THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (GUANGZHOU)

Function Hub

HKUST(GZ)
Postgraduate Programs
2027-28

funh.hkust-gz.edu.cn

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Welcome

"To unlock the potential of basic elements in hard and natural sciences, and seek advanced and sustainable solutions to address real-world problems, thus benefitting mankind and the advancement of humanity" , the vision of Function Hub defines both our faculties, students, and staffs, motivates our people to progresses along the road to being a world-class scientific research institution, and strive in cultivating integrated talents with independent mind, critical thinking skills, research capability, and relevant domain knowledge highly valued by the scientific, industrial, and technology communities.

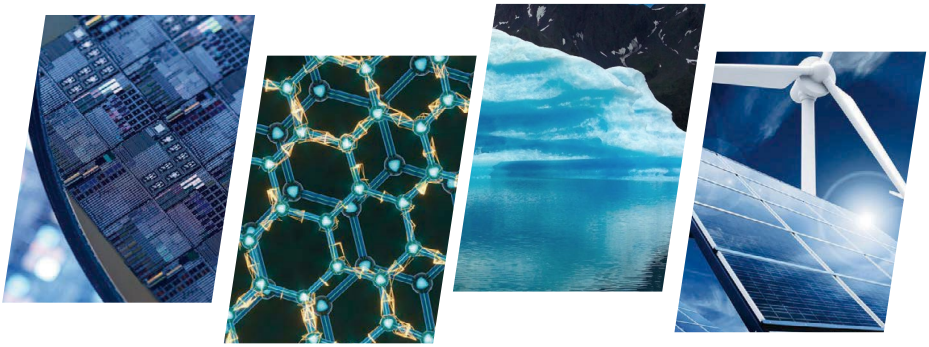
As a cross-disciplinary platform, Function Hub embraces students with strong analytical mind from a diverse set of background. Without restrictions on disciplines, Function Hub is open to students from science, engineering, arts, and business for integrated collaboration.

It is the best time to improve oneself and their research and numerical capabilities as a student. Providing students with high-quality research resources, Function Hub encourages them to make full use of the precious resources and their time, and constantly enhance their academic innovation ability. With the best platform that HKUST(GZ) offers to talk with top minds from across the world, we also actively encourage students to engage with the talent community and get along with them. We hope they can come up with real innovations and become a driven and ambitious talent for the future.

Function Hub will commit to the pursuit of excellence and keep up with HKUST(GZ) to play a vital role to meet the needs of the ever-changing world. We sincerely hope that you can join us to witness and participate in our academic achievements and practical advancements which make a significant impact on society.

Prof. Weijia WEN
Dean of Function Hub

Function Hub



About

Mainly focusing on hard and natural sciences, Function Hub emphasizes basic scientific research, engineering and technology innovation, and technology transfer. Keeping pace with cutting-edge research and significant market demands, it has been a firm supporter to provide a chance to commercialize the research achievements to its members.

While the scope of cross-disciplinary research will serve the national development strategy and respond to market demand, Function Hub focuses in the near term on the following four thrust areas, providing well-rounded curriculums and high-quality education: Advanced Materials (AMAT); Earth, Ocean and Atmospheric Sciences (EOAS); Microelectronics (MICS); and Sustainable Energy and Environment (SEE). And currently Function Hub offers four programs accordingly in Doctor of Philosophy.

All of our regular faculty members hold doctoral degrees from globally prestigious universities. This distinguished team brings together world-class expertise and a strong commitment to research excellence, ensuring that our students receive rigorous academic training and high-level mentorship across all thrust areas.

Function Hub welcomes students with strong analytical mind from a diverse set of backgrounds. It strives to provide an environment to facilitate collaboration among students and between students and faculty members across disciplines and across the Hubs. Function Hub aims to nurture graduates with global perspective, independent mind, critical thinking skills, outstanding research capability, and relevant domain knowledge highly valued by the scientific, industrial, and technology communities. It attracts and nurtures excellent global scholars who are committed to teaching and research, as well as serving as mentors to encourage our students to achieve their full potential.

With the ambition of HKUST(GZ) to transform education for the future, Function Hub aspires to be a leading center with world-class scientific research and education.

Enquiries

funhadmissions@hkust-gz.edu.cn

Advanced Materials Thrust

amat.hkust-gz.edu.cn

Introduction

Advanced Materials, concerned with the structure and properties of materials, are enablers for existing and future technological innovations like microelectronics, biomedical devices, sustainable environmental technologies, and quantum computing. Given the interdisciplinary nature and the diversity of materials science and technology, the aim of the Advanced Materials Thrust (AMAT) is to foster close collaborations with Hubs (schools) and Thrusts (departments) to conduct internationally leading research on impactful cutting-edge materials discovery and innovation.

