



創新科技署
Innovation and
Technology Commission

ITC e-newsletter

December 2019



ITC Highlights

ITC sets up the technology pavilion to showcase local innovations to the industry



The Hong Kong Pavilion at the CHTF in the Shenzhen Convention and Exhibition Centre showcased Hong Kong's notable I&T developments and fostering collaboration with Mainland and international high-tech businesses.

In November and December, the Innovation and Technology Commission (ITC) set up a technology pavilion at two trade fairs in Hong Kong and Mainland China respectively. The technology pavilion presented the latest innovations and achievements of Hong Kong's five research and development centres (RDCs), including Automotive Platforms and Application Systems R&D Centre (APAS), Hong Kong Applied Science and Technology Research Institute (ASTRI), The Hong Kong Research Institute of Textiles and Apparel (HKRITA), Logistics and Supply Chain MultiTech R&D Centre (LSCM) and Nano and Advanced Materials Institute (NAMI).

On November 13, the China Hi-Tech Fair 2019 (CHTF) was officially kicked off at the Shenzhen Convention and Exhibition Centre. With an aim to foster collaboration with Mainland China and international

high-tech businesses, the Hong Kong Pavilion, which was set up by ITC and Hong Kong Trade Development Council (HKTDC) at CHTF, showcased Hong Kong's notable I&T projects developed by the five RDCs.

Several institutes including the Hong Kong Council for Testing and Certification (HKCTC), The Hong Kong Polytechnic University (PolyU) and Hong Kong Design Institute (HKDI) also promoted their advanced innovations and services at the Hong Kong Pavilion. Moreover, to nurture home-grown technological and talent development, start-up businesses in Hong Kong including Fano Labs Limited and Hong Kong Authentication Centre of *Dendrobii Officinalis Caulis* Limited were invited to join the exhibition, allowing them to showcase their potential.



NAMI showcased its award-winning technology, "Printed Battery with High Power Output for IoT Applications", which supports a high current load and long service life for IoT electronics.



PolyU showcased "Anti-heat Stress Clothing for Construction Workers in Hot-humid Weather", which protects workers from extreme heat and high humidity using one-way transfer and moisture management technologies.



ITC set up an ITC Pavilion (Booth 1D-D02) at the SmartBiz Expo 2019 and showcased the latest projects from five Hong Kong R&D centres for industry members.

On the other hand, ITC also opened its ITC Pavilion at the SmartBiz Expo 2019 organised by HKTDC from December 4 to 6, which served to help five RDCs promote their latest innovations and achievements, also explore market opportunities through business matching and networking events at the Expo.

With the theme of "Smart Tech Makes Great Business", this year's Expo brought together more than 400 international exhibitors to present their latest business solutions, technology applications and operations support as a one-stop platform. The Expo featured three main areas, namely, "Smart City", "Smart Living" and "Smart Commerce", to provide golden opportunities for SMEs to enhance their business performance, improve competitiveness and explore new market opportunities.



APAS

APAS demonstrated the new generation of the "2nd Life Battery Power Pack" which makes use of lithium-ion battery modules recovered from retired electric vehicle (EV) batteries to supply regenerated power.



ASTRI

ASTRI presented the "Biometrics Sensing for Smart Locker", which enables users to access their personal belongings with multiple human biometric characteristics.



HKRITA

HKRITA introduced the "Eco-friendly Cellulosic Superabsorbent Polymer", which features great water retaining and moisture releasing properties to act as an ideal agricultural water retention agent.



LSCM

LSCM demonstrated the "Smart Lifter" which has great operational efficiency for Hong Kong's relatively small-sized and compact warehouses.



NAMI

NAMI exhibited the "Waterproof Yet Breathable Nanofiber Fabrics", which offer advantages like high durability, washability, antimicrobial properties and efficient heat dissipation for durable and high value applications.

InnoRoadshows 2019 encourages science exploration

The Hong Kong Federation of Youth Groups (HKFYG) organised two InnoRoadshows in November and December 2019 for the members of public to experience the convenience and fun brought by the latest creative inventions and promote their interest in innovation and technology.

The InnoRoadshows held respectively at Lei Yue Mun Plaza in Yau Tong and Oi Tung Shopping Centre in Shau Kei Wan showcased inventions developed by local innovation and technology institutes, as well as the award-winning projects of student science competitions. A number of "InnoTech Workshops", such as "Air Gun", "Mini Combat Robot" and "Dream Drifter", were organised during the InnoRoadshows, not only to encourage students' creative thinking, but also enable parents and kids to explore science together in a fun way and build stronger parent-child relationships.



