

# HKUST Knowledge Transfer

Create Impact through Innovation and Entrepreneurship Development



# HKUST Innovation and Entrepreneurship Development

## Strategic Intellectual Property Portfolios

- 2,064 Active Patents/Applications
- No. 1 patent influence metric in China by Nature Index(2022)

## Strong Industry Engagement

- 826 Industry Collaborators
- 173 Active License Agreements
- No. 1 in industry income index in HK (THE ranking 2023)

## Leadership in Entrepreneurship Development

- 91 DeepTech Startups with HKUST Technology License
- 544 Active startups companies incubated

# IMPACT in Industry and Society

- 1,747 Active startup
- HKD400b Economic impact
- 13 Successful exits (11 IPOs and 2 acquisitions)
- 9 Unicorns nurtured
- Addressed COVID-19 pandemic and social issues

# Role of Knowledge Transfer (KT) Units in HKUST

- HKUST Mainland Office (Beijing)
- Blue Bay Incubator (SRI, SHCIRI)
- HKUST Foshan Center for Technology Transfer and Commercialization (FCTTC)
- GZ International Youth Entrepreneur Hub (FYTRI)



1. Industry Contract Research Projects, Testing and Consulting services, Government Tender services
2. Licensing management
3. Execution of startup investment and equity management (108 companies)
4. Managing Startup Zone hosting 20 startups
5. Admin of RAISe+ and TSSSU

1. IP management
2. Industry engagement, technology marketing, and project development
3. Joint Research Units
4. InnoHK Shared Service Center for 4 InnoHK Centers
5. Managing funding programs ~ HKD50m/year
6. KT Policy management
7. Council matters on KT
8. Agreement (NDA/MTA/MoU) review and management

