HKUST Knowledge Transfer

Create Impact through Innovation and Entrepreneurship Development

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Head (Investment Fund Management)
**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 startups
- HKD400b Economic impact
- 13 Successful exits (11 IPOs and 2 acquisitions)
- 9 Unicorns nurtured
- Addressed COVID-19 pandemic and social issues

As of Jul 2023
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. 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

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. 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
1. Excellent Research and Strategic IP management enhanced the IP utilization
   - **No. 1 patent influence metric in China** and 33rd 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

Material/Energy Technologies

Commerical Potential

Annual Addressable Market

High

US$1,000M

Middle

US$100M

Low

US$10M

Technology Readiness Level (TRL)

3

6

High Density PE

Antimicrobial / Disinfection (80)

Thin film (15)

Energy Storage (37)

Wastewater treatment (38)

Acoustic absorption (37)

Encapsulation /coating (31)

Energy harvesting (39)

Building / Civil (20)

3D print (7)

Licensed

Key Value Proposition

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

Patent / Industry Landscape Analysis

Technology Incubation and Funding

DeepTech Startups

Case of Thin Film

Non-invasive sweat sensor for muscle fatigue monitoring

Nanofilms fabrication
# Key Innovators in HKUST

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<tr>
<th>No.</th>
<th>Faculty member</th>
<th>Department</th>
<th>No of IP Utilized</th>
<th>No of IP filed</th>
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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

**Many to Many**
Engage multiple parties and various HKUST disciplines

**Joint Labs**

**Joint Research Institutes**

**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
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
1,747 Active HKUST Startup companies

As of Jul 2023

**Mainland China, 449, 26%**
- Hong Kong, 1,206, 69%
- Shenzhen, 196, 44%
- Guangzhou, 96, 22%
- Beijing, 59, 13%
- Others, 47, 11%

**Foreign Countries, 92, 5%**
- United States, 25, 27%
- United Kingdom, 5, 5%
- Japan, 5, 5%
- South Korea, 6, 7%
- Singapore, 19, 21%
- Germany, 6, 7%
- Indonesia, 2, 2%
- Russia, 2, 2%
- France, 2, 2%
- Others, 20, 22%
Profile of 1,081 Technology Startups

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

Technology Sectors

- Information & Communication Technology, 203, 19%
- Biotechnology & Healthcare, 167, 15%
- Artificial Intelligence & Big Data, 129, 12%
- Energy and Environmental Technology, 100, 9%
- Electronics, 93, 9%
- Advanced Materials, 63, 6%
- Advanced Manufacturing & Logistic, 76, 7%
- Design, Multimedia & Infotainment, 78, 7%
- FinTech, 82, 8%
- Other, 56, 5%
- Robotics, 16, 2%
- Automotive Parts and Accessories, 14, 1%
- Chinese Medicine, 4, 0%

Registered Territories

- Hong Kong SAR, 688, 64%
- Mainland, 352, 32%
- Other, 41, 4%
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

Partner with GP to setup (New) Venture Investment Funds (HK$X,000m) With Other LPs

Investment

Return on Investment

1st Tranche: HK$200m

Scale up Stage Start-up: Redbird Innovation Fund (RIF) HK$500m

Investment

HKUST Start-ups

Equity

• Tech License
• Entrepreneurship Program
• Incubation

Early Stage Start-up: Entrepreneurship Fund HK$100m + Co Investors

Matching Fund
Max HK$100m per Start-up

RAISe+ Scheme HK$10b

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
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 18th **“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

Experiential Learning on Entrepreneurship
- GBA Trip
- A-week long Bootcamp

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

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/