創 新 科 技 署
Innovation and Technology Commission

ITC e-newsletter

March 2020

ITC Highlights

New I&T initiatives support enterprises and fight against the epidemic with the public

Mr Paul Chan, the Financial Secretary, delivered the 2020-21 Budget on February 26.

Various initiatives in the Financial Secretary's proposal in the 2020-21 Budget are beneficiary to the Innovation and Technology (I&T) industry. These include increasing the Government's funding ratio in the Technology Voucher Programme (TVP) to further reduce the investment by local enterprises in using technological services and solutions. The ceiling of the funding and the number of approved projects will also be raised to $600,000 and six projects respectively. Secondly, $40 million will be set aside to subsidise short-term internships for undergraduates and postgraduates taking STEM programmes in local universities, with a view to sustaining the I&T talent pool of Hong Kong. Thirdly, the Government will consolidate the Researcher Programme and Postdoctoral Hub to provide more flexibility for engaging research and development (R&D) talent. Moreover, $3 billion is earmarked for the Phase 2 of the Science Park Expansion Programme, aiming to provide more space for R&D activities and unleash opportunities for technology enterprises.

On the aspect of the prevention and control of the novel coronavirus outbreak, the Government has set up a $30 billion "Anti-epidemic Fund" (the Fund) to enhance the capability of combating the novel coronavirus epidemic and provide assistance to enterprises and the public affected by the outbreak.

Mrs Carrie Lam, Chief Executive (back row, third left), accompanied by Mr. Nicholas Yang, Secretary for Innovation and Technology (back row, second left), visited the LSCM to learn about the production of electronic wristbands for the Government's home quarantine measures.

Currently, the demand for surgical masks in Hong Kong has increased drastically, despite a shortage in its global supply. Local I&T research and development has a role to play in the recent anti-epidemic work. For example, the Nano and Advanced Materials Institute (NAMI) has authorised a mask manufacturer to use its patented nanofiber technology to produce a highly breathable mask that is capable of killing bacteria. In order to facilitate the setting up of more mask production lines in Hong Kong, the Hong Kong Productivity Council (HKPC) has actively contacted the industry to provide technical support, while the Hong Kong Science and Technology Parks Corporation (HKSTP) provides facilitation for making available factory space that meet the required standards. Apart from the production of disposable masks, the Government is also exploring applied technology solutions in relation to mask reusability.

In addition, given the possibility of a rising number of people under home quarantine, the Government has been aggressively looking for more effective monitoring solutions and leveraging on local R&D for anti-epidemic work. Aside from contacting people under home quarantine through mobile applications, the Government has also used the electronic wristband invented by the Logistics and Supply Chain MultiTech R&D Centre (LSCM) to enforce home quarantine measures. LSCM is continuously enhancing the product and increasing the production volume.

The Government understands that technology companies, especially startups may be affected by the epidemic and the unstable external economic environment. To this end, the Fund will provide tenants and startups at the Hong Kong Science Park, industrial estates and Cyberport with a six-month rental waiver. About 1,800 tenants are expected to benefit from the Fund.

ITC introduces enhanced Technology Talent Admission Scheme

On January 30, the Innovation and Technology Commission (ITC) launched the enhancement measures of the Technology Talent Admission Scheme (TechTAS), expanding the scope of eligibility to all companies conducting R&D activities in 13 technology areas in Hong Kong.

When it was launched in June 2018, TechTAS covered tenants and incubatees of the HKSTP and Hong Kong Cyberport Management Company Limited, which mainly conduct R&D activities in seven technology areas including artificial intelligence, biotechnology, cybersecurity, data analytics, financial technologies, material science and robotics. With the enhancements, TechTAS now covers up to 13 technology areas with six newly extended areas namely 5G communications, digital entertainment, green technology, integrated circuit design, the Internet of Things and microelectronics. The enhanced TechTAS enables companies to benefit from the certainty and streamlined procedures offered by the scheme, and hence, technology talents from around the world could be acquired much faster and easier so as to encourage more cross-fertilisation of local and non-local talent and accelerate Hong Kong's innovation and technology development.