OFFICE OF KNOWLEDGE TRANSFER

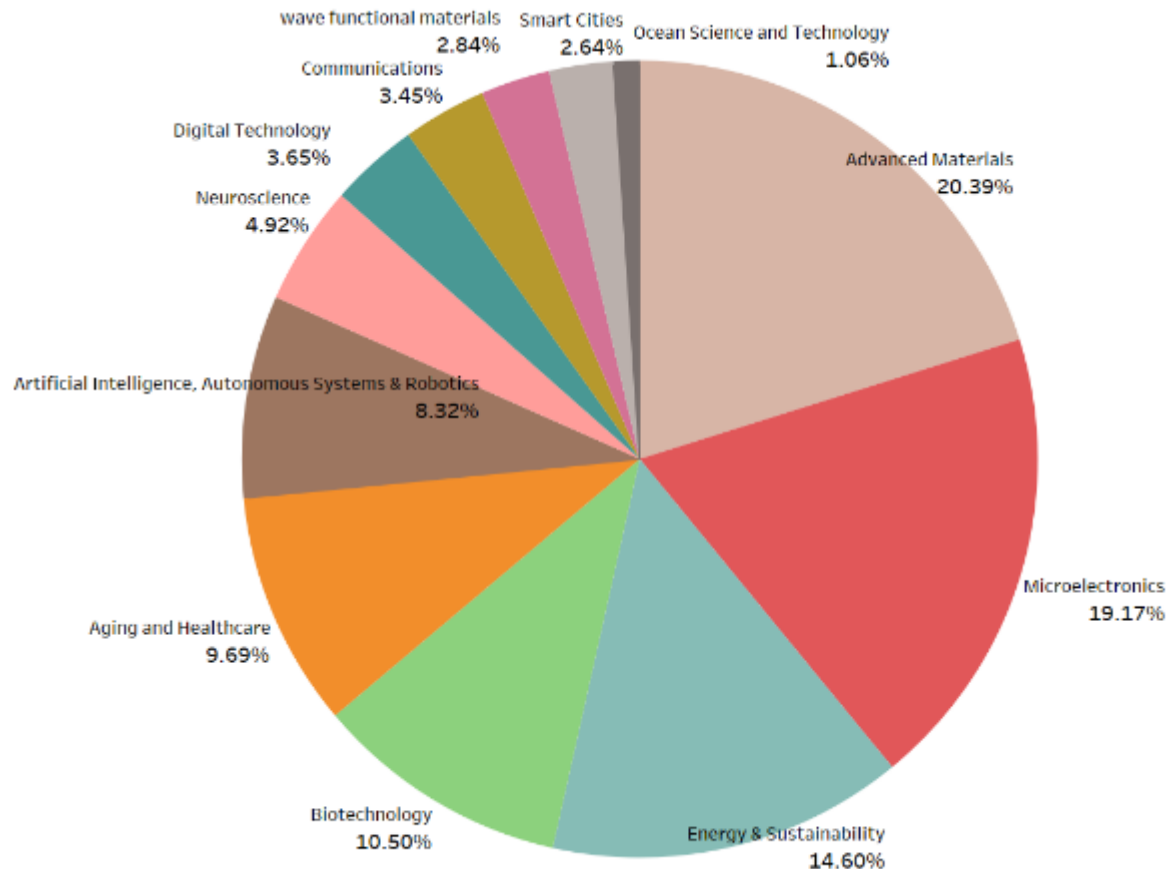
HKUST R&D CORPORATION LTD

ENTREPRENEURSHIP CENTER

1. Entrepreneurship Development Activities
2. Funding programs ~ HKD4m
3. Incubation of HKUST startups at the BASE,
4. Mentorship program and investor network
5. Entrepreneurship training coordinated with schools

# HKUST Strategic IP Management

## Current Active Patent Portfolio by Technology Area



2,064 Active Patents/Patent Applications  
(HKUST and Mainland subsidiaries)

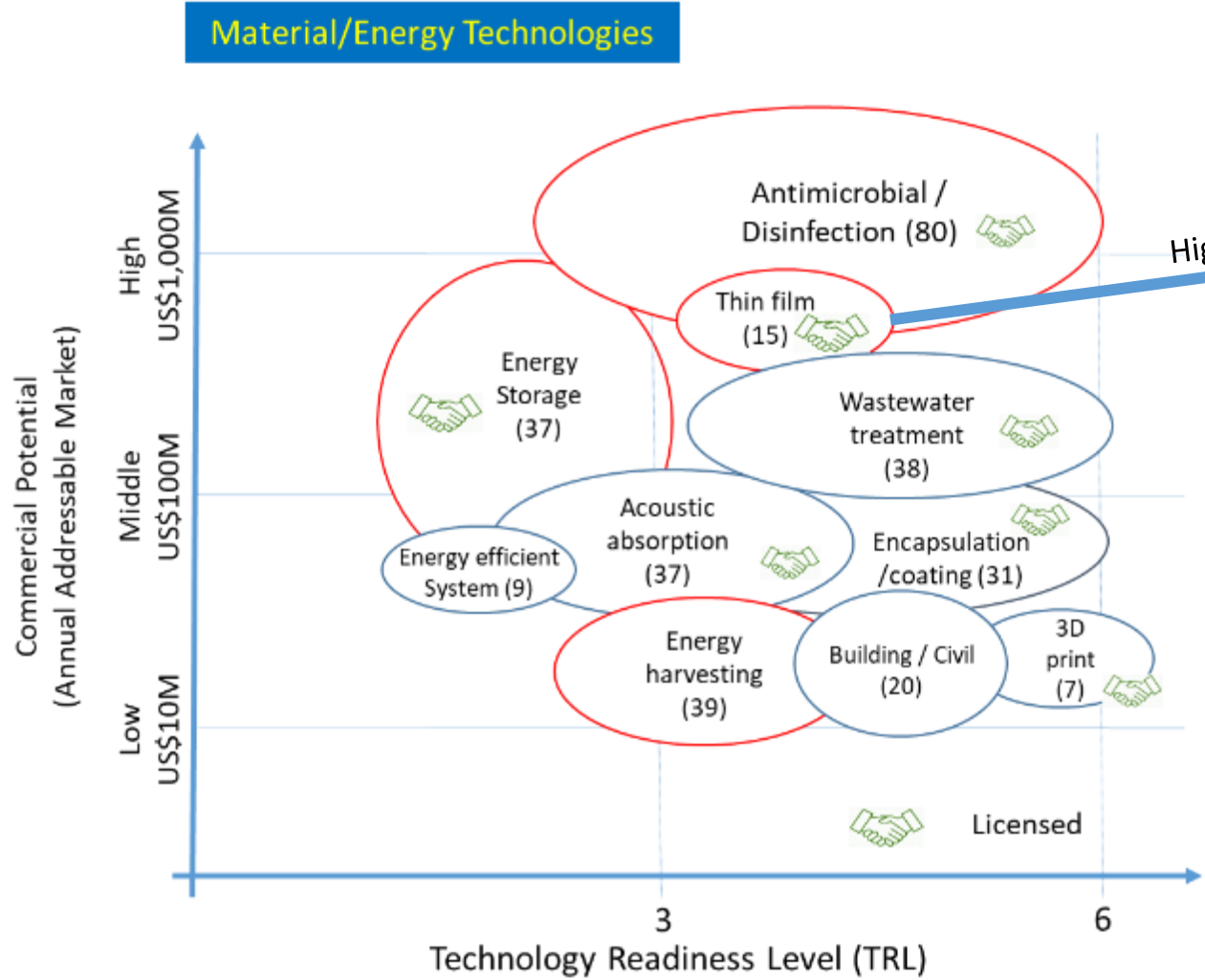
## 1. Excellent Research and Strategic IP management enhanced the IP utilization

