

For Immediate Release

HKRITA Wins Seven Awards in the Special Edition 2021 Inventions Geneva Evaluation Days *Judges accord HKRITA a special Gold Medal with Congratulations of the Jury*

24 March 2021 — The Hong Kong Research Institute of Textiles and Apparel (HKRITA) has won seven medals at this year's Inventions Geneva Evaluation Days, which represents a significant achievement for HKRITA and for Hong Kong. Among the awards received is a "Gold Medal with Congratulations of the Jury", along with two Gold Medals and four Silver Medals. This year, more than 600 inventors from 20 countries participated in the event. HKRITA's outstanding achievement demonstrates its core technological competencies in textiles and clothing, as well as its continuous efforts and commitment in furthering innovations and sustainable development of the industry. HKRITA has participated in this global event for a decade since 2010 and received a total of 52 awards, including 24 Gold Medals.

"We are delighted to have participated in the Special Edition 2021 Inventions Geneva Evaluation Days amid these challenging times brought by the pandemic. Receiving the special 'Gold Medal with Congratulations of the Jury' particularly excites us, as it recognises Hong Kong's leading role in textile innovation," said Mr Edwin Keh, Chief Executive Officer of HKRITA. "Sustainability remains one of our key R&D foci to further address the pressing industry and environmental issues, and we are honoured that three of our entries have earned Gold Medals. Looking forward, we are confident that our awarded innovations will be widely applied in daily lives to benefit the industry and community as a whole."

HKRITA Award-winning Projects

Gold Medal with Congratulations of the Jury:

Cellulose-based PFC-free Functional Surface Finish

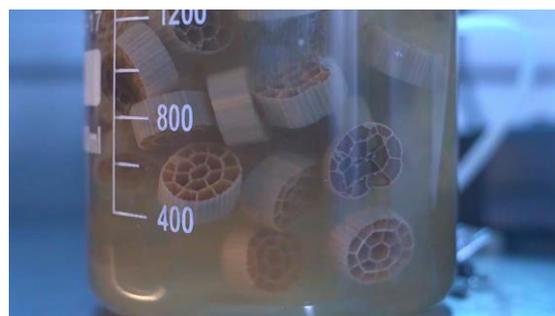
Traditionally, water-repellent surface finishes are achieved by using perfluorochemicals (PFCs), which are toxic chemicals hazardous to humans and the environment. This entry is a new water-repellent surface finish using natural and recycled materials obtained from textile waste, which is a safer alternative to PFCs on textiles. The project has developed a novel water-repellent surface finish that makes use of PFC-free recycled cellulose material through a two-step chemical process: firstly, a hydrophobic modification of the recycled cellulose powders to make them water repellent; secondly, adding functional additives to improve the washing durability properties of the fabric.



Gold Medal:

Cultivation of Aniline-degrading Bacteria to Enhance Textile Dyeing Wastewater Treatment

This project demonstrates a solution to the treatment of textile dyeing wastewater that is both sustainable and economical. It enhances biological treatment through an innovative process that integrates taxonomy analysis and biodegradation performance to cultivate the specialised aniline-degrading bacteria for textile dyeing wastewater treatment. The specialised microbial strains, cultivated and immobilised through this process, can enhance the biodegradation of aniline compounds up to an undetectable level of concentration in textile dyeing wastewater. This taxonomic identification method provides a detailed understanding of microbial

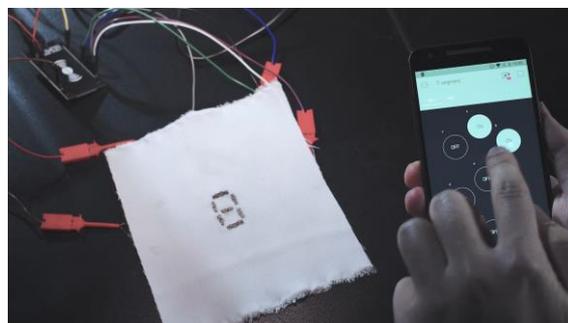


populations in biological wastewater treatment environments. This project was developed in partnership with the Hong Kong Productivity Council.

