

Food Safety & Quality

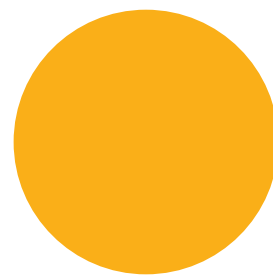


Invigorating
Synergy



Addressing your Unmet Needs through

Innovation



About The Hong Kong Polytechnic University

To Learn and to Apply, for the Benefit of Mankind

The Hong Kong Polytechnic University (PolyU) is the largest government-funded tertiary institution in Hong Kong, with total student numbers of more than 25,000. Through our faculties and schools - the Faculty of Applied Science and Textiles, Faculty of Business, Faculty of Construction and Environment, Faculty of Engineering, Faculty of Health and Social Sciences, Faculty of Humanities, School of Design, and School of Hotel and Tourism Management, the University connects education and research to the real world as manifested in our motto “To learn and to apply, for the benefit of mankind”. Our applied research and innovations have been applauded and honored worldwide for meeting the evolving needs of society and making the world we live in a better place. The University has also maintained a **close partnership with industrial and commercial sectors, and collaborated with numerous universities worldwide** in order to contribute to the society with its expertise, state-of-the-art technology and resources. All these efforts have enabled PolyU to bring about significant impacts to the development of Hong Kong, the nation and the world.

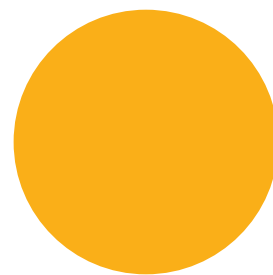


Research and Technology @ PolyU

Being one of the strategic areas of development at PolyU, knowledge transfer has always been awarded its meed of attention and due focus from the University. It has marked numerous footprints in the University's history. PolyU has spared no efforts in sustaining its long-established eminence particularly in this area of excellence. Our application-oriented innovation and technology development serves to address people's needs and the community's advancement along the continuum of research through knowledge transfer to its ultimate creation of high impacts to the society. We are keen to foster partnerships among universities, government, industry and public at large and minimize the gap in technology readiness between research outcomes and society's needs.

To this end, the **Research and Innovation Office (RIO)** as a forward-looking department in the University, is devoted to propelling the University's technology development and advances to benefit the society by providing all-rounded support to facilitate research endeavours within the PolyU community, and foster partnerships among universities, industries, governments, supranational bodies, and the public.





Food Safety and Quality Collaborative Platforms @ PolyU

Steered by its pioneering vision, “Be a leading university that advances and transfers knowledge, and provides the best holistic education for the benefit of Hong Kong, the nation and the world”, PolyU is destined to deliver its mission **“to pursue impactful research that benefits the world”**. It lays down a solid foundation initiating knowledge transfer, enlightening innovation as well as nurturing technology development from which PolyU capitalizes on sustaining its applause winning achievements.

We pioneer advances in numerous areas and here are some of our footprints on the trail of innovation in **Food Safety and Quality**.



Global Food Safety Platforms @ PolyU

PolyU has long been committed in addressing unmet global needs through innovation, and food safety and quality is among our strategic areas. With the ever-arising issues such as the use of gutter oil, vampire meat, and food fraud, food safety and quality issues keep hitting headlines in recent years and many are yet to be tackled. PolyU has established collaborative platforms bringing together academic expertise (U), industry needs (I), and viewpoints from regulatory bodies and governmental organizations (C) to synergize our efforts in addressing these needs and enhancing consumer confidence on food safety and related matters.

Food Safety Consortium (FSC)

FSC was launched by PolyU in 2015 to address unmet food safety needs through innovation and visualize PolyU's determination and commitment in advancing global food safety. It comprises stakeholders from the academia, industry and other organizations to address food safety challenges with cutting-edge and applied technologies, together with timely and in-depth communications on food safety related matters.



