendly and renewable energy



Eco-friendly construction materials, or "eco-blocks", that can reduce glass waste and curb carbon emissions



An energy-saving system that can conduct an overall building analysis for reducing energy consumption while sustaining normal air-conditioning and lighting



# FORGING AHEAD AS AN INNOVATIVE WORLD-CLASS UNIVERSITY

At PolyU, our goal is to be an innovative world-class university with a strong sense of social responsibility. As emerging technologies continue to reshape our world, we will continue to enrich our educational offerings and nurture talented graduates who can drive innovation, meet evolving societal needs, and play a leading role in the I&T industries transforming Hong Kong, the Greater Bay Area, and beyond.

Research with practical impact will remain central to our mission. We will persist in conducting research that transcends academia, focusing on addressing the world's most pressing challenges. Our strong interdisciplinary research culture and established expertise in STEM disciplines will enable us to advance the production of impactful solutions that make a positive difference.

Last but not least, we will strive to be one of the best universities in the country in engineering and technology, and a global leader in our many unique/niche disciplines. In all the above ways, we will ensure that we stay at the forefront of contributing to the socio-economic development of Hong Kong, the Nation, and the world.





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