To know more about TechTas and to view the videos of case sharing by successful applicants, please visit https://techtas.itc.gov.hk/.

The enhanced TechTAS enables companies to expedite the acquisition of technology talent worldwide.

Upgraded funding arrangement for Enterprise Support Scheme

The Enterprise Support Scheme (ESS) under the Innovation and Technology Fund (ITF) is designed to encourage private sector investment in R&D. To ease the cash-flow requirements faced by small and medium enterprises (SMEs) and start-ups when carrying out the funded projects, the ITC announced its upgraded funding arrangement for ESS-funded projects on January 31.

Under the new arrangement, ITC will disburse an advance payment of up to 50% of the matching fund approved under the ITF for the first six months, or up to HK$500,000, whichever is lower, to the recipient company upon request and on the condition that the recipient company contributes the same amount on a matching basis. The remaining payment will be disbursed in instalments after the recipient company fulfills the obligations of the agreement. The new arrangement is applicable to applications submitted to the ITC from February 1 onwards.

Further information is available on the ITF website https://www.itf.gov.hk/

HKSTP unveils Robotics Catalysing Centre 2.0 and AI PLUG

Ms. Rebecca Pun, Commissioner for Innovation and Technology (second row, fifth right); Mr. Albert Wong, CEO of HKSTP (second row, fifth left), together with other guests and partner company representatives officiated at the launch ceremony of the RCC 2.0 and AI PLUG.

(Photo Credit: HKSTP)

On January 20, HKSTP launched the Robotics Catalysing Centre (RCC) 2.0 and AI PLUG, which aims to drive the development of artificial intelligence (AI) and robotics as well as their adoption in various industries.

RCC 2.0 is one of the latest robotic technology projects undertaken by HKSTP, which mainly supports robotics-related works. RCC 2.0 is composed of two main laboratories – FlexLab and FabLab. FlexLab allows users to conduct proof-of-concept trials in flexible working spaces and present solutions to potential clients, while FabLab assists users to develop and prototype robotic solutions with the provision of different tools, equipment and materials fabrication services.

AI PLUG provides full support for the development of AI technologies, mainly covering four key areas including the Tech Shop, AI Infrastructure, Corporate Innovation and AI Academy. The Tech Shop, a one-stop support platform, offers professional consultation services to users, including edge applications, cyber security, legal services, sensor advisory and other AI-related technical support.

Partner companies of HKSTP showcased a wide range of A.I.R. related technologies at the launch of the RCC 2.0 and AI PLUG.

(Photo Credit: HKSTP)

Stable increase in Hong Kong's gross expenditure on R&D in 2018

The Government endeavours to invest in developing the I&T industry and promoting local R&D activities. Over the past two and a half years, the Government has spent over HK$100 billion for the establishment and enhancement of the local I&T ecosystem. A number of new initiatives have been introduced to support R&D work by universities and public research institutes, along with new measures to attract and retain talent for R&D work. According to "Hong Kong Innovation Activities Statistics 2018" released by the Census and Statistics Department (C&SD) in December 2019, the gross domestic expenditure on research and development (GERD) of Hong Kong amounted to $24,497 million in 2018, an increase of 10% compared with the corresponding figure in 2017.

More detailed statistics on Hong Kong innovation activities, together with the concepts and methodology, are given in the report "Hong Kong Innovation Activities Statistics 2018" which can be downloaded from the C&SD website: https://www.censtatd.gov.hk/

SCL launches new calibration service for vacuum gauges

The spherical-shaped calibration chamber used for vacuum gauge calibration.

The Standards and Calibration Laboratory (SCL) has set up a facility to provide a calibration service for vacuum gauges in accordance with ISO 3567:2011 Vacuum gauges – Calibration by direct comparison with a reference gauge. The calibration range is from 0.001 Pa to 1000Pa.

The accurate and precise measurement of pressure in a vacuum condition is critical for the fabrication process of many electronic, photovoltaic and other semiconductor devices. Vacuum gauges are instruments commonly used for measuring gas or vapour pressure that is less than the prevailing atmospheric pressure.