The "InnoTech Workshops" at the InnoRoadshows were well received by the public.



Parent-child Workshop attracted parents and kids to explore science together.



Local innovation and technology institutes showcased their latest innovations.

Gerontech and Innovation Expo cum Summit 2019 embraces elderly-friendly society in Hong Kong

The Gerontech and Innovation Expo cum Summit (GIES) 2019 was successfully held at the Hong Kong Convention and Exhibition Centre, from November 21 to 24. The event focused on promoting the application of innovative technologies and ideas to enhance the quality of life of the elderly and help us cope with a rapidly ageing population.

Jointly hosted by the HKSAR Government and the Hong Kong Council of Social Service, and co-organised with the Hong Kong Science and Technology Parks Corporation, GIES is the only Gerontech fair in Hong Kong. It aims to provide a platform for various stakeholders to engage and collaborate in driving policy changes and societal and economic developments in Hong Kong, in order to embrace the opportunities brought by population ageing.



GIES 2019 was successfully held in November. (Credit: Hong Kong Council of Social Service)

Entering its third annual edition, the GIES this year showcased 480 inventions and products from over 140 local and international exhibitors, while the Summit featured seminars and workshops for local and international experts to exchange views on issues related to an ageing population and gerontechnology.



This year's GIES showcased some 480 inventions and products from 140 local and international exhibitors. (Credit: Hong Kong Council of Social Service)

ASTRI Technovation Summit 2019



Organised by the Hong Kong Applied Science and Technology Research Institute (ASTRI), the Technovation Summit 2019 was successfully held on November 25. The Summit brought together more than 30 technology experts, entrepreneurs and top-level executives to explore the future of Hong Kong as a Smart City.

During the Summit, industry leaders focused on applications of the latest technologies across a wide variety of sectors, including 'smart government', 'smart mobility', 'cybersecurity' and 'smart manufacturing'. Speakers also addressed topical issues on innovation and technology, as well as identifying ways to encourage all stakeholders in the ecosystem to leverage on new technologies for sustainable and inclusive developments.

Mr Nicholas Yang, Secretary for Innovation and Technology, expressed that the Government remains fully committed to developing innovation and technology in Hong Kong, using innovation and technology as a key economic and social driver to help improve citizens' daily lives and diversify the economy.

In addition, the Summit showcased a number of ASTRI's latest technologies and solutions, including 'Smart Locker 2.0', 'Gem Analyser', 'Diffractive Optics for Anti-Counterfeit', 'AI Medical Platform', and more.

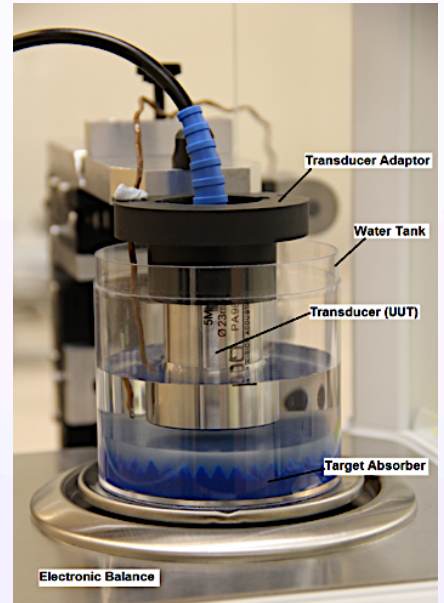


Mr Nicholas Yang, Secretary for Innovation and Technology (Third right) and Ms Rebecca Pun, Commissioner for Innovation and Technology (Second left) officiated the Technovation Summit 2019 together with other guests. (Credit: ASTRI)

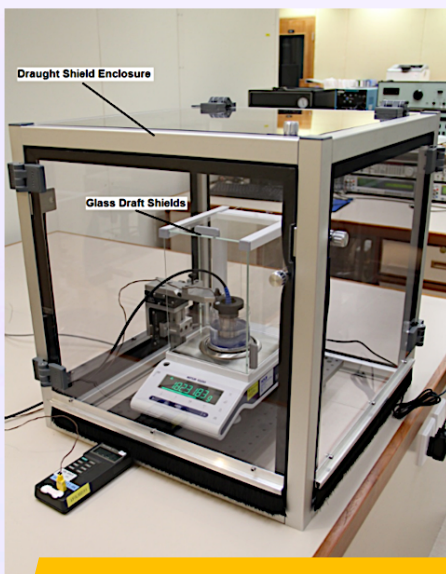
SCL launches new calibration service for ultrasonic transducers

