

# textiles

The official  
magazine  
of The Textile  
Institute

Issue 1 2024



## **COUNTRY FOCUS**

Argentina

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## **RECYCLING**

Accelerating Circularity  
Blue Loop Originals  
Avery Dennison

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## **ACADEMIA**

Institut für Textiltechnik

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## **DESIGN**

Lable by MAS

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# Business News

## HOUDINI SPORTSWEAR IN COLLABORATION WITH POLARTEC



Stockholm-based outdoor brand Houdini Sportswear presents multiple initiatives on the journey towards the brand's vision of "Maximum experience, zero impact, and beyond".

A first look of the new Planetary Boundaries Assessment was presented during ISPO and Houdini will continue to expand the Ride Clean initiative, an umbrella concept for all efforts aimed at empowering skiers and snowboarders to practice their passion while contributing to a life in harmony with nature. A new concept shell utilising a brand new Polartec fabric innovation was also presented at the trade show.

The first step to minimise your environmental impact is to know what it is. In 2015, Houdini initiated the ground-breaking Planetary Boundaries Assessment, a holistic, corporate evaluation based on the Planetary Boundaries framework. Together with scientists from Stockholm Resilience Center/Alba Eco, the institution that published the scientific framework, Houdini looked over nine different aspects of its environmental impact: From climate impact to chemical use and biodiversity. "We are using world-leading science to evaluate all aspects of the impact our business has on our planet's ecosystems. It is a very tangible way for us to improve and to show our love and respect for nature," said Eva Karlsson, CEO Houdini Sportswear.

The Ride Clean initiative is Houdini's way of empowering skiers and snowboarders to practice their sports while contributing to a snowsport community in harmony with nature's systems. There is a not-so-clean backside to winter sports, including toxic chemicals in ski apparel and bad product design contributing to waste streams and climate change. Houdini offers a complete layering system from base to shell and insulation garments made with circular

fabrics and completely free from PFAS or other toxic chemicals.

The new Houdini garment series is crafted with the next generation Polartec Power Shield a 3-layer shell fabric developed by Polartec. It is now made with Biolon, a renewable, non-GMO plant-based nylon with a 50% lower carbon footprint than virgin Nylon-6,6 and a reduced reliance on fossil resources. Measuring in at 20.000 mm H<sub>2</sub>O and 20.000 g/m<sup>2</sup>/24h, the weather protection and breathability places the garments head-to-head with other high performance shell layers on the market. What really makes the difference though, is how it feels to wear it. The light, smooth and incredibly strong garments follow your every move and takes shell layer comfort to a new level. The new shell layer series is currently in the prototype field testing phase and planned to launch during fall 2024. "We at Polartec believe that leaving the world a better place than we found it is a responsibility for everyone. The launch of Biolon Nylon based fabrics marks an important step in that journey. For a long time, many thought that more sustainable options meant a loss in performance, like durability, Polartec has proved that this is not the case," said Ramesh Kesh, Senior VP & Business Manager Polartec | Government & Defence BU at Milliken & Company

## YKK'S NEW DYNAPEL WATER-REPELLANT ZIPPER WINS BEST PRODUCT IN ISPO TEXTRENDS COMPETITION

The ISPO Textrends judges have selected YKK's DynaPel water-repellent zipper as the Best Product in the accessories category. The competition, held twice a year in conjunction with the ISPO trade show, recognises the most innovative performance textiles, components, and apparel.

Designed to be compatible with garment recycling systems, the DynaPel zipper uses GTT's EMPEL technology instead of the standard PU film to achieve its water repellency. The lack of a PU film helps remove one of the barriers of textile to textile recycling of performance apparel by eliminating the urethane material, which presents challenges to garment recycling processes.

"Receiving an ISPO Textrends Award helps validate the technology and our efforts to develop fasteners for circular systems," said Terry Tsukumo, Vice President, Product Strategy Division. "By employing EMPEL technology, we can achieve the robust water protection expected from YKK products while eliminating the challenges that PU poses to recycling systems."

