創新科技署
Innovation and Technology Commission

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ITC Highlights

52nd Joint School Science Exhibition cultivates interest in science

Group photo of the 52nd JSSEPC members, officiating guests and participating teams at the closing ceremony

The 52nd Joint School Science Exhibition (JSSE) was successfully held at the Hong Kong Central Library, from August 20 to 26. The 7-day exhibition showcased scientific projects by elite teams from different schools, and was open to the public with free entry.

JSSE, a long established annual joint school science activity in Hong Kong, is organised by the Joint School Science Exhibition Preparation Committee (JSSEPC) which comprises students from different schools. It is jointly organised by the Hong Kong Science Museum and Leisure and Cultural Services Department, co-organised by the Innovation and Technology Commission, and with the unfailing support of the Education Bureau and the Hong Kong New Generation Cultural Association. It aims to provide a platform for secondary school students to apply their scientific knowledge in daily lives and arouse public interest in science.

This year, the exhibition featured "Journey" as the key theme. Participants were required to explore innovative ideas in the three aspects of safety, health and comfort, and environmental-friendliness, in order to bring convenience to the public during their journeys. Moreover, participants were encouraged to observe more about their surroundings and to integrate their scientific innovations into real-life applications. The team from St. Joseph's College was awarded the overall champion with their project "Bactricity". Inspired by the junior football team trapped in a cave in Thailand last year, they developed bacterial power generation method by using bacteria or yeast derived from natural materials like sugar in fruits, soil and fruit skins to produce a long-lasting and stable electric current to power up survival tools such as flashlights.

The team from St Joseph's College clinched the overall championship with their project "Bactricity"

In addition to local student teams, JSSEPC also invited overseas representatives from the United States and Indonesia to participate in the exhibition to facilitate academic and cultural exchanges.

Overseas student representatives from Indonesia to participate in the exhibition

Science Theatre demonstrated different interesting science experiments during the exhibition

Chinese Academy of Sciences Youth Internship Programme concludes in Beijing

On July 23, the closing ceremony of the Youth Internship Programme at Chinese Academy of Sciences (CAS) was held in Beijing. This year, the programme had grown to a larger scale with a wider range of research institutes providing more diverse internship opportunities. 49 tertiary students from Hong Kong were assigned to six research institutes under CAS in areas such as artificial intelligence, intelligent robots, autonomous vehicles, mathematics, physics and life sciences.

Organised by the Home Affairs Bureau and co-organised with CAS and the Hong Kong Volunteers Association, the Youth Internship Programme has been running since 2018. Under the six-week internship, students were given opportunities to explore different kinds of top research technologies and methods with guidance and insights from top academicians and researchers.

The closing ceremony of the Youth Internship Programme at Chinese Academy of Sciences was successfully held on July 23, 2019 in Beijing

Mr Nicholas Yang, the Secretary for Innovation and Technology, met with the Hong Kong participants at the closing ceremony

At the closing ceremony, Mr Nicholas Yang, the Secretary for Innovation and Technology, stated, "Through joining the Youth Internship Programme, it provides golden opportunity for students who are interested in entering the field of innovation and technology, to learn from professionals in the Mainland's top scientific research institutes. Students are able to understand the advanced development of science in the Mainland, get first-hand experience of conducting scientific research and learn more about innovative technology application. This programme helps students to gain valuable experience for future careers in innovation and technology." Mr Yang also pointed that Hong Kong has established a solid foundation for its co-operation with CAS. The internship program has signified the exchange and collaboration of innovation and technology between the Mainland and Hong Kong, and has demonstrated our commitment to nurturing talent.

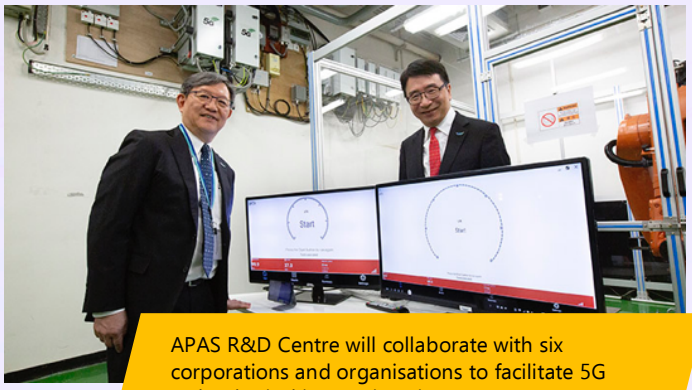
APAS R&D Centre Showcase 2019 features 5G applications in smart mobility

The Automotive Platforms and Application Systems R&D Centre (APAS) of the Hong Kong Productivity Council (HKPC) organised the annual showcase on July 11, 2019. Themed "5G in Smart Mobility", the event gathered local and global experts to share their thoughts and insights on the future development and business opportunities of 5G technology.