- **No. 1 patent influence metric in China** and 33<sup>rd</sup> in global by Nature Index (2022)
- New IP filing 286 and Newly utilized IP 85 in 2022/23 (CWB)
- 553 Patents utilized among 1,603 Patents owned by HKUST CWB campus (**Patent utilization: 33%**)

## 2. Professional IP management team support research

- **Express provisional patent filing in 7 working days**
- IP and industry landscape for key projects

# Technology Portfolio and Commercialization Strategy



Patent / Industry Landscape Analysis

- Key Value Proposition**
- Very high mechanical strength (Tensile strength): 900MPa (2x stronger than stainless steel)
  - Ultra-thin and porous structure: 100nm with 76% porosity

Technology Incubation and Funding  
DeepTech Startups



Non-invasive sweat sensor for muscle fatigue monitoring



Nanofilms fabrication

# Key Innovators in HKUST

No.	Faculty member	Department	No of IP Utilized	No of IP filed	No. of License Agreement Signed ( Since 1999)
1	King Lun YEUNG 	CBE, ENVR	95	169	12
2	Hoi Sing KWOK 	ECE	92	304	11
3	Ping SHENG 	PHYS	65	125	5
4	Nancy IP 	LIFS	60	127	8
5	Ying CHAU 	CBE	36	54	4
6	Gary CHAN 	CSE	35	70	16
7	Zhiyu YANG 	PHYS	33	47	1
8	Man WONG 	ECE	30	100	3
9	Karl TSIM 	LIFS	29	60	13
10	Shaojie SHEN 	ECE	28	28	1
11	He YAN 	CHEM	26	67	2
12	Abhishek Kumar SRIVASTAVA 	ECE	21	62	4
13	Ming LIU 	ECE	21	33	2

No.	Faculty member	Department	No of IP Utilized	No of IP filed	No. of License Agreement Signed ( Since 1999)
14	Weijia WEN 	PHYS	18	66	6
15	Matthew YUEN 	MAE	16	68	4
16	Ping GAO 	CBE	16	32	3
17	Shengwang DU 	PHYS	16	26	2
18	Guanghao CHEN 	CIVL	15	70	6
19	Long QUAN 	CSE	11	25	4
20	Jinglei YANG 	MAE	10	30	4
21	Fu Rong GAO 	CBE	7	10	3
22	Robert KO 	LIFS	6	8	7
23	Che Ting CHAN 	PHYS	5	16	3
24	Zhiyong FAN 	ECE	3	30	2
25	Kevin CHEN 	ECE	3	84	1

# Innovate to Engage the innovation partners

## One to One

Engage a collaborator with a HKUST discipline or a project team

Sponsored Research Projects

Contract Research Projects

Service and Consulting Projects



## One to Many

Engage a collaborator with various HKUST disciplines

Joint Labs



CHIAPHUA INDUSTRIES LIMITED  
捷和實業有限公司



Joint Research Institutes



HONG KONG SPORTS INSTITUTE  
香港體育學院



博智林机器人  
Bright Dream Robotics



Kaisa  
佳兆业  
香港联交所上市企业 1638

## Many to Many

Engage multiple parties and various HKUST disciplines

Industry Consortium



- Engage multiple industry partners in the different value chains of innovation
- Access to world-class academics, facilities and IP in HKUST
- Training for member companies

HKUST-Research Institute-Industry collaboration

- Collaborate with Research Institute to bridge the gap from Lab to industry

# Strong Leadership in 9 Unicorns

No.1 consumer drone company



Mr. Frank Wang,  
Founder, CEO and CTO



Bachelor of Engineering,  
Electronic Engineering  
Master of Philosophy,  
Electronic and Computer Engineering

The Most Innovative Bank in Hong Kong



Mr. Tat Lee,  
Chief Executive and Executive Director

Bachelor of Engineering,  
Computer Science



Leading RoboCar company in the world



Mr. Jianxiong XIAO,  
Founder, CEO

Bachelor of Engineering,  
Computer Science  
Master of Philosophy,  
Computer Science and Engineering