Conventional chemical and mechanical garment recycling systems cannot process the polyurethane film commonly used on water-repellent zippers, necessitating the removal of

zippers from garments before recycling. This additional processing step often deters recyclers from accepting garments with PU zippers, resulting in unnecessary waste.

EMPEL technology uses advanced green chemistry devoid of PFAS and a specialised manufacturing process that allows the chemistry to penetrate the yarn and encapsulate it with a water-repellent layer through molecular cross-linking. The molecular cross-linking creates an extremely durable layer that is highly resistant to abrasion and invisible to the eye.

"DynaPel represents a new generation of sustainable, high-performance water-repellant zippers," stated Tsukumo. "It is the future of water protection for zippers."

## ITMA ASIA + CITME CONCLUDES ON HIGH NOTE WITH VISITORSHIP OF 100,000

ITMA ASIA + CITME concluded successfully on 23 November 2023 at the National Exhibition and Convention Centre (NECC) in Shanghai. The five-day combined exhibition featured an exciting showcase of textile machinery from the entire manufacturing value chain. It attracted the strong participation of textile professionals eager to explore the latest automation and sustainable technologies.

The eighth combined exhibition welcomed visitorship of 100,000 from 105 countries and regions. Local Chinese visitors from 31 provinces and cities formed the largest group of visitors, followed by India, Taiwan, South Korea, Bangladesh and Iran. Visitors from outside mainland China accounted for more than 13 per cent of the visitors. There was a significantly higher number of overseas delegations, including more than a dozen large buyer groups, compared with previous editions.

Exhibitors at ITMA ASIA + CITME 2023 were impressed by the turnout. Mr Georg Stausberg, CEO of the Polymer Processing Solutions Division and Chief Sustainability Officer of the Oerlikon Group, said: "We can look back on a successful show where we were able to meet many of our customers, not only from China, but also from Pakistan, India and Indonesia."

More than 1,500 exhibitors from 23 countries and regions took part in the exhibition which grossed over 160,000 square metres. Many local and international brand names staged product launches which were well received by visitors.

Mr Fritz Legler, Textile Marketing Officer of Stäubli, commented: "We enjoyed a tremendous level of high-quality customer traffic at our booth. Our automation technology in warp preparation, the latest generation of shedding solutions for high-speed weaving machines, as well as carpet weaving systems have found the acclamation of our Chinese and international customers."

According to the show owners, the high-

quality showcase by two established ITMA and CITME textile machinery exhibition brands have contributed to the success. The extensive outreach programmes to more than 300 business associations and industrial clusters, media partnerships, roadshows and other promotional programmes have also yielded positive results.

The next ITMA ASIA + CITME exhibition will be held from 14 to 18 October 2024 at the NECC Shanghai. It is organised by Beijing Textile Machinery International Exhibition Co., Ltd. and co-organised by ITMA Services.

## ACG NYSTRÖM AND TMAS BACK CREATIVE IDENTITY IN UKRAINE



As a member of TMAS – the Swedish Textile Machinery Association – ACG Nyström reports solid success in embroidery machine sales with the latest Tajima TMEZ models in Denmark, Norway, Sweden – and perhaps a little surprisingly, also in Ukraine.

The Tajima TMEZ range of single and multi-head embroidery machines is rapidly introducing intelligent thread management (I-TM) to the market, enabling virtually anyone to quickly and easily become an embroidery specialist. “With I-TM, each individual design is analysed, with automatic detection of the fabric thickness, and exactly the right amount of thread needed is precisely supplied for the job,” explains ACG Nyström sales engineer Richard Carlsson. “This eliminates the need for manual thread tension adjustment, making it much easier for non-skilled operatives to obtain consistent results. The age-old problem of pulling on designs is also a thing of the past with the TMEZ machines, so all the operator needs to master is accurately positioning the fabric through the machine.”