Testing & Services

Food Security Management



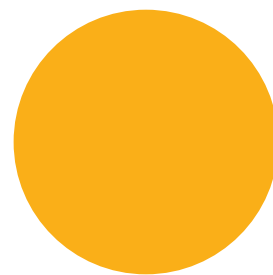
Manufacturing



Retail & Wholesale



Catering



FSC is the **Hong Kong Affiliate of the International Association for Food Protection (IAFP)**, a prestigious industry association with over 100 years of history in protecting global food supply. It is also the only non-governmental organization from Hong Kong and mainland China to become an **Observer at the FAO/WHO Codex Alimentarius Commission**. Its development is steered by prominent members of the industry, academia and professional organizations to optimize its capability of advancing food safety with science and technology.



Objectives

- To create an industry-academia network and to provide support to the industry with advanced technology and science.
- To enhance capability and competence on food safety and its related technology development through academic and industrial collaborations.

Strengths and Scope

FSC is excited to explore different collaborative models and innovations to assist the industry in adopting advance technologies.





DISH Global Centre for Food Safety and Quality (DISH)

DISH is a unique, non-profit platform founded by four economies - Denmark, Italy, Sweden, Hong Kong to foster European - Hong Kong/China - Asia Pacific collaborations in food safety and quality. The centre, officially launched in 2017, aims at translating cutting-edge innovations and into high quality applications through research, development, exploring collaborations and technology transfer.

The partnership between PolyU and Lund University, National Food Institute - Denmark Technical University, and the University of Bologna will effectively synergize the expertise and dedications of all four universities and our extensive networks to solve global, everyday food safety challenges with world-class solutions.

Founding Universities:



DISH Vision

To be a Global Leading Collaborative Centre for Food Safety.

- One-stop platform for food safety stakeholders looking for cutting-edge innovations and solutions
- Engagements between academia and research institutes, and with industry, government, supranational bodies, NGOs and other stakeholders
- Access to global expertise in tackling food safety challenges - facilitate EU-HK-Asia collaborative research in food safety
- Continual expansion of platform across different countries and continents



Technology Areas



Food Fraud & Authenticity



Food Traceability



Food Logistics & Retail



Rapid Testing



Chemical and Biological Safety



Food Packaging



Food Safety and Technology Research Centre (FSTRC)

Food Safety and Technology is one of the top strategic research foci of PolyU. In response to the pressing need of the society, PolyU established the first university-based Food Safety and Technology Research Centre (FSTRC) in Hong Kong in 2011. Over the years, research teams in FSTRC have attained impressive technology breakthrough in various research areas and have received wide recognition from local, national and international authorities.

Vision

Be a leading research centre that advances and transfers knowledge by research, public education and one-stop service to promote Food Safety and Technology, hereby safeguarding public health for the benefit of Hong Kong, the nation and the world.

Mission

- To pursue impactful and innovative research in Food Safety and Technology
- To provide scientific and technological support to food industry
- To foster a “Food Safety” culture and safeguard public health



Centre's Six Strategic Areas



**Testing &
Certification**



**Risk Analysis &
Toxicology**



**Novel Technology
Development**



**Functional Food
Development**



**Food
Microbiology**



**Nutrition &
Public Health**





Global Engagement & Recognition

We set up platforms to nurture and boost high-impact research through both individual efforts and in collaboration with other parties including universities, industry, government and the like locally and internationally.

FSC and Our Corporate Members

PolyU has made food safety one of our strategic research domains and is committed in conducting impactful research for the benefits of the society. We have established close connections and collaborations with different stakeholders and received both local and international recognition from the government, industry and the community, boosting high-quality research with innovative technologies through our capabilities and substantial network. As of June 2020, we are the home to 65 Corporate Members from different sectors of the food industry – manufacturing, retail & wholesale, catering, testing & services, food security management, and other stakeholder organizations.



