HKUST Knowledge Transfer
Create Impact through Innovation and Entrepreneurship Development

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Comprehensive Knowledge Transfer Framework in HKUST

Knowledge Transfer Activities

- IP Management/Tech Incubation/Startup Incubation/Industry Engagement/Technology Marketing
- 1,759 Active Patents/Patent Applications
- DeepTech Startup Incubation
  - 60 Spin-offs with HKUST Technologies *
- Industry Engagement and Collaboration
  - 271 companies with 807 projects for last 5 years *
- Technology/Entrepreneurship courses, Funding, events, competitions, training, design thinking, Hackathon, Exhibition
- Entrepreneurship Development
  - 467 startups incubated for last 5 years, around 25% of student engaged

Technology Licensing

- 117 Active License Agreements *

Industry

- IMPACT
  - New Products / Services in the Market to Benefit for Society
  - Startup company to enhance GDP and Job creation (7 Unicorns from HKUST)
  - Change policy and regulations

Faculty

University Research

Invention

176 New Inventions

Entrepreneurship Development

- 467 startups incubated for last 5 years, around 25% of student engaged

* HKUST CWB data for 2020/2021
Strategic IP Management improved IP Utilization

TTC provided IP landscape to key project teams to create better Innovation outcome.

Number of Patent Utilized

- Licensed patent by startup
- Patent licensed to existing company
- Patent used as BIP for collaboration

Note: 3 patents were multiply used in 2020/21

Number of Patent Application over the years

- Advanced Materials, 266, 21%
- Microelectronics, 297, 23%
- Neuroscience, 65, 5%
- Aging and Healthcare, 152, 12%
- Biotechnology, 148, 11%
- Energy & Sustainability, 112, 9%
- Artificial IntelligenceOns, 46, 4%
- Autonomouss Systems...
- Smart Cities, 35, 3%
- Ocean Science and Technology, 19, 1%
- Digital Technology, 48, 4%
- Communications...
- Smart Cities, 65, 5%
There are 18 Unicorns from Hong Kong SAR @2021
HKUST’s Leadership in Entrepreneurship Development

Next Unicorns: Valued > RMB1b
- CloudDeep Technology
- arctic VISION
- 慧·科技
- APT Electronics Ltd.
- HUAKE TEK
- HUAKE TEK
- QKMI
- Unity Drive

Next Surprise
- Pleryon Therapeutics
- Opharmic
- AQUOMON Smart Investment Engine
- AMG Redefining Silence
- SPES TECH
- 海科生物科技
- Ocean Science (Hong Kong) Limited
- dayta
- INTENSEL CLIMATE RISK SOLUTIONS
- 3DK TECH
- AtomSemi
- gense
- SyNCoord

Growing Potentials

• 90 new startups annually
• 20 DeepTech startup with HKUST Technology Licenses @ 2021
• 1,600 Active startups @ 2021
Strong DeepTech Startup Growth in 2020/21

1. Record high 23 new license @2021 license and 20 DeepTech Startup with HKUST license.  
   - UC Berkeley has 15 @2018, MIT 24 @ 2021

2. Strategic Technology Incubation and new initiatives  
   - Bridge Gap Fund  
   - Techship program  
   - TSSSU/Entrepreneurship Fund  
   - IP and Industry Landscaping Analysis

Data source: UGC KT report and communication with other TTOs in Hong Kong
Comprehensive support for Entrepreneurship Development

Entrepreneurship Education

M.Sc. in Technology, Leadership and Entrepreneurship
2 cohorts, (19+35)

Events, Competitions, Incubation Programs, DeepTech Development

- 129 events with 7,675 students participated in 2020/21
- 3 Champions and 3 Awards in City I&T Grand Challenge 2021
- HKUST-GBA Entrepreneurship Fund: HKD9m
- TECH-ship funding: HKD5m
- Bridge Gap Fund: HKD5m
- Entrepreneurship center funding: ~ HKD5m

Investment/Funding to Startup companies

HKD8million, 20 companies per year

HKD50million, 10 portfolio companies

Co-investment partners with HKD7billion investment pool

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ENTR1001</td>
<td>Entrepreneurship 1001: Building Your Own Future</td>
</tr>
<tr>
<td>ENTR2010</td>
<td>Entrepreneurship Mentorship and Readings</td>
</tr>
</tbody>
</table>