Cross-Disciplinary Focus Areas

Quantum Matter

We explore the fundamental physics and chemistry of quantum systems to translate them into applied technologies. By synthesizing ultracold atoms, metamaterials, and strongly correlated electron systems, we are laying the groundwork for future quantum computing, metrology, stealth technology, and novel soft-matter designs.

Soft Matter

Dedicated to the advancement of green technology, this pillar focuses on the physical chemistry and structural design of sustainable polymers, wide-bandgap semiconductors, and electrochemical materials to solve pressing environmental and energy challenges.

AI Matter

Serving as the digital engine for our Thrust, this pillar develops physics-informed AI algorithms designed specifically to accelerate the discovery, simulation, and design of the materials engineered in our Quantum and Soft Matter pillars.

Facilities

Advanced Materials Thrust is supported by a range of core laboratories and unique platforms, including but not limited to:

- **Hong Kong University of Science and Technology (Guangzhou) Guangdong Provincial Academician Workstation**
- **Guangzhou Municipal Key Laboratory of Materials Informatics**
- **Multifunctional Polymeric Membranes Research Facility (MPMRF)**
- **Wave Functional Metamaterial Research Facility (WFMRF)**
- **Green e Materials Laboratory**
- **Modern Matter Laboratory**

Research Postgraduate Programs

MPhil **Master of Philosophy in Advanced Materials***

PhD **Doctor of Philosophy in Advanced Materials**

The Master of Philosophy and Doctor of Philosophy Programs in Advanced Materials aim to provide rigorous training in both fundamental investigation of mesoscopic and atomic-scale mechanisms and related novel nanostructures, as well as engineering our original research results in various areas such as biomedicals, functional polymers, and smart meta-materials. New pedagogical training will be provided so that research students can acquire specialized and transferrable skills in new materials engineering that serve the related industries.

**Students are admitted centrally through University-based admission to the Master of Philosophy (General) Program. By end of Fall Term, students will declare to enter one of the 16 Master of Philosophy programs offered by the Thrusts.*

Enquiries

MPhil	rbmadmit@hkust-gz.edu.cn
PhD in Advanced Materials	amat@hkust-gz.edu.cn

Earth, Ocean and Atmospheric Sciences Thrust

funh.hkust-gz.edu.cn/earth-ocean-and-atmospheric-sciences

Introduction

The Earth, Ocean and Atmospheric Sciences (EOAS) Thrust aims to become a leading educational and research entity in interdisciplinary studies of land-ocean-atmosphere interactions. EOAS focuses on research topics at the frontiers of these interconnected systems, offering an educational and research program that integrates earth surface science, oceanography, and atmospheric science. This interdisciplinary knowledge in a holistic view of the earth system is essential to achieving and maintaining a sustainable environment under climate change on regional and global scales.

Cross-Disciplinary Focus Areas

Earth System Approach for Tackling Climate Change

Integrates Earth system science across multiple spheres with AI to address climate and sustainability challenges at multiple scales, focusing on mitigation, adaptation, and interactions among the atmosphere, ocean, human systems, and associated biogeochemical cycles.

Atmospheric Science

Combines multi-source observations and numerical modeling to study energy flow, material cycling, and air-land-sea interactions, with a focus on climate dynamics, extreme events, and biometeorology.

Oceanography

Examines physical, biogeochemical, and ecological ocean processes through cross-disciplinary approaches to understand and predict ocean responses to climate change and human activities.

Earth Surface Processes

Investigates coupled interactions of water, carbon, nutrients, and energy across terrestrial, freshwater, and coastal environments to improve estimates of ecosystem services and climate-related fluxes.

Facilities

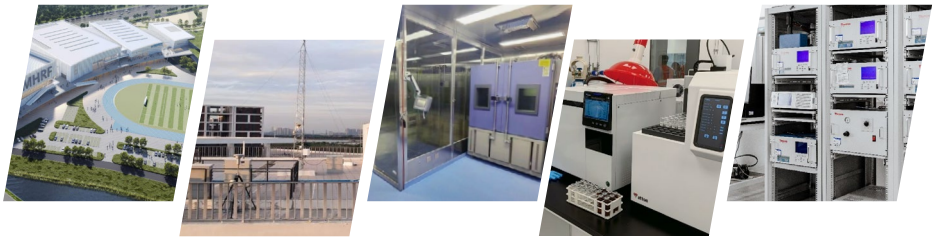
The Earth, Ocean and Atmospheric Sciences Thrust operates a comprehensive suite of state-of-the-art research facilities supporting interdisciplinary Earth system studies.