The leader in motion control  
and automation



Professor Zexiang Li,  
Chairman and Co-founder

Department of Electronic and  
Computer Engineering



IPO in 2023

The leader in enterprise class AI



Dr. Wenyuan Dai,  
Co-founder

Doctor of Philosophy,  
Computer Science  
and Engineering



Professor Qiang Yang,  
Co-founder

Chair professor,  
Department of Computer  
Science and Engineering

IPO in 2023

Leading commercial service robot  
company



Mr. Zhang TAO,  
Founder, CEO

Master of Philosophy,  
Mechanical and Aerospace  
Engineering

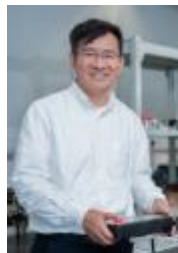


Smart automotive driving for  
commercial vehicles



Professor Zexiang Li,  
Co-founder

Department of Electronic and  
Computer Engineering



An industry-leading supplier of  
CMOS image sensor technology



Dr Chen Xu,  
Chief Executive Officer

PhD, Mphil,  
Electronic Engineering



IPO in 2022

The fastest growing vision companies  
for smart manufacturing



Professor Jiaya Jia,  
Founder and Chairman

Doctor of Philosophy,  
Computer Vision





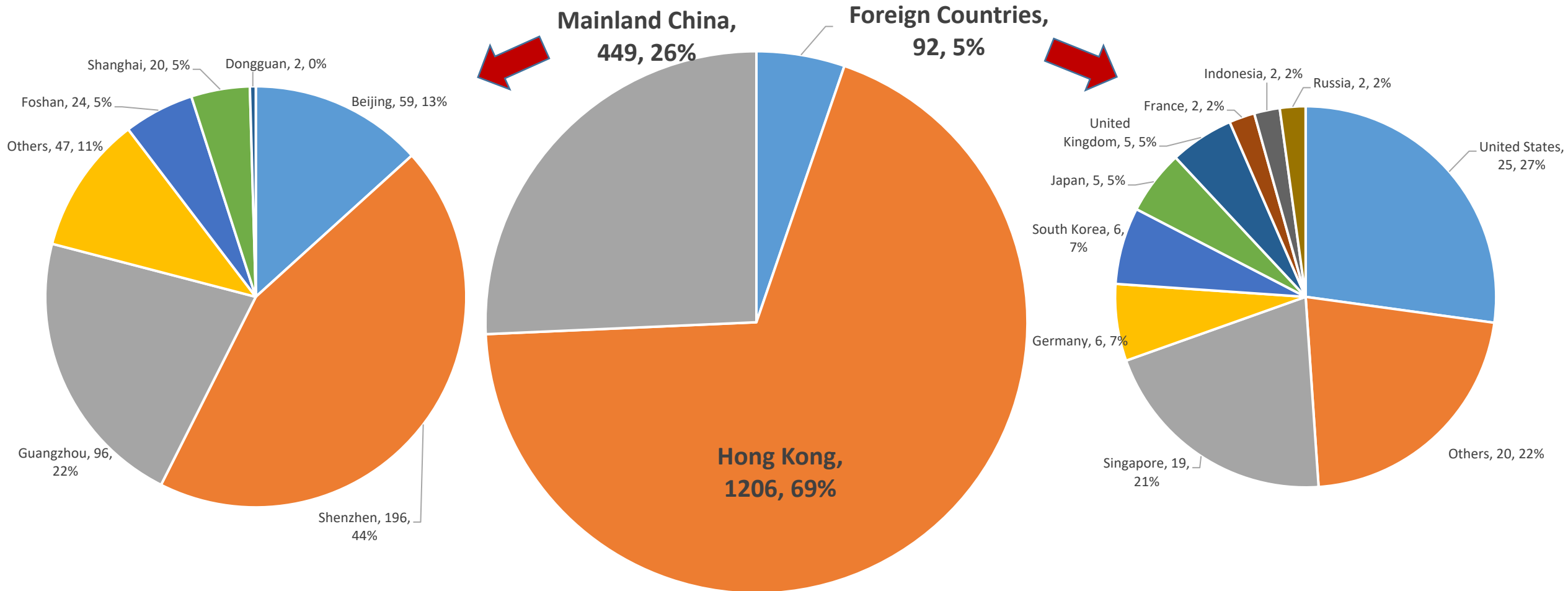
# Strong Leadership in Start-up Development