A digitally controlled presser foot for secure fabric stability further reduces fabric fluttering, he adds, and is especially effective when working with very thick or thin fabrics, or folds of material. Fluttering can occur when a material is lifted up during embroidery, causing skipped

stitches, mis-trimming and reduced quality stitching. The TMEZ machines are fully enabled for ease of operation by Tajima DG by Pulse – the strongest embroidery software on the market.

Despite Russia’s ongoing assault on its country, ACG Nyström Ukraine, which was founded in 2005 and is based in Lviv, 70 kilometres from the Polish border, reports that its customers are currently extremely active and a number of new embroidery machines have been installed in the west of the country over the past year.

“Some of our customers have also been forced to leave their businesses in the east of the country and have now successfully relocated in the west, where it is relatively calm, although we are still very scared,” says ACG Nyström Ukraine managing director Halya Andrushkiv. “Keeping busy also helps to keep everybody’s minds off the situation here.” While military badges have been one growth area, there also remains much activity in branded corporate apparel, there has also been a huge revival of interest in vyshyvankas – the elaborately embroidered shirts and dresses traditionally worn in the country.

Since Ukraine restored its independence in 1991, the wearing of vyshyvankas has greatly increased in popularity as an expression of positive national pride and identity. Traditionally, each region of the country established its own unique designs and vyshyvankas are adaptable enough to be worn in many styles, having been adopted by major Ukrainian brands who have successfully promoted them globally. Vyshyvanka Day is now a national holiday held on the third Thursday of May each year and has become a symbol of resistance against Russian aggression. This year many celebrities joined in to support the cause, wearing tailor-made vyshyvankas, designed by the Ukrainian embroidery brand Etnodim and others. Some of the stars wore shirts with patterns specific to the regions where their ancestors lived – Liev Schreiber’s, for instance, came from Odesa and Barbara Streisand’s from Ternopil.

“Traditionally, all of the embroidery was by hand, and the rich designs, colours and textures have been refined over many centuries,” said Andrushkiv. “Now, with the latest Tajima technology and software solutions backed by ACG Nyström’s expert services, any traditional design – as well as new ideas for motifs reflecting today’s situation – can be recreated or further developed for mass market designs. Our expertise can streamline and ensure premium quality in the development of all finished product ideas.”

“Throughout our company, including in Ukraine, TMAS provides us with valuable support in the promotion of our services,” says Thomas Arvidsson. “There are many synergistic benefits from open discussions and co-operations with

other Swedish textile technologists and TMAS members are all at the forefront of digitalisation and automation. We are happy to provide all assistance we can to Halya Andrushkiv and ACG Nyström Ukraine.”

## NEW REPORT EXPLORES HOW NEXT-GEN SILK IS DISRUPTING THE MATERIALS INDUSTRY.

Innovators are developing a new generation of next-gen silk fabrics that can match this luxurious and ancient textile fibres’ positive attributes without harming the planet or its inhabitants.

Material Innovation Initiative has just published a new and exciting report entitled *What Makes Silk, Silk? Revisited 2023*, which dives deep into the silk industry, highlighting key opportunities and challenges in creating next-gen silk.

The report aims to shed light on some important questions including: What makes silk special? How does silk’s composition, structure, properties, and performance make it the luxurious fibre we know today? How can we mimic or recreate silk without using animals or petrochemicals? What are the greatest challenges and opportunities in creating next-gen silk? Do successful next-gen silk innovators already exist?

By exploring the silk’s unique properties and innovation opportunities, this report is intended to inspire a new generation of scientists and entrepreneurs to develop high performance, luxurious, and sustainable next-gen silk materials.

Recent discoveries of silk’s large environmental footprint, human rights abuses, and animal welfare concerns are inspiring scientists and innovators to develop a new generation of next-gen silk fabrics that can match silk’s positive attributes without harming the planet or its inhabitants.

