



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學

I/E Institute for Entrepreneurship  
企業發展院

# Easing Your Way To Business Innovation



# ENHANCING YOUR BUSINESS WITH INNOVATION & EXPERTISE

The business world has been evolving in an incredibly rapid pace, leading to increased complexity in how businesses operate in the competitive environment. Technological innovation is one of the effective approaches in reinforcing business values and sustaining business competitiveness. The adoption of emergent technologies and innovations has become a prerequisite for any enterprise to advance, prosper, excel and succeed.

The Hong Kong Polytechnic University (PolyU) is your ideal partner in this endeavour. By conducting impactful world-class research with value and transferring expert knowledge thus created to the wider world, we aim to sharpen the competitive edges of enterprises and facilitate entrepreneurial development. Our innovative solutions are tailored to the specific needs of our partners, and are delivered via one or a combination of our modes of knowledge transfer (KT).

*Explore our KT modes >*



# CONSULTANCY SERVICES

PolyU professionals endeavour to collaborate with industry partners to confront their business challenges, striving to identify the underlying problems and provide the optimal solutions. Leveraging PolyU's diverse expertise, rich resources and excellent facilities, we develop and transfer to our partners specific knowledge through customised consultancy services, taking into account their unique requirements and needs. Not only can our partners have their problems solved, but they can also gain new strengths to tackle future challenges. Sometimes, these collaborations even open new areas of research that could revolutionise industries and our lives. Consultancy projects are administered by PolyU Technology and Consultancy Co. Limited (PTeC), an ISO-accredited strategic consultancy arm of the University.



PTeC  
<http://www.ptec.com.hk>



## Case in Point: **Optimisation of HVAC Systems**

As in situations across the globe, buildings account for the largest electricity consumption in Hong Kong. While commercial and industrial buildings consume over 90% of all electric energy here, heating, ventilation and air conditioning (HVAC) systems take up over 50% of it on average. However, much of the consumed energy is wasted due to improper design, commissioning, operation and control of these systems, especially in the case of outdated models. PolyU's experts in building services engineering have long been devising related optimisation strategies and energy efficient approaches, covering all sub-systems as well as control systems for conventional and special indoor environment, such as cleanrooms, industrial processes and underground stations. The comprehensive solutions include robust optimal design of HVAC systems, building energy diagnostic and commissioning methods and tools, optimal control of air side and water side systems, automation and energy-efficient control.

Through dedicated consultancy services, PolyU's HVAC optimisation solutions have been applied in various architectural establishments, such as a transport station, pharmaceutical manufacturing buildings, hotels and commercial centres. In a commercial centre at Kowloon Station, the optimisation system has been fully incorporated into the design and control of the air conditioning system, and has achieved a significant annual saving of over 18% of electricity for the entire building.



# 2

## COLLABORATIVE RESEARCH

For decades, our visionary experts have been engaging in countless forward-looking, long-term researches to explore a variety of future technologies that will change our lives dramatically. By collaborating with equally forward-thinking enterprises, we can bring these high-level researches to the market, creating sustainable competitiveness for our partners. We work closely with the R&D teams of our partners in the in-depth development of knowledge, technology and know-how at a fundamental level. Oftentimes, proprietary technologies that can help enterprises establish strategic barriers to their rivals are created as a result of the collaboration. They may also opt for taking part in collaborative research by solely funding our research or funding and joining our research simultaneously.



## Case in Point: **Myopia Control Technology**

PolyU's School of Optometry is committed to nurturing professional optometrists and conducting cutting-edge research to safeguard our eye health. One major focus of the School is myopia, a prevalent vision condition affecting an alarming proportion of people globally, especially in Asia. Apart from blurry vision, moderate to high myopia is associated with an increased risk of serious eye diseases. Aiming to mitigate the epidemic, our experts have developed "myopia defocus", a revolutionary method for controlling the condition in children based on a natural mechanism of the eye where the eyeball size is regulated by optical inputs. The School then engaged in collaborative research with a major player in the field of branded optical products, and successfully developed a spectacle lens for myopia control in children. Clinically proven to be effective in slowing down myopic progression by around 60% in schoolchildren in Hong Kong, the lens is widely accepted in the Chinese mainland and Hong Kong markets.



# 3

## TECHNOLOGY LICENSING

The research experts of various disciplines at PolyU have created a great amount of cutting-edge technologies and innovations that may help enhance business competitiveness. These ready-to-deploy technologies have been thoroughly tested with scientific studies and trials, and are proven to be effective in solving a wide range of problems. Technology licensing brings mutual benefits to the academics and the licensees. On one hand, it provides enterprises with an easy way to leverage our expertise flexibly; and on the other, enterprises may further develop our technologies into products for the market. Details of PolyU's technologies can be accessed through our Tech Search and Patent Search engines.