**Exits**

**Unicorns**

**Fast growing Startups**

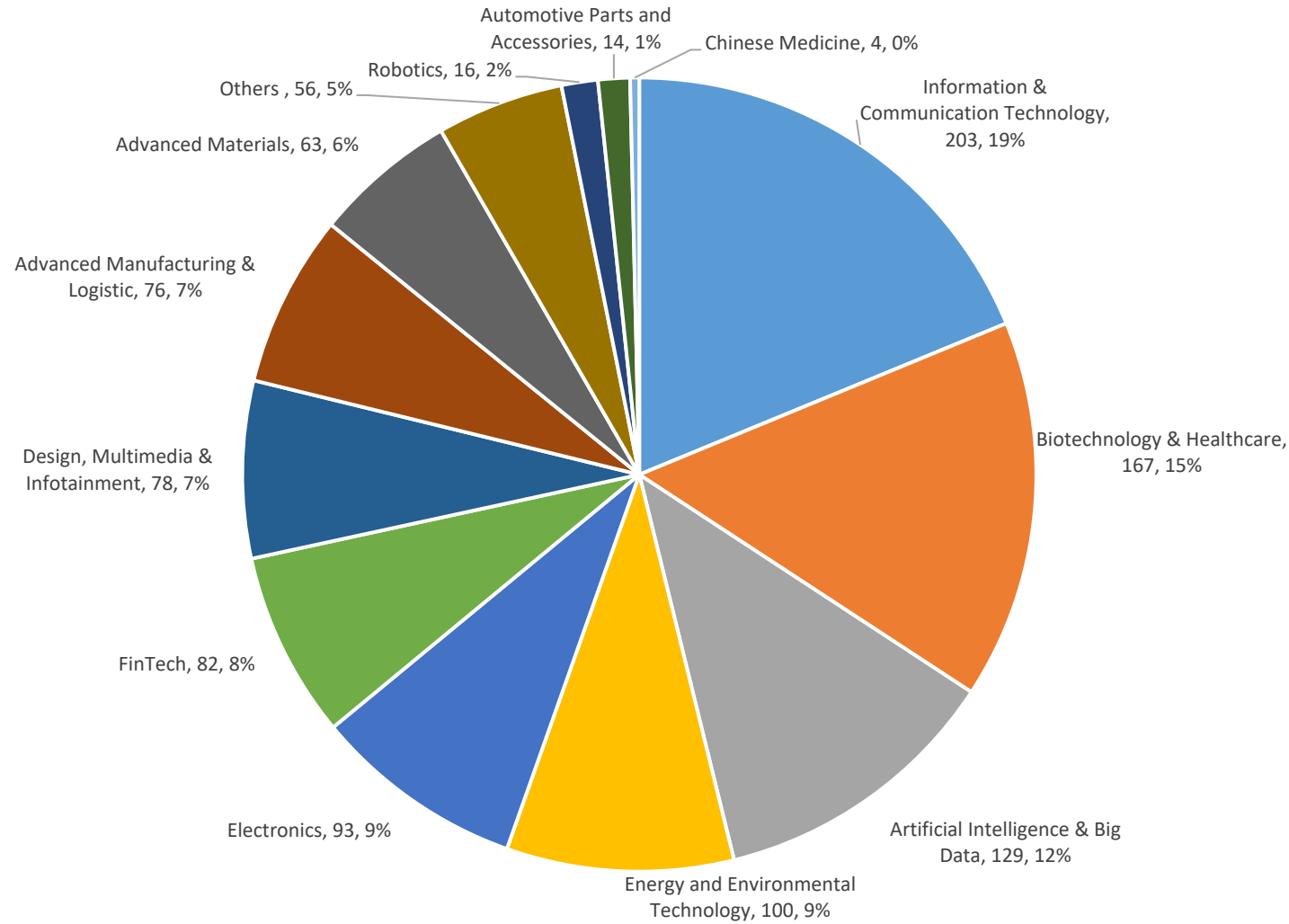
# 1,747 Active HKUST Startup companies



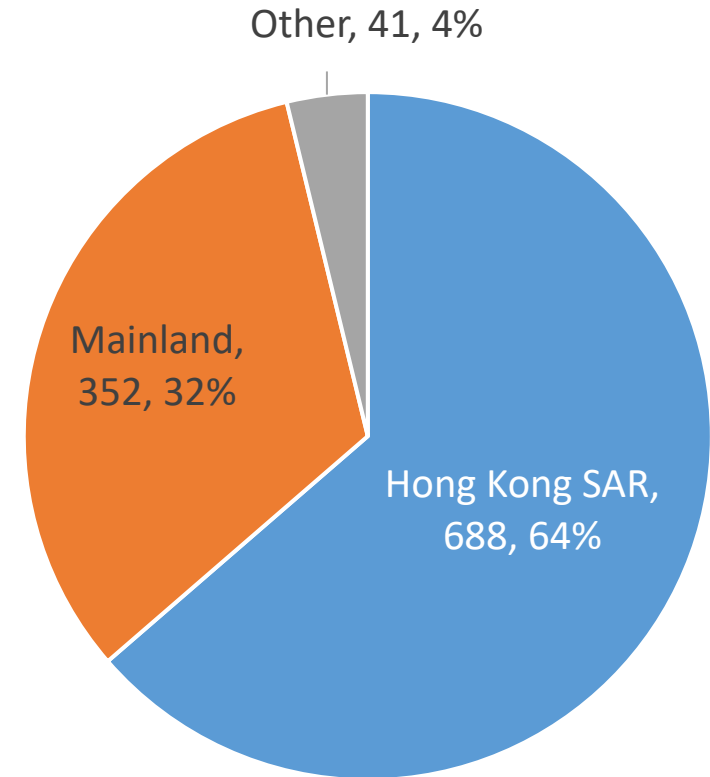
As of Jul 2023

# Profile of 1,081 Technology Startups

62% of Technology-based Startups (1,081 out of 1,747 )



