

For Immediate Release

HKRITA Shines Yet Again in the International Exhibition of Inventions of Geneva

1 April 2017, Hong Kong — The Hong Kong Research Institute of Textiles and Apparel (HKRITA) won two gold medals with jury's commendation, one gold medal, four silver medals, and two special awards for all seven participating entries at the 45th International Exhibition of Inventions of Geneva. It is particularly inspiring that this year HKRITA earns its highest number of entries since its first attempt to enter the Geneva exhibition in 2010. These achievements once again demonstrate HKRITA's sustained commitment in driving innovation and promoting the development of the textiles and clothing industry in Hong Kong. Since 2010, HKRITA has participated in this global event for eight consecutive years and received 31 awards, with 13 gold medals.

Mr Edwin Keh, Chief Executive Officer of HKRITA, remarked, "We are honoured by the international acclaim and recognition of our research. Our entries this year are under the themes of sustainability, industry advantage and community benefits, which align with our commitment in driving R&D efforts to contribute to the textile and clothing industry and society as a whole. Looking forward, we will continue our concerted efforts in useful research and development to nurture scalable and commercially viable technologies."

Awarded Projects

1. New Functional Textiles from Bio-based and Degradable Fibres - Gold Medal with Jury's Commendation and Special Award by the Scientific Community of Romania:

This project has developed green production technologies for new functional textiles by using 100% bio-based and bio-degradable PHBV/PLA fibres. Utilising a low temperature dyeing process with disperse dyes to achieve high dye uptake it delivers good colour fastness with a 32% energy saving compared to conventional methods of dyeing PET material. The textiles have outstanding natural anti-bacterial and mite-resistant properties without using any additional chemicals.

2. Development of Fine Worsted Yak Yarns and Fabrics - Gold Medal with Jury's Commendation:

This project has developed a new spinning method and system for producing 100% fine, high-quality yak yarns and fabrics. The newly spun yak yarns are strong, smooth and regular. Knitted fabrics made with them exhibit a soft feel with better air-permeability and heat retention, compared with that of cashmere and wool. The finished yak garments achieve a better quality with increased added-value. This technology helps improve the living standard of the yak herders in the Tibetan Plateau.

3. Sleeping Thermal Comfort Assessment System - Gold Medal:

This project has developed a one-stop solution including an indoor and microclimate simulation instrument and a systematic evaluation system to assess physical, physiological and psychological parameters under sleeping conditions so as to evaluate sleeping thermal comfort. The solution facilitates product development of bedding products and provides good reference for civil engineering and interior design of hotel rooms and domestic bedrooms.

4. Sensing Insole for Footstrike Pattern Detection in Runners - Silver Medal and Special Award by the Romanian Association for Nonconventional Technologies :

Heel or forefoot landings carry a higher risk of injury than midfoot landings, which are relatively neutral in effect. A foot-strike detecting insole has been developed and is installed with two force sensors located at the heel and the second metatarsal. The sensors are connected to a mini circuit-board which communicates with a smartphone app. By measuring the triggering time difference between the heel and toe sensors, we can differentiate among runners with heel strike, midfoot

strike and forefoot strike. With this information, runners can modify their gait mechanics to prevent injury and facilitate rehabilitation.

5. Asymmetric Functional Fencing Shoes - Silver Medal:

The asymmetric fencing shoes have translated the biomechanical requirements of fencing activities into functional modules specifically for the sport. The shoes have different functions according to different motions of the lunge, and support foot which could improve both protection and performance during the exercise. Concurrently, the shoes retain a constant and balanced landing reaction to ascertain the precision of each movement. A Hong Kong Fencing athlete wore the asymmetric fencing shoes in the Rio 2016 Olympics.

6. A Novel Treatment for Improving Leather Recovery Performance - Silver Medal:

The recovery property of leather will decrease over time, after being stretched or bent, because of intermolecular interaction such as hydrogen bonding between collagen fibres. Current methods of restoration use chemical-softening to shorten polymer chains, or mechanical-shaking which is only a physical interaction. These cannot achieve a durable effect. In this project, a novel polymer with spring-like chains is inserted between the collagen fibres by cross-linking to the active terminal groups of leather. Those chains will work as a “spring mechanism” to support the fibre network so that the leather can spring back to its original shape after pressure deformation.