Hong Kong Affiliate of the International Association for Food Protection (IAFP)

IAFP is a prestigious food association in the United States. Established in 1911 in Milwaukee, Wisconsin, U.S., the **IAFP houses over 4,000 food safety professionals representing 50 countries as members**, committed to Advancing Food Safety worldwide. FSC became the Hong Kong affiliate of IAFP in 2015, and was presented with two significant awards - the **"2017 C.B. Shogren Memorial Award"** and the **"2019 Affiliate Communication Award"**. Both awards recognized FSC's exceptional contribution towards the promotion of food safety throughout the world. FSC was the first IAFP affiliate outside the Americas to receive the C.B. Shogren Memorial Award.



www.foodprotection.org



FSC is the First Non-governmental Organization Codex Observer from Hong Kong & Greater China

FSC is an Observer at the Codex Alimentarius Commission (Codex), a body established by the Food and Agriculture Organisation of the United Nations (FAO) and World Health Organisation (WHO) to develop food standards under the Joint FAO/WHO Food Standards Programme. The status creates a unique opportunity and a significant step forward for FSC to participate in this pre-eminent international food standards-setting body that protects the health of consumers and ensures fair practices in food trade through contributing to international standards, guidelines and codes of practice.

FSC supports the view that food safety is a shared global responsibility. It is only through continuous exchanges and collaboration that we can jointly tackle food safety challenges around the world. FSC could channel the views and suggestions of its members to the attention at the supranational level during Codex's standard formulation process and invigorating exchanges.



(In the middle) Mr. Tom Heilandt, Codex Secretary delivered a lecture "Codex Alimentarius – Protecting Health, Facilitating Trade" at PolyU



(From left) Mr. Yves Rey, former Corporate Quality General Manager at Danone Group, Mr. Guilherme Costa, Chairperson of Codex Alimentarius Commission, Prof. Terence Lau, Convener of Food Safety Consortium and Mr. Frank Yiannas, Deputy Commissioner for Food Policy and Response – Food and Drug Administration at the first World Food Safety Day at the United Nations Headquarters in New York City

Senior Advisory for United Nations Office for Project Services (UNOPS)

FSC Convener, Prof. Terence Lau, was appointed by the UNOPS as Senior Advisor to facilitate the development of the Asia-Pacific Smart Agricultural and Food Safety Industrial Demonstration Zone and to enhance capacity-building, promotion, and facilitating public-private partnerships in Changchun region of mainland China.



PolyU and JIFSAN Collaborate on Food Safety Courses

PolyU collaborates with the Joint Institute for Food Safety and Applied Nutrition (JIFSAN), a centre of excellence established by the United States Food and Drug Administration (FDA), and the University of Maryland to provide science-based food safety training in Hong Kong and Shenzhen recognized by FDA.





Multidisciplinary Technology Development and Collaborative Research

Technology Development translates abstract strings of thoughts powered by innovation into outcomes capable of delivering human wellbeing. We are determined to bring high-impact research to reality through developing technologies associated with significant breakthroughs and bring about paradigm shifts to the society.

PolyU as the only University in Hong Kong Participating in Cross-continental Research “EU-China-Safe”

The **European Horizon 2020 programme** and **Chinese Ministry of Science and Technology (MOST) programme** have awarded **€10 million** towards an EU-China partnership to improve food safety and tackle food fraud. The EU-China-Safe project involve key players [15 in EU, 18 in China] in the food industry, research organisations and Governments across two of the world’s largest trading areas. **PolyU is one of the 18 participants in China, and the only representative from Hong Kong.**



Big data-enabled Collaborative Database for Non-targeted Contaminants Detection

PolyU partners with key players in the dairy industry to develop non-targeted approach contaminants detection in milk and milk products. The objective of the project is to set up an innovative and comprehensive big-data enabled collaborative database for the detection of unknown contaminants. The technology shall first be applied on milk and milk ingredients. This non-targeted methodology and the database developed can be utilized by the industry to effectively identify any sample anomalies which may arise from potential contaminants or adulterants without our prior knowledge, safe-guarding the quality and safety of milk and milk ingredients for consumers and preventing the next Melamine incident.

PolyU is also actively exploring non-targeted contaminant detection in various commodities with the use of big data, IoT, artificial intelligence, and blockchain.



