

For Immediate Release

23 November 2020

The Green Machine: Announcing a Milestone in Recycling by Hydrothermal Separation

The hydrothermal separation system, (The Green Machine), was developed by The Hong Kong Research Institute of Textiles and Apparel (HKRITA) in collaboration with the H&M Foundation.

The small-scale Green Machine was set up in Hong Kong in 2018 and now the first industrial scale system will be operational in PT Kahatex, an established textile manufacturer in Indonesia. The first fashion brand to use textile materials made from the Green Machine in their collection is the brand Monki.

Mr Erik Bang, Innovation Lead of H&M Foundation said, "the Green Machine is a technological milestone as well as an economical one. We are close to not only recycle blend textiles at scale but also making it affordable for all, killing the myth of sustainability being a costly compromise. We can't settle for less than inclusive solutions if we're serious about stopping climate change."

The processing capacity of the first industrial scale Green Machine is about 1.5 tons per day. PT Kahatex will start by using waste (fibers, yarn and fabric) from manufacturing as feedstock to produce garments. This pilot operation builds on the research in the separation of post-consumer apparel carried out in Hong Kong. The PT Kahatex operation will help optimize the parameters of the system, ensuring that future generations of the Green Machines will be even smoother and greener.

Mr Andy Trisna, Director of PT Kahatex notes that, "sustainability is growing in importance for the brands and the customers in the fashion industry, and we were keen to work together with H&M Foundation and HKRITA to develop at an industrial scale system to recycle more materials. I hope that the hydrothermal system can be scaled-up even more and become a widely accepted approach to a more sustainable fashion industry."

All partners in the development of the Green Machine are very pleased to note that Monki, a youth-focused fashion brand, has announced its ambition to go 'full circle' in terms of sustainability, using the Green Machine system to create the brand's first collection using recycled polyester from garments.

Mrs Jenny Fagerlin, Sustainability Director at Monki said, "as a fashion brand we need to do our part when it comes to closing the loop. With eyes wide open Monki will walk into this climate-decade and be part of the solution. If we can prolong the life of our products for as long as possible and decrease usage of virgin sources, it's a huge step in the right direction."

Mr Edwin Keh, Chief Executive Officer of HKRITA observed that, "the new normal has driven us in a green direction. In collaboration with our partners in the supply chain, we have created a system that at scale will achieve two very important aims: first, it will provide a new and commercially viable industrial recycling solution and second, it will help us move closer to a sustainable future."

Garments are often made from a blend of different fibers to improve performance and comfort and to reduce cost. Yet this makes it difficult to recycle the blended materials. The result is most of these end up in landfills and incinerators. The hydrothermal separation system makes recycling of blended materials feasible by selectively decomposing cotton into cellulose powders, thereby enabling the separation of the polyester fibres from the blends. The separated fibres are ready for spinning and manufacturing into new fashion items, as in the case of Monki. The whole process uses only heat, water and citric acid, a naturally occurring chemical found in lemon juice.

The development of the hydrothermal separation system is an Innovation and Technology Fund project. It won a gold medal in the 46th International Exhibition of Inventions of Geneva in 2018 and a silver award in the 2017 Hong Kong Green Innovations Awards.

Please click [here](#) to download the photos of the hydrothermal system. (Photos by the H&M Foundation)

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 commercialization. HKRITA also plays a vital and expanding role in driving sustainable improvements in the industry and thus bringing benefits to society as a whole.

End

For media enquiries, please contact:
Ms SC Ku (Tel: (852) 2627 8112; Email: scku@hkrita.com)