During the event, APAS also unveiled a series of new achievements, including the "Autonomous R&D Platform", which is equipped with drive-by-wire capability and an artificial intelligence platform, etc. and is controllable through 5G signal; "Low Speed Autonomous Mobile Platform"; "5G Motion Control Humanoid Robot"; and "SAFE 3.0", a monitoring system for logistics and freight transportation security.

Officiating guests at the opening ceremony
(Photo Credit: HKPC)

Additionally, APAS signed Memorandums of Understanding (MoUs) with six corporations and organisations respectively, including China Mobile Hong Kong, European Automotive Council, The Autoware Foundation, Uisee Technology, Hong Kong Wah For Development Limited and ZTE Corporation. With these MoUs, APAS and the industry will work hand in hand, and continue to pave the way for future technological innovations in Hong Kong.



APAS R&D Centre will collaborate with six corporations and organisations to facilitate 5G technological innovations in Hong Kong
(Photo Credit: HKPC)

5G applications in autonomous vehicles was presented during the showcase
(Photo Credit: HKPC)

Collaboration in development of sensor and wearable technology between HKRITA and European R&D institution INL

The Hong Kong Research Institute of Textiles and Apparel Limited (HKRITA) and the International Iberian Nanotechnology Laboratory (INL) signed a Memorandum of Understanding (MoU) on July 4, strengthening collaboration between HKRITA and INL in the development of sensor and wearable technology.

Leading of sensor and IoT technologies to wearable devices allows monitoring of a variety of biosignals and body related data. Researches in these areas have inspired the development of projects to measure physiological and biomechanical phenomena, which drives the design of new devices and testing methods for the continuous enhancement of wearable solutions. The solutions will play key role in the betterment of life.

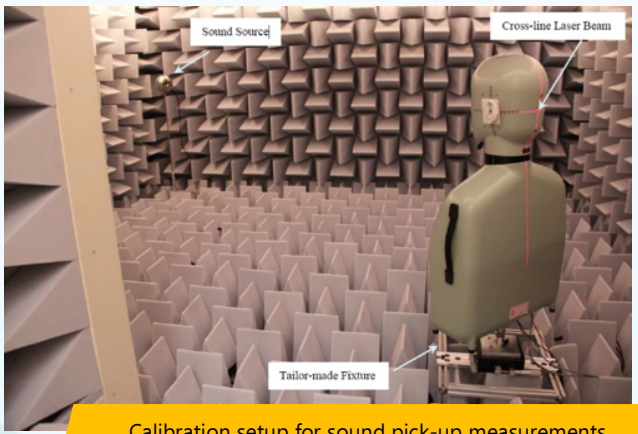
Prof Edwin Keh, Chief Executive Officer of HKRITA (right) and Prof Paulo Freitas, Deputy Director-General of INL signed the MoU on behalf of the two organisations (Photo Credit: HKRITA)

Prof Edwin Keh, Chief Executive Officer of HKRITA, stated that, "Sensor and wearable technologies will make a great impact on our social development, allowing us to explore more possibilities. Our collaboration will generate useful and productive innovations for industry and society." Prof Paulo Freitas, Deputy Director-General of INL, also said that the collaboration between INL and HKRITA would facilitate the development of new wearable concepts, fabrication, and integration routes aiming at increasing wearable solutions and their widespread utilisation.

INL is a nanotechnology-focused research institution founded by the governments of Portugal and Spain under an international legal framework to provide science solutions to cope with societal and environmental challenges.

SCL launches new calibration service for Head and Torso Simulators (HATS)

The Standards and Calibration Laboratory (SCL) has launched a new calibration service for Head and Torso Simulators (HATS), to ensure the accuracy of HATS in reproducing the sound transmission and sound pick-up characteristics of the median head and torso of adult humans. In January 2019, the new calibration service was assessed by overseas peer reviewer Dr. Zhong Bo, member of the Technical Committee for Acoustics, Ultrasound and Vibration (TCAUV) of the Asia Pacific Metrology Programme (APMP).