Spearheading Artificial Intelligence, Big Data, and Blockchain Research for Multidisciplinary Applications

Since 2016, PolyU has been working closely together with our industry partners in the collaboration on different research projects, in areas of AI, biochemistry and food safety such as research on the application of block chain technology in supply chain tracking. An AI collaborative platform was established in November 2018 to foster closer partnership in staff and student exchanges, research collaboration, joint participation of internationally funded projects, etc. In terms of field-weighted citation impact, **PolyU ranks no. 8 among THE World Top Universities Leading AI Research, also no.1 among universities in Hong Kong.**

Prof. Cao Jiannong, Chair Professor of Distributed and Mobile Computing of the Department of Computing has been granted food safety related government funding for tackling grand challenges in food safety: a big data and IoT enabled approach (Hong Kong RGC Research Impact Fund), and for multi-stage big data analytics for complex systems: methodologies and applications (Hong Kong RGS Collaborative Research Fund), both of which with Prof. Terence Lau as project co-investigator.



Establishment of The Suga Research Laboratory for Sustainable Urban Green Agriculture

On 21st of August 2019, PolyU received a generous donation from Suga International Holdings Limited (SUGA) for the establishment of Hong Kong's first research platform focusing on Urban Agriculture. The Suga Research Laboratory for Sustainable Urban Green Agriculture is operated by FSTRC. Apart from developing indoor hydroponic technology, the Laboratory will also establish a Core Technology Exchange Platform for promoting knowledge transfer in Urban Agriculture and enhancing the competitiveness of the industry. Aspiring to serve as an information hub to make greater contributions in Urban Agriculture development in Hong Kong, the Greater Bay Area and the Mainland, the Laboratory will help foster a "Healthy Eating" culture and safeguard public health.

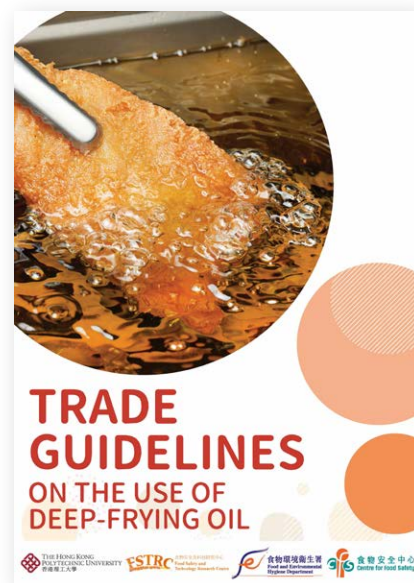


Launching of the Food Hygiene Standard Certification System (FHSCS)


FSTRC has applied its expertise in food safety to develop the comprehensive FHSCS. Being the first of its kind and tailor-made for local catering establishments, FHSCS enables caterers, especially the small and medium-sized, to acquire certification with minimum resources. It is expected to help enhance both food hygiene and safety standards by reducing foodborne risks and food poisoning, thereby protecting public health and enabling the diverse development of the catering industry. Local restaurants can now apply for FHS certification through one of the licensed certification bodies: Hong Kong Quality Assurance Agency (HKQAA), Intertek or SGS.

Development of Trade Guidelines on the Use of Deep-Frying Oil

Studies have shown frying oil that is overly reused can have undesirable flavours and smell, which in turn will lead to suboptimal quality of deep-fried food. Deterioration of deep-frying oil is more likely to happen in food premises that frequently deep-fry food. Consumption of repeatedly used frying oil may have adverse health effects such as gastrointestinal distress and cardiovascular diseases. On the contrary, if frying oil is used properly, not only the flavour of food could be elevated but the amount of oil used could also be reduced. Working with the Hong Kong Government, FSTRC assists local food premises to ensure deep-frying oil quality by providing suggestions on good practices of using frying oil. By conducting different experiments and organizing industrial consultation forums, the trade guidelines balanced the safety and industrial concerns on using deep-frying oil. It has been published at Centre for Food Safety (CFS), HKSAR Government website on 22 October 2019.