Gold Medal:

Soft Electrochromic Yarns with Low Operating Voltage

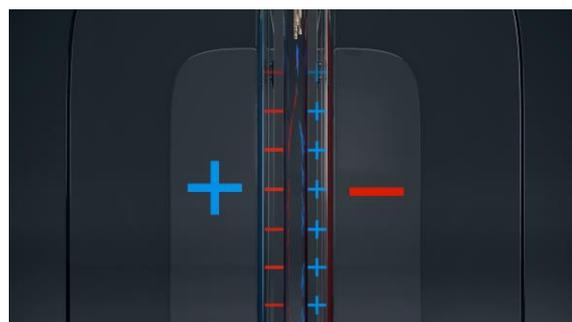
By presenting an integration of electrochromic materials into soft conductive yarns to develop an electrochromic textile display capable of achieving colour-change upon application of low operating voltage, HKRITA has developed a sustainable way of fabricating a soft electrochromic yarn for use in a numeric textile display prototype. The soft electrochromic materials can exhibit changing of colours with low operating voltage on textiles. Not only does it provide a promising energy-saving technology for futuristic textile display, with wide and easy application in the textile industry, but it also opens up opportunities for next-generation smart displays for fashion textiles.



Silver Medal:

A Novel Separation Method of Disentangled Textile Fibres

To separate valuable disentangled protein fibres from synthetic textile materials, this HKRITA invention is an environmentally friendly system which utilises the triboelectric properties of different kinds of textile fibres to perform the task. The process does not require use of any chemicals or water, thereby ensuring that no waste will be discharged to the environment. The collected clean and intact protein fibres are then ready for production of new functional or high value clothing to satisfy various market needs.



Silver Medal:

Carbon Dioxide Capturing Cellulosic Materials

A cellulosic yarn, functionalised by amine containing molecules, has been developed to capture CO₂ from the surrounding air. This project has developed cellulosic yarns with CO₂ adsorbing properties by TEMPO mediated oxidation of cellulose and amine functionalisation via a grafting reaction. These yarns can be used to produce textiles and may contribute to the reduction of CO₂ levels in the environment if they are used in large quantities in everyday life. This HKRITA invention is a new product fostering sustainable development of the environment.



Silver Medal:

Sleeping Comfort System for Identification of Comfort Zone

To assess and monitor bedding microclimate, skin touch and pressure distribution properties of the bedding system, the Sleeping Comfort System presents an evaluation system for identification of the comfort zone in terms of thermal, touch and biomechanical comfort for bedding. It consists of a hardware and a software system. By integrating the software and hardware, the chamber can adjust the microclimate of the bedding environment and biomechanical comfort, personalising one's sleeping comfort.



Silver Medal:

Bionic Functional Footwear for Pregnant Women

Weight gain and relaxin hormone increases during pregnancy can lead to swollen feet and arch drop for pregnant women. This project has developed bionic functional footwear which can adapt to foot dimensional variations, enhance arch support and reduce peak plantar pressure, thus relieving foot pain and improving foot health. Inspired by terrestrial animal and human foot structures, technologies of 3D hybrid knitting-printing-moulding materials and biometric ergonomic design are used to develop the bionic functional shoes. This project was developed in partnership with The Hong Kong Polytechnic University.



Running from 10 to 14 March, International Exhibition of Inventions of Geneva (“IEIG”) hosted the “**Special Edition 2021 Inventions Geneva Evaluation Days**” for inventors from all over the world to participate in the competition virtually by presenting their invention via a 3-minute video to the panel of professional judges. This remarkable annual event, in its first-ever virtual format, was arranged under the patronage of the World Intellectual Property Organization (WIPO), the Swiss Government and the City of Geneva, to showcase inventions, results of the latest research and new and innovative products from around the globe.

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

Established in 2006, HKRITA is funded by the Innovation and Technology Commission of the HKSAR Government and is hosted by The Hong Kong Polytechnic University. HKRITA contributes to the competitiveness of the textile and apparel industry by providing one-stop services in applied research, technology transfer and commercialisation. HKRITA also plays a vital and expanding role in driving sustainable improvements in the industry and thus bringing benefits to society as a whole.

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