Calibration setup for sound pick-up measurements

HATS consists of an artificial mouth and left and right ear simulators. The calibration is divided into two parts, namely, the acoustic properties of sound wave generated by the artificial mouth and the responses of the artificial ears. HATS is widely used in the development of hearing aids, hearing protectors, telephone handsets, headsets and microphones, etc., in both the audiology and telephony industries.

SCL sets up the system for calibration of HATS in accordance with the Recommendation ITU-T P.58. Set-up of the HATS calibration system is no easy task, and SCL has prepared a free-field anechoic chamber which approximates an infinite space with no boundary where the sound wave can travel indefinitely without reflection. In addition, a time-selective measurement technique has been implemented in the system to further eliminate any backscattered signals and noises from the environment. The system has also utilised a high-speed digital signal processor to manipulate the large amount of data sampled across the hearing range of humans from 315 Hz to 8 kHz in the calibration.

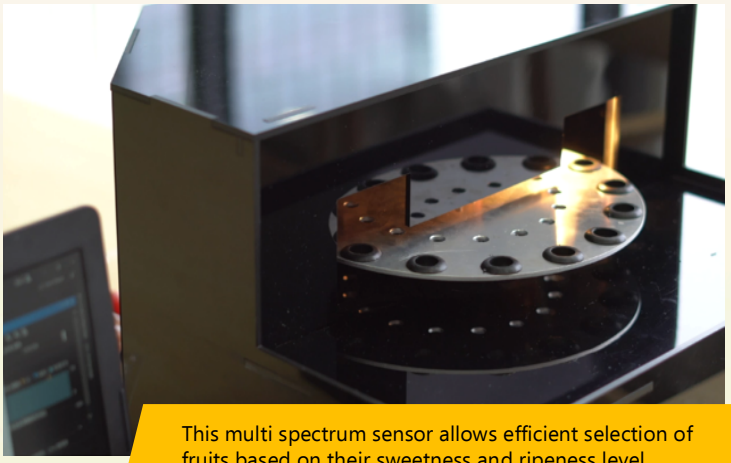
For more information about the acoustics related calibration services, please visit the SCL website at www.scl.gov.hk.

A multi spectrum sensor for fruit detection

Deltron Intelligence Technology Holdings Ltd., the start-up company founded by a research team from the Hong Kong University of Science and Technology (HKUST), has invented a multi spectrum sensor for agricultural purposes, which is a non-invasive technology allowing efficient selection of fruits based on their sweetness and ripeness level. The invention won the Gold Award and Focus Area Award (Robotics & AI Prize) in the HKUST-Sino One Million Dollar Entrepreneurship Competition 2019.

Deltron Intelligence Technology Holdings Ltd. won the Gold Award and Focus Area Award (Robotics & AI Prize) in the HKUST-Sino One Million Dollar Entrepreneurship Competition 2019
(Photo Credit: HKUST)

The multi spectrum sensor can test the sweetness, sourness, ripeness and moisture content of an individual piece of fruit through infrared technology. More specially, the sensor can suggest the best before date of fruits with 95% accuracy.



This multi spectrum sensor allows efficient selection of fruits based on their sweetness and ripeness level
(Photo Credit: HKUST)

With this technology, fruit quality control can become more cost- and time-effective. Moreover, less fruit waste is produced from cutting and testing in laboratories.

Currently, the sensor has shown great promise with apples and tomatoes, and the team has started co-operation with a fruit brand. The team expects to invent related analytical instruments for testing different types of fruits in the future. Apart from fruits, the multi spectrum sensor is expected to be applied for grains, vegetables and meat by 2020.

Upcoming Events

Please refer to the event website for latest news.

Date	Events
Nov 13 - 17	China Hi-Tech Fair 2019
Nov 16 - 17	InnoRoadshow@ T Town, Tin Shui Wai
Nov 21 - 24	Gerontech and Innovation Expo cum Summit 2019
Nov 23 - 24	InnoRoadshow@ Lei Yue Mun Plaza, Yau Tong
Nov 30 - Dec 1	InnoRoadshow@ Oi Tung Shopping Centre, Shau Kei Wan
Dec 4 - 6	SmartBiz Expo 2019

Enquiries & Comments

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