Exchanges and Exploring Synergies

PolyU has established solid, multidimensional and interactive relationships bridging the circles of the experienced research experts from the academia together with the pace-setting entrepreneurs and professionals from the industry. We are keen to encourage PolyU research community to come up with innovative ideas and facilitate the upbringing of them into high-impact research. Apart from achieving it through efforts and resources from individual units, we also strive to explore the possibility in conducting translational research across various disciplines and foster partnerships among universities, governments and industry to tap on the synergies invigorated by collaborations.



Exchanges with Regional, National and Supranational Bodies, Government and Regulatory Agencies

Globalization of food trade leads to more technology challenges at the global level and indications on public health. FSC constantly reaches out to regional, national and supranational bodies for engagement and promotion of Hong Kong's efforts and capabilities, such as those on food fraud and food authenticity, genome sequencing and applications on food safety, standards development, antimicrobial resistance, and biological and chemical contamination. Exchanges with representative organizations and agencies including the China National Center for Food Safety Risk Assessment, Chinese Academy of Agricultural Sciences, European Institute of Innovation and Technology (EIT), European Food Safety Authority (EFSA), DG Sante, Interpol, Food and Agriculture Organization of the United Nations, WHO/FAO INFOSAN, etc. bring to the global arena the potential contribution Hong Kong can take part in boosting innovation and technology application.



PolyU actively conduct meetings and organize seminars with governments and consulates such as the Ministry of Enterprise and Innovation, Sweden, Consulate General of Sweden in Hong Kong, Tekes (the Finnish Funding Agency for Innovation), the Consulate General of Finland in Hong Kong, Agri-Food & Veterinary Authority of Singapore to highlight the university's research excellence and commitment in food safety area and promoting concerted efforts in tackling food safety challenges through collaboration.



World Food Safety Day

FSC was invited to share our views in the inaugural meeting of World Food Safety Day (WFSD) which took place at the United Nations Headquarters in New York. We stressed the importance of multi-disciplinary collaboration and academia's role on technology innovation to tackle emerging food safety challenges. The WFSD was adopted by the United Nations General Assembly and first launched on 7 June 2019. WHO and FAO will facilitate Member States' effort to celebrate WFSD for the years to come to enhance global awareness on food safety.



Global Food Safety and Technology Forum (GFSTF) & GoFood Conference Series

Hosted by PolyU, GFSTF 2016 was an influential food safety forum in the city, gathering 40 reputable speakers from local and overseas with over 250 global industry players, to encourage pragmatic exchanges among the industry, government and academia on how to enhance global readiness and technical competence in tackling food safety problems. GoFood 2017 took place at Lund University in Sweden and Technical University of Denmark, and GoFood 2019 took place at Bologna, Italy. The conference series contributes to our holistic understanding of food safety and quality concerns throughout different regions of the world.



China International Food Safety & Quality (CIFSQ) Conference + Expo

PolyU and FSC continuously participate in the CIFSQ Conference + Expo. with Convener Prof. Terence Lau delivering plenary keynote speeches to share views on food safety and food authentication to almost 1,000 senior food safety Government authorities and industry leaders from mainland and overseas; FSC and PolyU professors also share the latest technologies in breakout sessions.



Global Food Safety Conference / GFSI Conference

FSC was invited to speak at the Global Food Safety Conference (GFSC 2018), an annual event organized by the Global Food Safety Initiative (GFSI) bringing together over 1,000 leading food safety specialists from over 50 countries to address food safety issues. Prof. Terence Lau, Convener of FSC shared in "Food Fraud Compliance Challenges and Successes" to illustrate the application of specific countermeasures in actual food fraud incidents.



Empowering Global Food Safety – Collaborative Research Seminar and Workshop

The Empowering Global Food Safety Collaborative Research Seminar and Workshop was the debut event of FSC, attended by over 150 members from the academia, industry, and government bodies. Professor Jørgen Schlundt, former Director for Department of Food Safety and Zoonoses at the World Health Organization (WHO), delivered a public lecture on the most imminent food safety threats and the prioritization of tackling such threats with new global initiatives. With the concerted efforts of all food safety stakeholders, the event kicked off a series of milestones contributing to the sustainable development of the FSC.