“Fashion designers love to use silk. It’s one of the most luxurious and ancient textile fibres and silk’s smooth, continuous filament gives silk yarn some unique properties such as strength, elasticity, and resistance to pilling. However, the silk industry accelerates climate change and environmental degradation, relies on inhumane and unsustainable animal agricultural practices, and offers few protections for workers in processing plants. Popular synthetic alternatives to silk like polyester and nylon contain microplastics which accumulate and persist in ecosystems for hundreds of years. Next-gen materials are a solution to these problems and it’s very exciting to see so many innovators developing next-gen silk” says Thomasine Dolan Dow, Director of Materials Innovation and Design at MII.

The report showcases exciting material innovators who are successfully developing

next-gen silk through various different approaches, including Alt Tex, AMSILK, Circ, Eastman Naia, ettitude, Kintra Fibers, Lenzing, Nanollose, Orange Fiber, Renewcell, Rubi Laboratories, Spidey Tek, Spiber and Tandem Repeat.

Diving into whitespace opportunities for innovators, investors and scientists this report is a must read for anyone interested in the possibilities of next-gen silk.

"In our report we connect the dots so that next-gen silk innovation can meet the needs of the fashion industry and beyond. We're already seeing some promising innovation in this area and our goal with this report is to inspire a new generation of scientists and entrepreneurs to develop high performance, luxurious, and sustainable next-gen silk materials." says Nicole Rawling, CEO and Co-Founder of MII.

This Silk Report is a one-of-a-kind resource for scientists, textile suppliers, and material innovators looking to understand this burgeoning field. Download the report for free at <https://materialinnovation.org/reports/what-makes-silk-silk-revisited-2023/>

## UPM AND VAUDE SHOWCASE FIRST EVER FLEECE JACKET MADE FROM WOOD-BASED POLYESTER

The world's first ever fleece jacket made with wood-based polyester was unveiled by UPM Biochemicals and VAUDE at ISPO Munich 2023, the world's largest sports trade show, where global sports business community comes together to share perspectives and shape the future of the industry. UPM and VAUDE collaborated closely to produce outerwear made with bio-based chemicals to prove that the shift towards renewable materials in textiles is possible already today.

"We recognise the acute challenge faced by the fashion and footwear industries to find more sustainable solutions for the textiles and materials used in their products. The launch of the first ever bio-based fleece jacket is a milestone in responding to that challenge, enabling fashion industry leaders to take action now and move beyond fossil-based materials" says Michael Duetsch, Vice President Biochemicals at UPM.

"VAUDE is a leader in advancing sustainable products – addressing all aspects of sustainability from longevity through repairability and alternative use options to truly responsible materials. This collaboration confirms the strong appeal of our novel product portfolio to changemakers in the outdoor and sports industry but also beyond. By building a first of its kind biorefining business to offer a new generation of bio-based renewable materials, we can help global brands to reduce their CO<sub>2</sub> footprint and defossilise their products."

Approximately 60% of all materials currently used by the fashion industry are made from fossil-based polymers. While there is a need for synthetic polymers especially for key performance materials it is hoped that this prototype will inspire and motivate brands to exit fossil-based materials for more sustainable bio-based solutions, accelerating the sustainable transformation of the textile industry.

The resin used to make polyester contains 30% monoethylene glycol (MEG), which is traditionally derived from petroleum. In UPM and VAUDE's process this ingredient will be entirely replaced with a new bio-monoethylene glycol (BioMEG). UPM BioPura is a drop-in solution that can be easily implemented into existing polyester manufacturing processes as it is identical to currently used MEG on a molecular basis and can therefore go into corresponding recycling streams.

"We have partnered with UPM as partnerships across the whole value chain are a prerequisite for enhancing sustainable innovations", This initial milestone marks the first step in our journey to create a polyester derived from non-fossil ingredients," adds René Bethmann, Senior Innovation Manager at VAUDE.

"Producing outerwear made with bio-based chemicals is part of our shift towards using renewable materials in the textile and apparel value chain – we want 90% of all our products to be bio-based or have recycled content of more than 50%."