The vacuum gauge under test is calibrated by being connected to the same calibration chamber as the reference gauge. To ensure that the distribution of gas in the measuring chamber is sufficiently uniform in space and stable overtime, the calibration chamber is designed as a spherical structure which is the most ideal shape for the vacuum gauge calibration. The gauge readings of the test unit are compared with the pressures indicated by the reference gauge.

For more information about absolute and vacuum pressure related calibrations, please visit the SCL website at www.scl.gov.hk.

Professor Charles Surya has been appointed as Science Advisor of ITC

Professor Charles Surya

Professor Charles Surya has been appointed as Science Advisor of the Innovation and Technology Commission for three years with effect from February 17, 2020. Professor Surya is an experienced electronic engineering expert with a strong track record and remarkable achievements in the research and technology fields of optoelectronics and solid-state materials. Before joining the ITC, he was Vice Provost for Research of Nazarbayev University in Kazakhstan.

FUN with Science

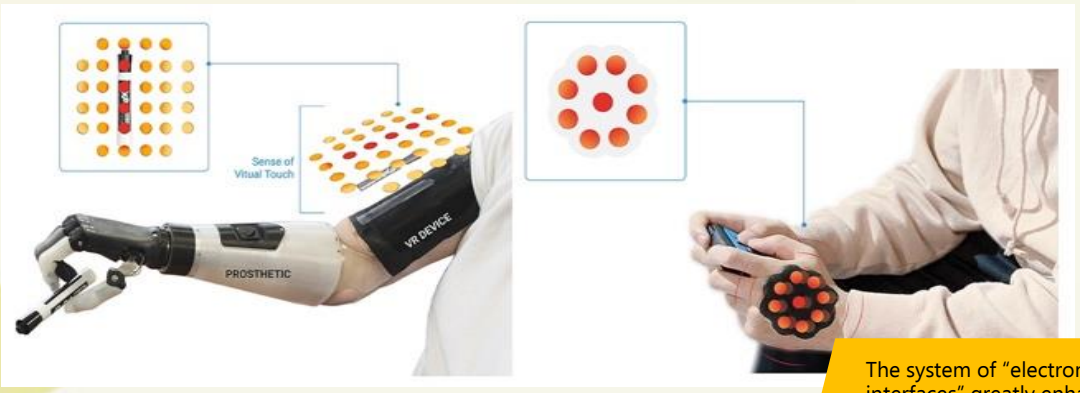
New electronic skin technology developed for users of prostheses

Researchers of the CityU participating in this project.
(Photo Credit: CityU)

Currently, virtual reality (VR) and augmented reality (AR) technologies can create experiences through visual and auditory stimuli. In comparison with the eyes and the ears, the skin is relatively more sensitive to the external environment. Recently, researchers at the City University of Hong Kong (CityU) and other international academic institutions have jointly developed a system of "electronic skin-integrated haptic interfaces" that could greatly enhance the sensory experience for users of prostheses and be applied in social media, gaming and entertainment. Moreover, the system can even be used for developing virtual scenes for clinical applications.

The new electronic skin system – which is lightweight, wireless and battery-free, is made up of more than 700 functional components and has a thickness of less than 3 millimetres – can be tightly stuck to human skin. This novel system uses a wireless actuator to transform energy into mechanical vibrations, so that it can transmit sensory stimuli to the human body. The new system uses radio frequency for a power supply, requiring less than two milliwatts to transmit signals and produce the same level of mechanical vibrations as compared to conventional actuators. Thus, it has solved the difficult problem of transmission by low power wireless function and significantly increased the operating distance for the system.

The research project is funded by the CityU, Northwestern University, National Natural Science Foundation of China and National Science Foundation of the US. After two years of research and development, the achievement of this project has recently been published in Nature, a leading international science and technology journal.



The system of "electronic skin-integrated haptic interfaces" greatly enhances the sensory experience for users of protheses and can also be used for social media, entertainment and gaming.
(Photo Credit: CityU)

ENQUIRIES & COMMENTS

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