*Tech Search*  
<https://polyu.hk/SKOXY>



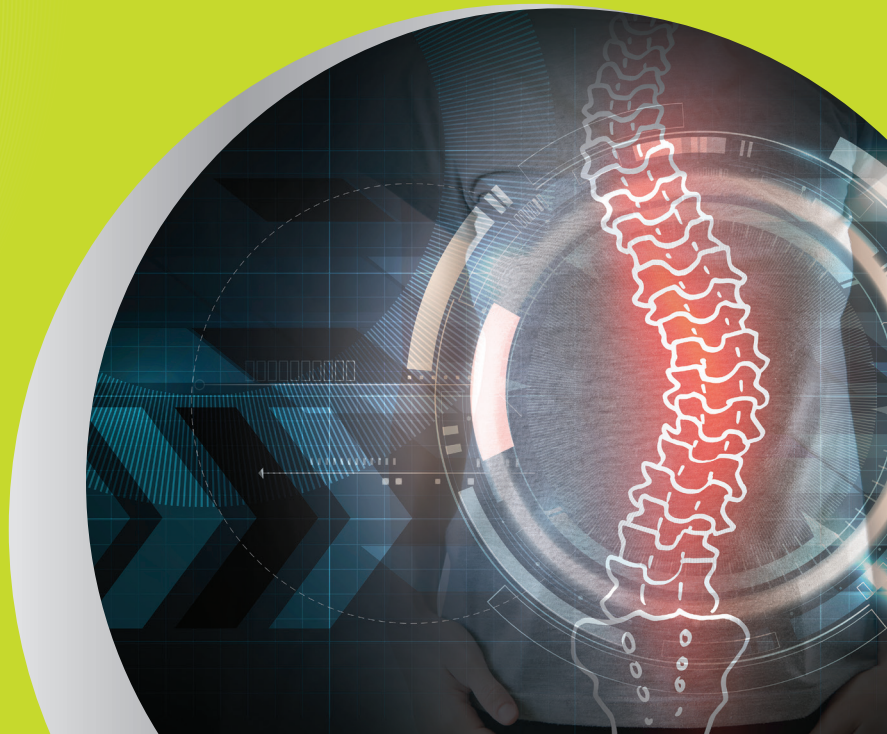
*Patent Search*  
<https://polyu.hk/JfJUG>



## Case in Point: **Radiation-free Scoliosis Monitoring**

The academics at PolyU's Department of Biomedical Engineering have ample experience in medical imaging, a process with which visual representations of the body interior are created for clinical observation, analysis and medical intervention. For example, a project team has developed and filed patents in various countries for Scolioscan, a radiation-free system for scoliosis evaluation based on 3D ultrasound imaging techniques. The technology enables adolescent patients to have the condition monitored properly without increasing the risk of cancer.

Seeing its tremendous potential, an electronics manufacturer that wished to embark on biomedical equipment production successfully obtained the license for commercialising it. Thus far, units of Scolioscan have been installed at medical establishments in Australia, Bosnia and Herzegovina, Italy, the Netherlands, Poland, Romania, the Chinese mainland, Macau and Hong Kong, and the list keeps growing. Furthermore, the company continues to work with PolyU to co-develop Scolioscan Air, a portable version of the device.



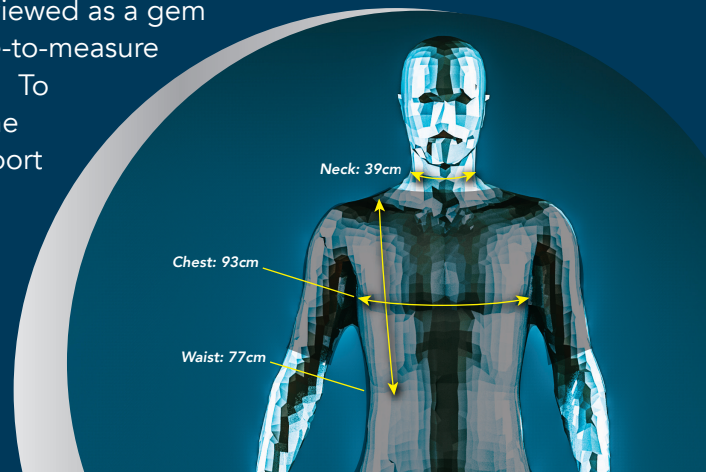


# 4 SPIN-OFF COMPANIES/ STARTUPS

While global economy is shifting towards a knowledge-based model, entrepreneurship plays a pivotal role as adventurous entrepreneurs keep bringing beneficial innovations and technologies to the world. PolyU is dedicated to creating a conducive ambience for entrepreneurship across the campus, and assisting academic staff, alumni and students to turn their innovative ideas into real products and services in the market. Therefore, we offer the option of spinning off a specialised company or supporting a startup to facilitate knowledge transfer for the PolyU community. Other forms of entrepreneurial support include seed funding, education, training, mentorship, etc.

## Case in Point: **Precise 3D Human Modelling**

Experts in our Institute of Textiles and Clothing never get tired of finding ways to revolutionise and advance the fashion industry with technology. Among them are an academic and an alumnus who jointly developed an intelligent imaged-based human 3D modelling technology that can reconstruct a 3D body shape and extract over 50 accurate body measurements instantly by taking two photos with the mobile app. The technology is viewed as a gem for the fashion industry, especially in facilitating made-to-measure fashion and size recommendation in online shopping. To commercialise and further develop the technology, the alumnus founded a startup in Shenzhen with the support from Shanghai Technology Entrepreneurship Foundation-PolyU China Entrepreneurship Fund. Based on this technology, the company has already launched a number of mobile apps, AI applications and solutions for individual and corporate users.



## ***Talk to Us Now***

We know that the reality may be less clear-cut and more complicated. Just talk to our professional team about your problems, goals and aspirations and let us customise a solution for your business. Whether you wish to tackle a technical challenge, rejuvenate your product line, enhance management efficiency, venture into a new area, or upgrade your business in any other way, we are here to help. Call us now and let's discuss!

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***<https://www.polyu.edu.hk/ife>***