The Marine Hydrodynamic Research Facility (MHRF) is a world-class coastal and offshore research hub, featuring a deep-shallow combined 3D basin, O-tube flume, 2D wave flumes, PIV flume, and thermal convection flume, enabling advanced ocean dynamics and marine engineering research.

The Sustainable Atmospheric Environment Research Facility (SAERF) comprises the Indoor Environment and Energy Laboratory (IEEL) and the Atmospheric Environment Observation Station (AEOS), equipped with VOC analyzers, lidar systems, photochemical smog chambers, and environmental simulation chambers for comprehensive air quality and atmospheric chemistry studies.

The Environmental and Earth System Research Facility (EESRF) provides advanced analytical capabilities for water, sediment, and biogeochemical analysis, supporting land-ocean interaction studies.

Additional facilities include the Atmospheric Environmental Risk Characterization and Management Lab (AERCM), the Atmospheric Environment Monitoring Supersite at HKUST Clear Water Bay, and a roof-based LiDAR monitoring system. These facilities collectively enable cutting-edge research across atmospheric, oceanic, and terrestrial domains.



Research Postgraduate Programs

MPhil **Master of Philosophy in Earth, Ocean and Atmospheric Sciences***

PhD **Doctor of Philosophy in Earth, Ocean and Atmospheric Sciences**

The Master of Philosophy and Doctor of Philosophy Programs in Earth, Ocean and Atmospheric Sciences aim to provide rigorous training and research in EOAS that prepare students to face challenges of the changing Earth system and sustainable environment under changing climate in both regional and global scales.

**Students are admitted centrally through University-based admission to the Master of Philosophy (General) Program. By end of Fall Term, students will declare to enter one of the 16 Master of Philosophy programs offered by the Thrusts.*

Enquiries

MPhil — rbmadmit@hkust-gz.edu.cn

PhD in Earth, Ocean and Atmospheric Sciences — eoas@hkust-gz.edu.cn

Microelectronics Thrust

mics.hkust-gz.edu.cn

Introduction

Microelectronics Thrust is committed to pushing the boundaries across various disciplines, fostering cross-fusion and breakthroughs in core technologies, and breaking down barriers between them. We're dedicated to nurturing exceptional talents with a robust foundation in basic theory, the capability to identify and solve scientific problems, the courage to innovate and explore, and a global perspective. Looking forward, we closely align with the needs of our country and industry, continuously enhancing our research capabilities, promoting the transformation of our achievements, fostering innovation and collaboration, and consistently maintaining a leading position in the advancement of microelectronic technology. Our ultimate goal is to establish ourselves as a global leader in education and research.

Cross-Disciplinary Focus Areas

Architecture

Processor, memory, and storage system architecture; reconfigurable architecture; interconnection network; multiprocessor

Circuit and Device

RF/mmWave/THz technology; integrated photonic circuit; novel memory device; quantum device; emerging technology

EDA

Electronic design automation; photonic design automation; hardware-software codesign; modeling and simulation technology

System

· Embedded system; system-on-chip; system-in-package; power management; thermal management
· Quantum computing; neural computing; approximate computing
· Compilation techniques; operating system; system software

Facilities

A total of five research institutes actively involved in research related to the Microelectronics Thrust:

- **Provincial IC Industry-Education Integration Innovation Platform of Guangdong**
- **Guangdong-Macao Joint Laboratory for Modular Chip Design and Testing**
- **Guangzhou Municipal Key Laboratory of EDA**
- **Center for EDA Research**
- **HKUST(GZ)-Dapu Joint Lab**

Research Postgraduate Programs

MPhil **Master of Philosophy in Microelectronics***

PhD **Doctor of Philosophy in Microelectronics**

Microelectronics is a cornerstone of the Information Age. It is concerned with studies in integrated electronic/photonic circuits, system architectures, and design automation. It integrates novel electronic and photonic devices into circuits; architects computing, networking, and sensing systems; and automates their design and optimization.

The Master of Philosophy and Doctor of Philosophy Programs in Microelectronics aim to provide rigorous training in the fundamental theories, key technologies, and industrial practices of microelectronics. Students will be trained to investigate novel electronic and photonic devices for analog and digital circuits; explore advanced architecture for post-Moore's Law computing, networking, and sensing systems; and create intelligent design automation tools and methodologies. The programs will also offer modern pedagogical training to prepare research students with specialized and transferrable skills in post-Moore's Law integrated circuits and systems that serve the industries.