7. Quick Learning Automatic Spraying System for Jeans - Silver Medal:

This project has developed a unique robotic spraying gun with an array of sensors to capture the trajectory motions of manual operators and their spraying parameters. These data are recorded in a database, and a specially developed software programme allows operators to review and modify the spraying profile in the database. This in turn permits pattern variation, which provides a ‘handmade’ effect. A six-axis manipulator has been developed to perform the spraying action automatically by making use of the data and analysis.

The 45th International Exhibition of Inventions of Geneva, which is arranged under the patronage of the World Intellectual Property Organization (WIPO), the Swiss Government and the City of Geneva, is showcasing innovations and inventions from around the globe. Running from 29 March through 2 April, it has attracted 700 exhibitors from 40 countries and features 1,000 new innovations and inventions.

About The Hong Kong Research Institute of Textiles and Apparel (HKRITA)

Established in 2006, HKRITA is funded by the Innovation and Technology Commission, HKSAR Government and hosted by The Hong Kong Polytechnic University. HKRITA engages in applied research to support the textile and apparel industries, and to drive sustainable improvements and to bring benefits for society. By providing one-stop services for applied research, technology transfer and commercialisation, HKRITA makes sustained efforts to promote successful projects for industry application.

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For media enquiries, please contact:

iPR Ogilvy & Mather

Louisa Lau / Benny Chan
Tel: 3920 7671 / 3920 7663
Email: louisa.lau@iprogilvy.com /
benny.chan@iprogilvy.com

The Hong Kong Research Institute of Textiles and Apparel

Ms SC Ku
Tel: 2627 8112
Email: scku@hkrita.com

Photo Captions:

Photo	Caption
	<p>The Hong Kong Research Institute of Textiles and Apparel (HKRITA) wins three gold medals which two with jury's commendation, four silver medals, and two special awards for all seven participating entries at the 45th International Exhibition of Inventions of Geneva. Mr Edwin Keh, Chief Executive Officer of HKRITA (Left three) poses a photo with the other representatives in the booth.</p>
	<p>Gold medal with jury's commendation and special award by the Scientific Community of Romania - New Functional Textiles from Bio-based and Degradable Fibres: Anti-bacterial and mite-resistant textiles which are made from 100% bio-based and bio-degradable PHBV/PLA fibres, without using any additional chemicals.</p>
	<p>Gold medal with jury's commendation - Development of Fine Worsted Yak Yarns and Fabrics: A new spinning method and system for producing 100% fine, high-quality yak yarns and soft fabrics.</p>
	<p>Gold Medal - Sleeping Thermal Comfort Assessment System: A one-stop solution including an indoor and microclimate simulation instrument and a systematic evaluation system to assess physical, physiological and psychological parameters under sleeping conditions.</p>

	<p>Silver Medal and special award by Romanian Association for Nonconventional Technologies – Sensing Insole for Footstrike Pattern Detection in Runners: Insole with two force sensors installed at the heel and the second metatarsal. The installed sensors can be connected to smartphone app and detect footstrike pattern.</p>
	<p>Silver Medal – Asymmetric Functional Fencing Shoes which translate the biomechanical requirements of fencing activities into functional modules specifically for the sport. A Hong Kong Fencing athlete wore the asymmetric fencing shoes in the Rio 2016 Olympics.</p>
	<p>Silver Medal – A Novel Treatment for Improving Leather Recovery Performance: A novel treatment improving leather recovery performance by inserting spring-like chains between the collagen fibres to support the fibre network. This treatment helps leather to spring back to its original shape after pressure deformation.</p>
	<p>Silver Medal – Quick Learning Automatic Spraying System for Jeans: A quick learning automatic spraying system for jeans is a unique robotic spraying gun with an array of sensors which the system allows operators to review and modify the spraying profile in the database of a specially decided software. This in turn permits pattern variation, which provides a 'handmade' effect that captures the trajectory motions of manual operators and their spraying parameters.</p>