UPM is investing EUR 1,180 million to build the world's first industrial scale biorefinery in Leuna, Germany. In Leuna, UPM will convert sustainably sourced, certified hardwood into next generation biochemicals that will enable the vital shift away from fossil-based to renewable materials across a wide range of industries. The Leuna biorefinery is part of a broader growth area, UPM Biorefining, focused on scaling refineries producing a variety of renewable fuels and chemicals made from sustainable biomass.

## Correction and apology

In our article entitled Next Generation Materials, issue 3 2023, the following sentence needs to be corrected 'In 2023 the author and the Aatos Erkko Foundation granted Euro 10.5m of funding' to 'In 2023 the Jane and Aatos Erkko Foundation granted Euro 10.5m of funding'. Apologies for any confusion caused.

# Books

*Constricting styles and limited clothing choices can restrict a person with a disability from fully participating in social communities, employment and gatherings that have an unspoken dress code. Design has the power to change this. **Fashion, Disability, and Co-design**, published by Bloomsbury, shows how collaborative, inclusive design techniques can produce garments and accessories that increase social inclusion. Grace Jun outlines practical techniques to help designers create their own inclusive collections, with detailed examples from interviews with professionals. 14 illustrated case studies show how engagement with disability communities to co-design clothing and accessories can lead to functional, wearable solutions for people of all abilities without compromising style.*



*Immerse yourself in nature and rewild your creative practice with inspiration from textile artist Jeanette Appleton. With a focus on the versatile medium of felt **Textile Creativity through Nature**, published by Batsford Books, takes readers through a series of ideas for working with nature to boost creativity, inspire, and make us more sustainable as artists. The book covers:*



- How to capture the nuances of nature through creating exciting felt surfaces – lines of sea, frosted puddles, hedge and grass – and how to translate them into subtleties of texture and stitch.
- Transforming recycled cloth by bonding memories, mixed-media and found objects into your work.
- Cutting and repairing techniques: making cuts and slits in the layers of fabric to reveal the secret strata of nature beneath, echoing the planet's fragility.
- How to make the best use of sketchbooks, maps and mapping to record inspiration from time spent in nature.
- A variety of strategies for overcoming artist's block, from revisiting past diaries and sketchbooks to interacting differently with your local environment.

*Inside the Westminster Menswear Archive is a unique guide, published by Bloomsbury, to the role of garment archives as an industry resource for designers to research and examine both historical garments and the work of their peers. With exclusive access to over 120 key garments from the Westminster Menswear Archive, spanning the last 275 years, each piece is brilliantly photographed in close-up detail and annotated with curator commentary, to inspire new generations of designers. Highlights include garments from:*



*A-COLD-WALL\*, Ahluwalia, Aitor Throup Studio, Alexander McQueen, Belstaff, Bernhard Willhelm, Burberry, Casely-Hayford, C.P. Company, Carol Christian Poell, Comme des Garçons, Craig Green, Dior Men, Fred Perry, Helmut Lang, Hussein Chalayan, Jean Paul Gaultier, Junya Watanabe, Louis Vuitton, Martine Rose, Meadham Kirchhoff, Nigel Cabourn, Paul Smith, Prada, Stone Island, Umbro, Undercover, Vexed Generation, and Vollebak.*

# The need for inclusive innovation

## Lable by MAS' Journey of Adaptive Clothing

**In conversation with key individuals from the adaptive clothing manufacturer Lable by MAS, MAS Innovation and the Sri Lanka National Paralympic Committee.**

Today, according to the World Health Organisation (WHO), there are over a billion people across the world living with some form of disability. However, wearing everyday clothing has long been a challenge for the disabled community. When they represent almost 15% of the human population, how do most brands out there today, still sell clothing that considers the average able-bodied individual as the standard?