**Students are admitted centrally through University-based admission to the Master of Philosophy (General) Program. By end of Fall Term, students will declare to enter one of the 16 Master of Philosophy programs offered by the Thrusts.*

Enquiries

MPhil	rbmadmit@hkust-gz.edu.cn
PhD in Microelectronics	mics@hkust-gz.edu.cn

Sustainable Energy and Environment Thrust

see.hkust-gz.edu.cn

Introduction

The strategic research areas in Sustainable Energy and Environment Thrust (SEE) include Energy Storage, Efficient Energy Conversion and Processes, Bioinspired Propulsion/Energy, Digital Energy Technology, Carbon Capture and Conversion, Air Pollution Characterization and Control, Toxicity and Exposure Assessment. SEE will pioneer innovative and cross-disciplinary energy research leveraging AI technologies, aiming to uncover major solutions to the problem of climate change. We pursue big, ambitious ideas that re-define what is possible by merging AI with energy and environmental science. SEE faculty's research will push the boundaries of fundamental science, applied science, technology, engineering, art and more, to solve complex cross-disciplinary challenges, as well as develop useful technologies through AI-driven methods, to move them from laboratory to commercial and industrial applications.

Cross-Disciplinary Focus Areas

Energy Storage

We study electrochemical energy storage across the full lifecycle, from materials and manufacturing to application, reuse, recycling and battery safety. Our focus includes lithium-, sodium-, and zinc-ion batteries, redox flow batteries, hydrogen storage, sensing, management systems, and real-world integration.

Bioinspired Propulsion/Energy

Inspired by birds and insects, we design efficient, agile, and stable air vehicles and robots. By learning from natural flyers, we aim to advance biomimetic propulsion for drones, rescue robotics, logistics, and the emerging low-altitude economy.

Efficient Energy Conversion and Processes

We develop clean, efficient power solutions for power supply and IoT systems through high-efficiency perovskite solar cells, hydrogen and fuel cells, advanced batteries, wireless power transfer, and energy harvesting technologies (e.g., triboelectric nanogenerators). Our work also explores self-powered sensors and device optimization to enable lighter, more reliable, and commercially viable low-carbon energy systems.

Carbon Capture and Conversion

We develop advanced materials and process technologies for efficient carbon capture and conversion. By reducing CO2 emissions and transforming captured carbon into useful products, we support climate mitigation and promote a more sustainable, circular economy.

Air Pollution Characterization and Control

We investigate air pollutants and greenhouse gases in outdoor and indoor environments using advanced sampling, analysis, and modeling. Our research also develops control technologies and policy insights to support air quality management and carbon reduction strategies.

Toxicity and Exposure Assessment

We examine how gaseous and particulate air pollutants affect human health by identifying hazards, assessing exposure, and linking pollutant composition with toxicity. This research supports risk evaluation and the development of effective mitigation strategies.

Digital Energy Technology

This area integrates computation, data science, and artificial intelligence to understand and optimize energy technologies from the atomic to system scale. It combines modeling with experiments to improve efficiency, reliability, and sustainability across diverse energy applications.

Facilities

The University has 15 central research facilities and 27 theme-based labs. The Sustainable Energy and Environment Thrust's research activities are supported by multi-disciplinary research facilities. The state-of-the-art infrastructure helps cultivate an innovative research environment and nurture ground-breaking research achievements.
Related research facilities include the Bio-Inspired Engineering Research Facility, Sustainable Atmospheric Environment Research Facility, Brilliant Energy Science and Technology Lab, Atmospheric Environmental Risk Characterization and Management Lab, etc.

Research Postgraduate Programs

MPhil Master of Philosophy in Sustainable Energy and Environment*

PhD Doctor of Philosophy in Sustainable Energy and Environment

The Master of Philosophy and The Doctor of Philosophy Programs in Sustainable Energy and Environment aim to provide solid education and rigorous research training in sustainable energy technologies, as well as prototyping and transferring original research results on our campuses as living lab, to industrial collaborators, and to spin-off companies initiated by our faculties and/or students. The programs will also offer dynamic pedagogical training to equip students with competitive and transferable skills in sustainable energy and environment technologies that serve regional and national industries with a global vision.

**Students are admitted centrally through University-based admission to the Master of Philosophy (General) Program. By end of Fall Term, students will declare to enter one of the 16 Master of Philosophy programs offered by the Thrusts.*

Taught Postgraduate Program

MSc Master of Science in New Energy Science and Technology*

The MSc Program in New Energy Science and Technology cultivates advanced, practice-oriented interdisciplinary talents with professional expertise and independent practical capabilities in the new energy sector. It bridges the gap between academic provisions and the fast-growing demands of the new energy industry, positioning graduates to become leading professionals and innovators in this critical field.