The Standards and Calibration Laboratory (SCL) has launched a new calibration service for ultrasonic transducers, to ensure the accuracy of ultrasonic power measurements and provide the ultimate metrological traceability to the International System of Units (SI) in this field. In January 2019, the new calibration service was assessed by an overseas peer reviewer, Dr. Zhong Bo, a member of the Technical Committee for Acoustics, Ultrasound and Vibration (TCAUV) of the Asia Pacific Metrology Programme (APMP) and accredited by the Hong Kong Accreditation Service (HKAS).

Ultrasonic transducers are commonly used in physiotherapy for soft tissue injury treatments. Basic safety requirements for ultrasonic physiotherapy devices are identified in the International Standard IEC 60601-2-5 and make reference to IEC 61689, which specifies the need for acoustic power measurements with an uncertainty better than 15% at a level of confidence of 95%. In this circumstance, calibration of ultrasonic transducers shall be performed regularly to ensure the quality of the devices.



Ultrasonic transducers are commonly used in physiotherapy.



Setup for Radiation Force Balance (RFB)

In the SCL, calibrations of ultrasonic transducers are performed by the Radiation Force Balance (RFB) method in accordance with IEC 61161:2013. This is a standard method for determining ultrasonic power in liquids in the lower megahertz frequency range by measuring radiation force using a gravimetric balance. When an ultrasound wave strikes a target, its momentum is transferred to the target, resulting in a force. The time-averaged ultrasonic power is determined by measuring the difference of the mass readings from the gravimetric balance when switching ON and OFF the ultrasonic transducer. The measurement ranges of the system for transducers operating in the frequency range of 1 to 20 MHz is 50 mW to 1 W, and the measurement range can be extended to 10 W for transducers operating at or below 3 MHz.

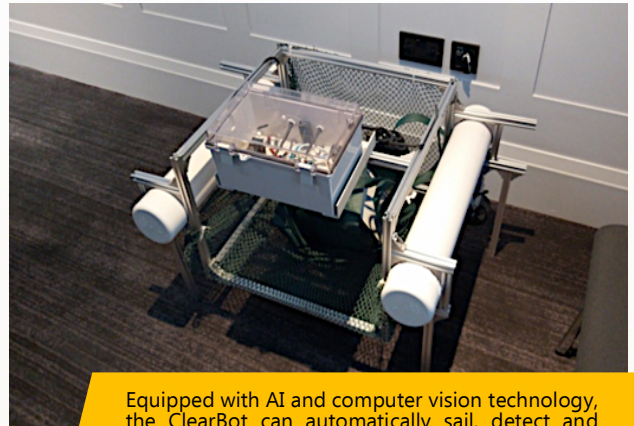
For more information about the acoustics related calibration services, please visit the SCL website at www.scl.gov.hk.



A "ClearBot" for solving the problem of marine plastic garbage

The plastic crisis in our oceans is one of the world's most serious environmental problems. In order to alleviate this alarming situation, an invention team led by the University of Hong Kong (HKU), has taken steps to provide a solution by inventing a ClearBot to clean the ocean like a vacuum cleaner robot.

Equipped with Artificial Intelligence (AI) and computer vision technology, the ClearBot can automatically sail, detect and collect plastic garbage on the sea surface. This highly effective machine only requires simple installation by mounting the device on a framework made up of materials such as wood planks or bamboo shoots at an affordable price of about HK\$1,000.



Equipped with AI and computer vision technology, the ClearBot can automatically sail, detect and collect plastic garbage on the sea surface. (Credit: HKU)



An invention team led by the University of Hong Kong won the first runner-up at the Global Grand Challenges Summit 2019 in London. (Credit: HKU)

To accelerate the production of a faster and more accurate device, the team has visited Bali in Indonesia to gain insights and inspirations from local ocean cleaners. ClearBot will not catch marine microorganisms with over 80% accuracy and hence protect the ecosystem.

The invention team, jointly formed by students from the HKU, Hong Kong University of Science and Technology (HKUST) and City University of Hong Kong (CityU), won the first runner-up among 15 teams worldwide at the Global Grand Challenges Summit 2019 held in London on September 13.



ENQUIRIES & COMMENTS

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