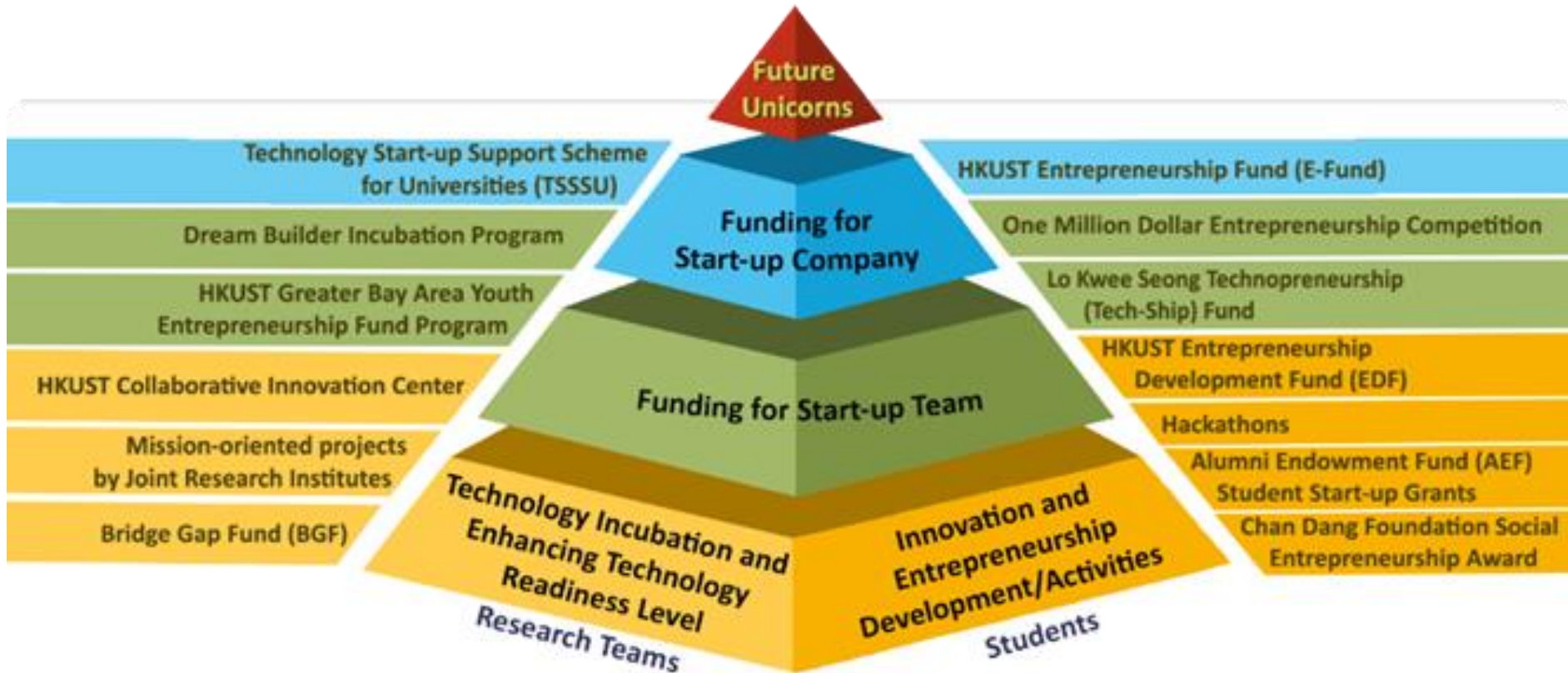
Technology Sectors



Registered Territories

# Innovation, Entrepreneurship and Industry Engagement Strategy

- Synergize funding programs and establish new investment funds to support HKUST innovation and entrepreneurship development, and Start-ups