FSC Industry & Academia Exchange Workshop - Food Supply Chains Management with the Massachusetts Institute of Technology (MIT)

The “FSC Industry & Academia Exchange Workshop - Food Supply Chains Management” was hosted by FSC and co-organized with Hong Kong Science & Technology Parks Corporation (HKSTP). The workshop attracted more than 50 industry stakeholders, featuring MIT experts to share their collaborative efforts in food safety, and how the academia and industry can join hands to address risks and development of innovative solutions towards better food safety.



10th International Symposium on Nutrition Aspects of Osteoporosis

Organized by FSTRC, Purdue University (US), Deakin University (Australia) and University Hospital Zurich (Swiss), the 10th International Symposium on Nutrition Aspects of Osteoporosis was held on 28 November to 1 December 2017 in Kerry Hotel, Hong Kong. As the only regular meeting in the osteoporosis field to be exclusively devoted to nutrition, bone and muscle, it allows us to review the new scientific data, discuss new concepts, and update the knowledge on several nutrients. This symposium provides a unique opportunity to connect health professionals, researchers and industry across many disciplines, including nutrition and dietetics, exercise science, gerontology, nursing, general practice, academia and the food and fitness industry around the globe.





Other Local and Regional Events

FSC speaks and participates in various local and regional conferences such as iFOOD 2019: Advancing food security, safety, and sustainability held in Singapore, GS1 Food Safety Forum in Hong Kong, Foods Future Summit in Hong Kong, Food Safety International Cooperation and Innovation – Hengqin Forum, and many others that feature audiences from different sectors and spaces of the food industry, to promote the importance of innovation and technology in advancing food safety.



Industry Engagement

PolyU actively maintain dialogues and conduct research projects with the industry through introducing food safety related platforms and initiatives and encouraging partnerships. Exchanges with industry leaders such as Coca-cola, Nestle, McDonald's, Mengniu, Danone, BRF, Walmart, and our other corporate members foster closer and more open communications among stakeholders and accelerate the adoption of cutting-edge innovations and best practices in the industry.



A close-up photograph of a laboratory setting. A hand wearing a blue nitrile glove holds a clear plastic pipette, dispensing a single drop of orange liquid into one of the wells of a clear plastic multi-well plate. The plate is filled with other wells containing orange liquid. The background is a blurred blue and white, suggesting a laboratory environment with bright lights.

Partner State Key Laboratories

a. State Key Laboratory of Chemical Biology and Drug Discovery (The Hong Kong Polytechnic University)

The State Key Laboratory of Chemical Biology and Drug Discovery (formerly as Partner State Key Laboratory of Chirosciences) has been working on drug discovery and synthesis for many years. The first drug developed by the Partner State Key Laboratory was a liver cancer drug, which has undergone the phase two clinical trials. A number of catalysts developed for chiral synthesis in this laboratory have been successfully licensed to industries in Hong Kong, the Chinese mainland and overseas. The structure of an important protein related to autophagy and tumour development, Beclin 1, has been determined and the result published in *Nature Communications* in 2012. Articles have also been published in high-impact journals such as *Cancer Research*, *Journal of the American Chemical Society* and *Angewandte Chemie*.



b. State Key Laboratory of Ultra-precision Machining Technology (The Hong Kong Polytechnic University)

Ultra-precision machining technology is one of the most critical research areas in manufacturing technology of advanced optical components and precision mechanical parts for many high-end industries. These include aerospace, biomedical, semiconductor, and precision machinery industries with stringent requirements on the accuracy and tolerance of products down to the nanometer range. The Laboratory is a regional leader in the frontier research it undertakes and in nurturing human resources. It is also the first of its kind in South East Asia and the Chinese mainland to support the industry in pioneering the design and manufacture of freeform elements and optical microstructures for photonics and telecommunication products. According to ISI Web of Knowledge (Thomson Reuters), the project team has authored the highest number of publications in the field of ultra-precision machining, precision optics, precision machining, and freeform measurement.