"In our industry, there is often a focus on creating clothing with the perfect fit for individuals with two arms and two legs, conforming to the ideal shape and size for traditional clothing. However, in a world in which what we wear serves as our armour in the metaphorical gladiator arena that is life, it is essential that we design clothing that empowers real people, recognising the diversity that exists all around us. We need to grant individuals the independence and freedom to express themselves authentically in public," says Suleik Mushin, Lead at Lable by MAS.

Recognising this need is what drove MAS Holdings, South Asia's Largest apparel tech company to venture into the adaptive space. With over three decades of experience in leading concept to delivery solutions in apparel and textile manufacturing for some of the world's leading brands, the know how was already present.

"MAS operates manufacturing plants in 16 countries and has established design facilities in key style centres around the world. With a workforce of over 100,000 people, we cater to the needs of a dynamic and constantly evolving industry. Over the years, we have expanded our portfolio to include brands, start-ups, and wearable technology. We have gained global recognition for our commitment to sustainable and ethical working practices. As a result, we are an industry leader in innovative design and manufacturing," says Shevanthie De Alwis, Head of Brand and Marketing for MAS Innovation.

Starting its adaptive journey in 2018 for brands like Undercare and Slick Chicks, MAS Holdings built its Adaptive Centre of Excellence in 2020. The team consists of thought leaders in design, pattern making, sourcing, product development, marketing along with consumer research consultants and medical experts.

Suleik Mushin says "The Adaptive Center of Excellence is a dedicated division of MAS Holdings that focuses on designing, validating, and manufacturing inclusive and accessible clothing. This includes the brand 'Lable'. Our approach prioritises production feasibility to ensure that all our brands are accessible to everyone. Our commitment to accessibility is rooted in our values of championing rights, embracing fashion, and adhering to ethical principles for the betterment of the world and our customers. We take great pride in the knowledge that even small design features, such as the placement of a fastener, can have a significant impact on the ease of use of clothing for millions. For us, this is both an objective and a measure of success in our journey to create Lable by MAS."

Lable by MAS thus became an entity with a clear focus and mission in creating change. "Firstly, we aim to provide credibility for both our customers and brands. We take pride in the processes our products undergo to earn recognition as

items tailored for individuals with disabilities. We view ourselves as facilitators and creators, collaborating with co-creators to transform ideas into validated and manufacturable concepts.

Our creative process begins with drawing inspiration directly from our consumers. We follow a meticulous path, starting with the conceptualisation of a product, followed by thorough validation, and concluding with the manufacturing phase. The cornerstone of our success lies in our deep connection with co-creation and our invaluable consumer base. Without this symbiotic relationship, reaching our current position would not have been possible. This enhances the credibility of our brands, showcasing that our products undergo rigorous processes to earn recognition as inclusive and adaptive. Secondly, we aim to create awareness and drive change within the society at home in Sri Lanka," says Suleik Mushin.





However, all of this is rooted in rethinking how clothing is designed. Adaptive clothing challenges and reshapes the centuries long understanding of how clothing functions on a person's body. Leshani Peiris, Design Lead at Lable, expands on this view, "As a fashion designer in this space, my understanding is that adaptive clothing is a fashion based form of social activism. It introduces a human centric design approach to fashion, challenging outdated, mainstream design processes in the fashion industry. We are now finding new ways to make clothing better and easier to wear, which hasn't been considered so far. The disabled community is pivotal in making this change we so desperately need, because they are the ones most qualified to speak on behalf of the drawbacks in mainstream fashion. Upon closer inspection we realise that while traditional clothing has always catered to the everybody, it has never functionally benefitted us all. Adaptive clothing may be radical now because it confronts the current status quo, but it won't be for much longer. We are considering adaptive clothing as an extension of innovation that considers end users with a specialised problem statement in mind. Living with chronic pain and having several degenerative spine conditions myself, I can extend my personal experience into the products I create and have a deeper understanding of the psychological challenges involved as well. The true success of our clothing lies in our process of co-creation."