- DeepTech Incubation - HKUST Entrepreneurship Program; HKUST Startup Zone

# HKUST Entrepreneurship Fund: HKD100m Fund for early stage startups

42 Co-investment partners invested HKD123m



International investment advisors



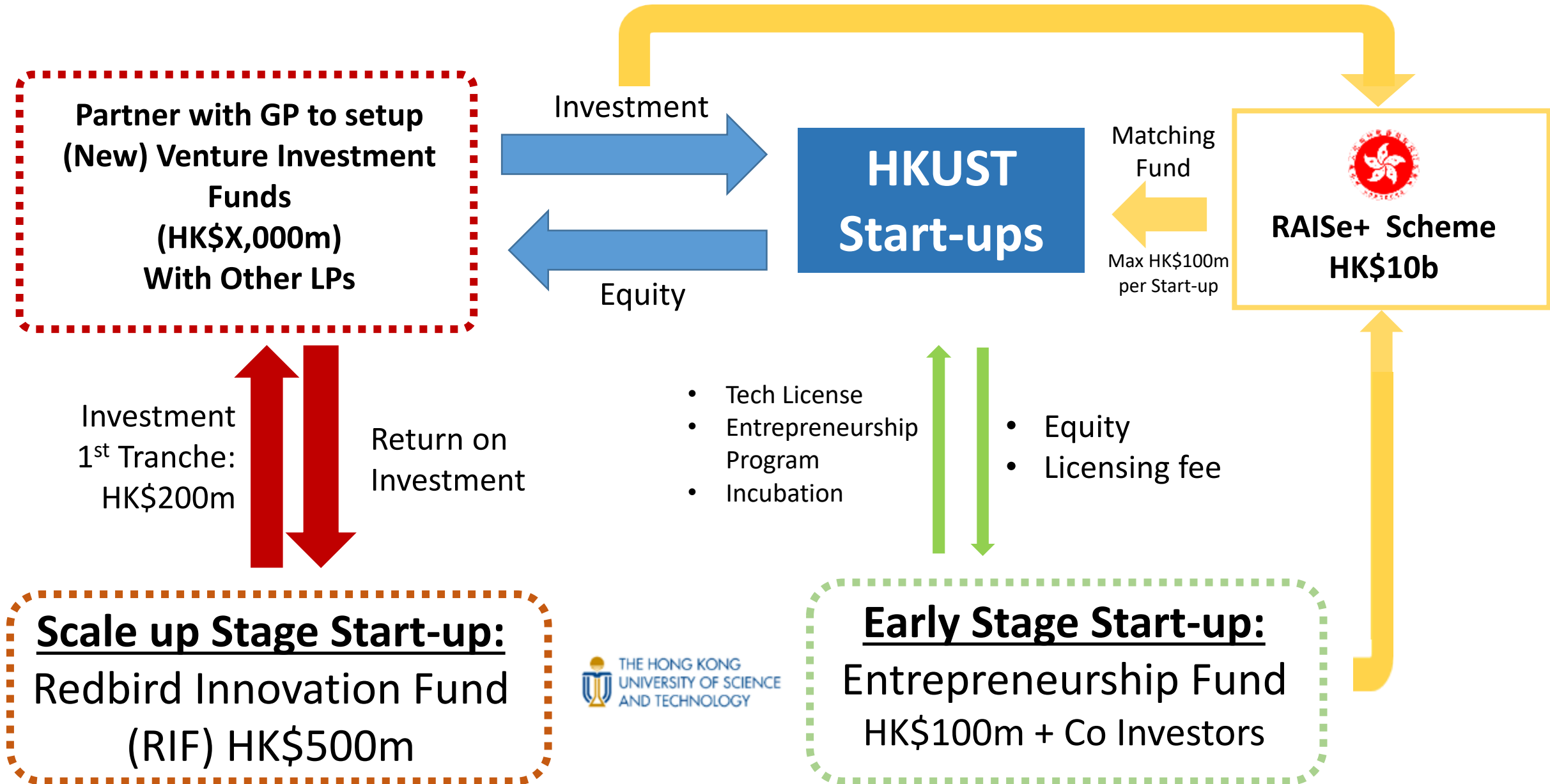
Investment Portfolios: 19 raised HKD397m