c. The State Key Laboratory of Chinese Medicine and Molecular Pharmacology (Incubation), Shenzhen

The Key Laboratory focuses on modernized Chinese medicine research, in terms of the pre-clinical studies of drugs or health food. Chemical composition and action mechanisms responsible for the efficacy of Chinese medicine on the prevention and treatment of geriatric and chronic diseases are of focus, and by multidisciplinary researches in analytical chemistry, pharmacology, system biology and other fields, the Key Laboratory aims at demonstrating the science of traditional Chinese medicine using modern scientific approaches and providing related evidence for clinical applications. Located at the Shenzhen Hi-tech Industrial Park with an area of 2,000m², the facility is equipped with state-of-the-art equipment in various functional laboratories such as the Specific Pathogen Free (SPF) Animal Laboratory, Pharmacology Laboratory, Tissue Culture Laboratory, Analytical Chemistry Laboratory and NMR Laboratory.

d. Shenzhen Key Laboratory of Food Biological Safety Control

The Laboratory was set up in Shenzhen in 2011 to conduct food safety testing and research within the Pearl River Delta region, with the aim of upgrading food safety standards with research-based quality assurance. The Laboratory's top priority is to establish risk evaluation and early warning system on food safety, so as to identify and predict the major pathogens causing infections, food poisonings, and outbreaks. The Laboratory also develops novel technologies such as portable DNA biosensors for bacterial pathogen detection, and food packaging technologies with improved performance. The research findings shall be shared for industry reference in identifying high-risk foods and explore measures to tackle related problems.



University Research Facility

a. University Research Facility in 3D Printing (U3DP)

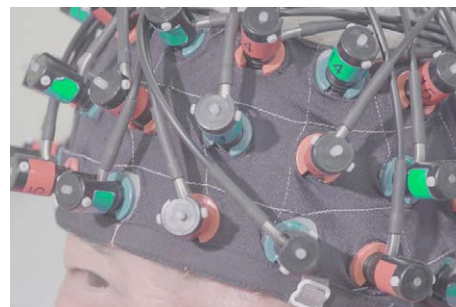
3D Printing, also known as Additive Manufacturing (AM) is a process of producing a physical model layer by layer in accordance with the geometrical data derived from a 3D digital or CAD (computer-aided design) model. Parts (3D objects) made by 3D Printing can be further applied to or post-processed by other technologies or processes to meet different needs and requirements. The use of different and new materials is also expanding the possibilities of 3D Printing applications in manufacturing and the entire world.

The U3DP is Hong Kong's largest research centre in 3D Printing, in terms of range and quantity of facilities. It is also the first and only of its kind among the local higher education institutions, which can provide all-round support to students and researchers to excel their research, works to life.



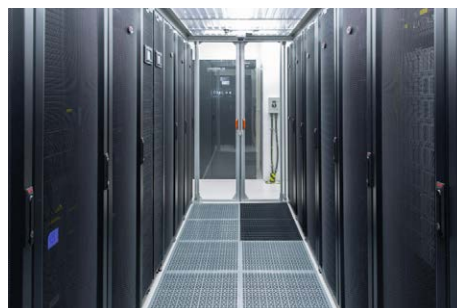
b. University Research Facility in Behavioral and Systems Neuroscience (UBSN)

UBSN plays a primary role in providing state-of-the-art equipment and technological platforms for neuroscientists to conduct high impact studies and train research students. Cross-species and cross-modality research are the key to the UBSN's success. Cross-species research undertakes invasive animal studies to reveal underlying neural mechanisms, and this knowledge is then combined with translational methods to test the findings on human subjects. The ultimate goal is to enable researchers to create and apply knowledge to solve real-life problems in areas such as ageing, child development, neurological rehabilitation, language development and mental health.