# of students taking ENTR courses (>150/year)
## Entrepreneurship Facilities and Funding Support

### Startup Zone

**Entrepreneurship Program @ Startup Zone**
- 10 rooms
- Co-working space
- Hosts 20 companies
- Basic office management services
- DeepTech Incubation program (in preparation)

### The BASE: Student Activity hub

### Category | Name
---|---
**Technology Incubation and Test bedding** | Bridge Gap Fund (BGF)
| HKUST-Kaisa Joint Research Institute
| HKUST Collaborative Innovation Center
| Sustainable Smart Campus Initiatives

**Innovation and Entrepreneurship Development**
| Entrepreneurship Development Fund
| Hackathons
| The Innovation, Creativity & Entrepreneurship Scholarship
| Sustainable Smart Campus Seed Grant
| Chan Dang Social Entrepreneurship Fund

**Funding for Startup Team**
| One Million Dollar Entrepreneurship
| Dream Builder Incubation Programme
| Techship Program, The Lo Kwee Seong Technopreneurship (Tech-Ship) Fund
| HKUST Greater Bay Area Youth Entrepreneurship Fund Program

**Funding for startup company**
| Technology Start-up Support Scheme for Universities (TSSSU)
| Entrepreneurship-fund
**Strong Industry Engagement with various mode**

**Joint Labs**

- [Image of various logos]

**Joint Research Institutes**

- [Image of logos for joint institutes]

**Project based collaboration**

- Contract Research
- Sponsored Research

**Service and Consulting Projects**

**Joint Application to ITF Funding**

- ITSP, PRP, PSTS

**Industry Contract Research**

- HKUST conducted **807 Projects with 271 companies** in 2015/16 ~ 2020/21
- It enhanced University’s research relevance with Industry and contributed companies’ product development

**HKUST-Bright Dream Robotics Joint Research Institute**

- Total 47 projects approved with HK$96M by Aug 2021
- Key areas: construction robotics, advanced materials, IoT, Fintech and Healthcare
- Student internship opportunities with industry partners

**HKUST-Kaisa Joint Research Institute**

- Total 47 projects approved with HK$96M by Aug 2021
- Key areas: construction robotics, advanced materials, IoT, Fintech and Healthcare
- Student internship opportunities with industry partners
Technology Portfolio (ICT, AI and Fintech Technology)

Key Focused Area:
1) Vision and Graphics
2) AI; Machine Learning; Pattern Recognition
3) Big Data; Information Visualization

Future Expansion on Patent
Profile of Patents in ICT, AI and Fintech Technology

<table>
<thead>
<tr>
<th>ICT &amp; Software related Patents</th>
<th>74</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Patents</td>
<td>74</td>
</tr>
<tr>
<td>No. of Patents Licensed</td>
<td>16</td>
</tr>
</tbody>
</table>

Legend

AI / Big Data related patents

New

Legend

- PHYS
- OP
- MATH
- MAE
- IPO
- IEDA
- FYTRI
- ECE
- CSE
- CIVL

Patent under IoT and Communication (filing date after 2010)
Profile of Software Disclosure & Licensing

ICT & Software related Patents

1. No. of Software Disclosure Form: 47
2. No. of Patents Licensed: 8
3. Top 3 Contributor in Software Disclosure:
   - Prof CHAN Shueng Han Gary
   - Prof Ming Liu
   - Dr. Min Gao

SOFTWARE DISCLOSURE USAGE (17%)

- Licensed, 8
- Others, 47

Department vs Number of SDF - Total 47

- CSE: 19
- ECE: 14
- FYTRI: 3
- IEDA: 2
- ISOM: 2
- CIVIL: 2
- FYTRI: 1
- Life Science: 1
- MAE: 1
- ISOM: 1
- CBE: 1

Total
HKUST Express Licensing Platform

Commercialization of Software Research Output
Source code or Compiled Software
IP Solely owned by HKUST
License by industry for product development

https://exp-license.hkust.edu.hk/
Create Impact through Innovation and Entrepreneurship

Thank you!

Useful links

- KT Hub https://kt.hkust.edu.hk/
- Entrepreneurship Center https://www.ec.ust.hk/node/416
- SUSTAINABLE SMART CAMPUS AS A LIVING LAB https://ssc.hkust.edu.hk/
- HKUST Central Research Facilities https://vprd.ust.hk/Research-Infrastructure/Central-Research-Facilities
- RESEARCH INSTITUTES https://vprd.ust.hk/Research-Infrastructure/Research-Institutes
- Funding https://kt.hkust.edu.hk/hong-kong