- Established in 2020
- > HKD2 billion: portfolio valuation
- 10.3x subsequent investment

# Comprehensive funding for DeepTech Start-ups

Confidential



# HKUST One Million Dollar Entrepreneurship Competition

- Started in 2011 with more than 9,000 startup teams engaged
- Extended to 7 city-level competitions
- RMB60m provided to awardees by 2023



## HKUST-Sino One Million Dollar E Competition (HK)



- 963 startup teams engaged (2018-2023)
- 250 new startups with a total company valuation of HKD813m and subsequent funding of HKD105m



2023 Annual Final

# Key Innovation and Entrepreneurship Activities

## Annual Key Metrics

- 50+ Organized/Co-Organized Entrepreneurship Events
- 20+ Innovation Showcase Exhibitions
- 130+ Awards received from Entrepreneurship Competitions

## Flagship Entrepreneurship Events and Competitions



### HKUST Unicorn Day 2023

- 950+ participants from Government, Industries, and Investors
- 86 technology showcases
- 80 deep tech startups pitching



### One-Million-Dollar Competition

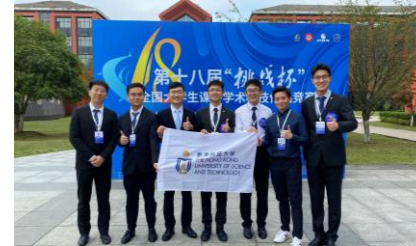
- Over RMB 4.2M Cash Prize with 6 regional competitions
- Record high of 234 team applications in 2023



### hackUST 2023

- 603 participants from 30 countries and regions
- HK\$1 million cash prize and internship

## Strong Performance in Tech and Startup Competitions



- Skyland Innovation got Champion at **EPiC 2023**
- Allegrow Biotech got Winner, AI Guided and Seekr also awarded at **Jumpstarter 2023**
- HKUST startups won 14 awards at **ICT Awards 2023**, 1 Grand award, 4 Gold award, 1 Silver award, 2 Bronze award and 6 certificates of Merit
- 10 teams comprised of HKUST students received most of the awards in **Hong Kong Techathon 2023**
- HKUST won top prize at **18<sup>th</sup> "Challenge Cup" National College Students' Extracurricular Academic Science and Technology Contest**
- 3 HKUST Startups have been listed in **Forbes Asia 100 to Watch 2023**



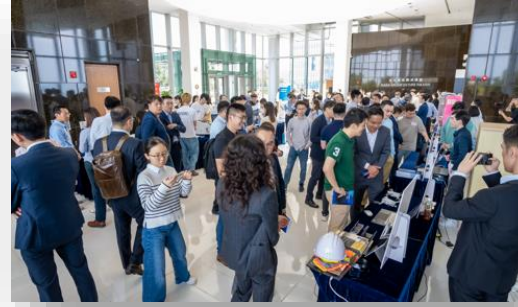
# Key Innovation and Entrepreneurship Activities

## International Exhibition of Inventions Geneva



- 19 research teams won 20 awards at Geneva Invention 2023
- 1 Prize of the Chinese Delegation for Invention and Innovation; 3 Gold medals with Congratulations of Jury; 5 Gold Medals; 6 Silver and 5 Bronze Medals

## Industry Engagement Day+



- Attracted 300+ participants
- Theme-based events for HKUST Faculties, industry and investors

## IPI exhibition @Singapore



- Exhibited 4 new technologies in advanced materials, biotech and structural health monitoring

## Experiential Learning on Entrepreneurship



*GBA Trip*



*A-week long Bootcamp*



*Friday Dreamer Series*



*Entrepreneurship 101*



*Entrepreneurial Talk Series*

## Corporate Innovation Summit @Thailand



- Panel discussion on “deeptech incubation”
- Panoptic AI showcased their technologies to South East Asia partners

# Create Impact through Innovation and Entrepreneurship



- Office of Knowledge Transfer: <https://okt.hkust.edu.hk/>
- Knowledge Transfer Hub: <https://kt.hkust.edu.hk/>
- HKUST Entrepreneurship Fund: <https://e-fund.hkust.edu.hk/>
- Entrepreneurship Center: <https://ec.hkust.edu.hk/>
- HKUST: <https://hkust.edu.hk/>

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