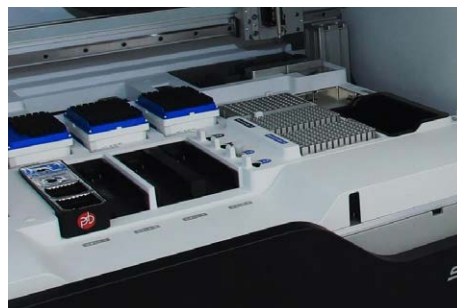
c. University Research Facility in Big Data Analytics (UBDA)

UBDA is the first university-level research facility in Big Data Analytics in Hong Kong for cross-disciplinary research collaborations, teaching, and learning, as well as a partnership with industry. It provides a dedicated, secure, and scalable 24/7 big data platform to store and analyze your data for finding the hidden patterns, exploring unknown correlation, improving prediction, supporting decision making, recommending services, and products and other analytic solutions.



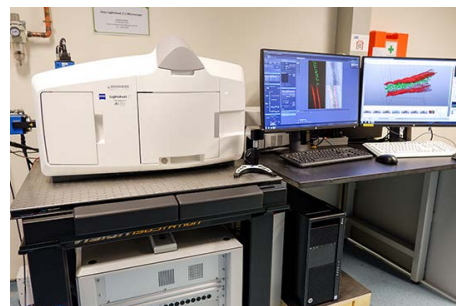
d. University Research Facility in Chemical and Environmental Analysis (UCEA)

UCEA is an interdisciplinary platform between chemical and environmental research, it acquired a total of 18 major equipment ranging from high resolution mass spectrometer, solid state Nuclear Magnetic Resonance (NMR) spectrometer to third generation DNA sequencer and more. The collection of cutting edge equipment encourages the research atmosphere and nurture collaboration from experts in different background.



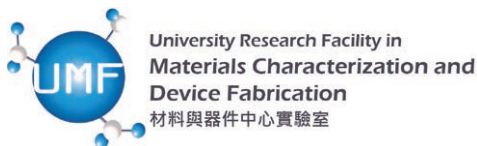
e. University Research Facility in Life Sciences (ULS)

ULS provides state-of-the-art equipment to support PolyU's world-class research in Life Sciences. Workstations supporting stem cell research, immunology, microbiology, molecular biology provide platforms for high-resolution imaging, DNA analysis, metabolite analysis, protein analysis, etc. to facilitate high-impact multidisciplinary life science researches.



f. University Research Facility in Materials Characterization and Device Fabrication (UMF)

UMF consists of four laboratories including Cleanroom, Centre for Electron Microscopy (CEM), Micro/Nano Device Fabrication and Sensing Technologies (DFST) and Materials Research Centre (MRC), which enable a wide variety of disciplinary and interdisciplinary research projects. The laboratories cover topics from Optoelectronic to up-conversion, Ferroelectric to Pyroelectric, alloys to ceramics, polymers to biomaterials, photolithography, device fabrication and measurement, materials synthesis, characterization and processing, etc. to underpin research developments in materials science and technology within PolyU.



Our Food Safety and Quality-related Faculties and Departments

At PolyU, we embrace **collaborative research and development** during our innovation process. Whatever your unmet needs are, we have a team of experts ready to help you tackle your challenges.

Faculty of Applied Science and Textiles

- Department of Applied Biology and Chemical Technology
- Department of Applied Physics
- Department of Applied Mathematics

Faculty of Engineering

- Department of Computing
- Department of Industrial and Systems Engineering
- Department of Biomedical Engineering
- Department of Electronic and Information Engineering

Faculty of Health and Social Sciences

- Department of Applied Social Sciences
- Department of Health Technology and Informatics

The Industrial Centre ... *Multi-disciplinary expertise and technologies under one roof*

The Industrial Centre (IC) of PolyU is the training centre for professional engineers, as well as a one-stop technical solution provider during the innovative process. IC has a large range of technical experts who possess real industrial application experience and knowledge, who are capable of integrating PolyU's multi-disciplinary innovations with the best technical advice and solution for our partners - turning your innovative concepts and ideas into workable industrial design or even real products and systems to meet your special needs.

Contact RIO Today

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