The program enables students to rise to the challenge of developing future sustainable and emerging energy technologies, including solar, wind, bioenergy, and energy storage systems, alongside the principles of energy efficiency and conservation. By involving students in innovative research and real-world projects that tackle current energy challenges, the program fosters creative thinking and independent, complex problem-solving. A distinctive feature of this postgraduate program is the mandatory 6-month industrial internship, which equips students with hands-on industry experience and the ability to solve real-world problems before graduation.

Graduates will gain solid theoretical expertise and hands-on experience, well-positioned for diverse careers in academia, industry and government. They will emerge as next-generation energy leaders committed to advancing interdisciplinary collaboration, supporting the university' s zero-carbon campus initiative, and contributing to a sustainable future.

** Pending MOE approval*

Enquiries

MPhil	rbmadmit@hkust-gz.edu.cn
MSc in New Energy Science and Technology	see@hkust-gz.edu.cn
PhD in Sustainable Energy and Environment	see@hkust-gz.edu.cn

Submit Your Application

Admission Requirements

To qualify for admissions to HKUST(GZ), applicants must meet all of the following requirements. Admission is selective and meeting these minimum requirements does not guarantee admission.

1. General Admission Requirements

For all applicants seeking postgraduate admission

- a **bachelor's degree** from a recognized institution, or an approved equivalent qualification

For PhD applicants (additional to the above)

- a proven record of outstanding performance from a recognized institution or presented evidence of satisfactory work at the postgraduate level on a full-time basis for at least one year, or on a part-time basis for at least two years

2. English Language Requirements

Fulfill the English language requirements with one of the following proficiency attainments [1]:

Proficiency Test	Minimum Score
TOEFL – Internet-based Test (iBT)[2]	80 (for tests taken prior to 21 January 2026) 4.5 (for tests taken from 21 January 2026 onwards)
TOEFL – Paper-based Test (pBT)	550
TOEFL – Revised Paper-delivered Test	60 (total scores for Reading, Listening and Writing sections)
IELTS (Academic Module)[2]	Overall score: 6.5 and all sub-scores: 5.5

[1] *You are not required to present TOEFL or IELTS score if your first language is English, or you obtained bachelor's degree (or equivalent qualification) from an institution where the medium of instruction was English.*

[2] *Refers to scores in one single attempt only. Test at home option is not accepted.*

3. Program-Specific Admission Requirements

Some programs may stipulate additional requirements for admission.

Admission Timeline

2027-28 Fall Intake	
PhD	**21 July 2026 to 15 June 2027 (23:59, GMT+8)** for international applicants **21 July 2026 to 15 July 2027 (23:59, GMT+8)** for Chinese applicants
Red Bird MPhil	Please visit *cft.hkust-gz.edu.cn/admission* for details
Taught Postgraduate	Please refer to the "Application" tab on the *fytgs.hkust-gz.edu.cn/postgraduate-programs* page for details
Admission offers issued	**August 2026 to August 2027** Admission offers will be issued on a rolling basis, according to individual program's admission schedule
Program registration	Mid-August 2027
On-campus registration and New Student Orientation Week	Late August 2027
Program commencement	1 September 2027

2027-28 Spring Intake (exclusively for PhD & MBA Programs)	
Application Period	July 2027 to December 2027 Please check the detailed closing dates at *fytgs.hkust-gz.edu.cn/timeline* and apply well before the respective deadlines
Program registration	Early January 2028
On-campus registration and New Student Orientation Week	Mid-January 2028
Program commencement	End-January 2028

Studentship

Postgraduate Studentship (PGS) for MPhil and PhD Students

- **CNY 10,000 per month**, up to **2 years** for full-time MPhil students
- **CNY 15,000 per month**, up to **4 years** for full-time PhD students

Tuition Fees

Research Postgraduate Programs

MPhil/PhD (with PGS) Full-time

- CNY 60,000 per academic year

PhD (self-financed) Full-time/Part-time

- CNY 150,000 per academic year

Taught Postgraduate Programs

- **Fees vary for each program.** Please refer to fytgs.hkust-gz.edu.cn/programs ("General Information") for details.

The booklet was published in July, 2026.
For the most up-to-date information, please refer to fytgs.hkust-gz.edu.cn

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The Hong Kong University of Science and Technology (Guangzhou)