This process of co-creation is rooted firmly within three distinct communities. As MAS Holdings employs over 470 persons with disabilities across its various business entities, they become a primary community with whom these products are conceptualised and manufactured. Secondly, Lable by MAS has established a strong partnership with the Sri Lanka National Paralympic Committee since

2021 as their official clothing sponsor. And finally, Lable also has a growing list of US consumers that help validate its clothing.

Speaking on the partnership with the Sri Lanka National Paralympic Committee and its athletes, Suleik Mushin commented "Our collaboration spans across intimates, lifestyle,

leisure, and game day/performance wear for athletes. Notably, our products were worn by 26 athletes who won 11 medals at the 2022 Asian Para Games."

"The Relationship between MAS Holdings and the Sri Lanka National Paralympic Committee (NPC) has been going from strength to strength in this short period simply because both organisations follow a common agenda in serving the Para Athletes to their full potential. Both the NPC and MAS have understood one another's perspective towards the needs and aspirations of the Para Athletes in Sri Lanka.

NPC is forever grateful to the Innovations of MAS for taking these concepts forward. In the recent games in China it was clear that clothing is an integral part of your body and that the athletes felt it so much so that they loved wearing MAS Clothing wherever they went" commented Priyantha Peiris, Vice President of the Sri Lanka National Paralympic Committee. Suleik Mushin added "We place great importance on working closely with athletes because their rigorous testing helps us to benchmark our products. This is particularly crucial in a relatively new market where both consumers and brands are cautious. Our credibility is established through our relationships with consumers and has been mission critical in ensuring the success of our venture in this unique market."

Lable by MAS hopes to take this even further by aiming to partner with athletes in other countries and regions in anticipation of the Paris 2024 Paralympic Games. They remain committed to delivering their adaptive clothing solutions customised to athletes taking part on the global stage, enabling them to perform to the best of their ability.

With its primary functions based in Sri Lanka, Lable by MAS has cemented itself to help change the narrative surrounding disability locally. Aasif







Faiz, Marketing Lead for Lable said “When we first started developing adaptive clothing, our main objective was to address a worldwide demand. However, in our efforts to understand the local audience, specifically the disabled community, we found out that disability was highly stigmatised, and was considered a shameful or taboo subject. We recognised that addressing the issue of disability as a whole was crucial before we focussed on developing adaptive fashion that catered to the Sri Lankan context. This remains a priority as we continue to work towards creating inclusive and accessible fashion for all.”

In working towards this change of narrative, Aasif Faiz added “As a brand, we are committed to dismantling stigmas surrounding disability in Sri Lanka. In collaboration with communities, we have immersed ourselves in diverse stories, perspectives, and experiences. Many individuals shared narratives highlighting the deeply ingrained shame and karmic associations attached to disability in Sri Lanka.”

“Our brand is committed to playing a significant role in reshaping negative narratives and promoting a more inclusive and accepting society. We organise various events such as panel discussions, open mic nights, and exhibitions with the aim of promoting social integration. One of our most notable initiatives is the public exhibition

‘9’ in Colombo, coinciding with the International Day of Persons with Disabilities. This exhibition was a collaborative effort between artists and the community, and it provided an immersive and educational experience for the public. It aimed to showcase a fresh perspective on the daily lives of persons with disabilities in Sri Lanka, along with the lack of accessibility and how we can improve as a society.” Aasif Faiz continued.

In looking at the future of Lable by MAS, the company is growing its capabilities. Having designed clothing in intimates, sleep & loungewear, activewear and swimwear, the aspirations are to expand vertically in an inclusive manner. This expansion would address the diverse needs of individuals across generations, supporting even those undergoing post-operative recovery, the elderly, and individuals facing temporary setbacks. So if you’re a brand that’s looking to collaborate or looking to expand your product offering, Lable remains ready to engage.

Furthermore, Lable is actively positioning itself to become the launch partner for para sports. Our objective is to introduce products that can aid athletes in the Paris 2024 Paralympic Games and beyond. “We aim to be recognised as supporters of para-sports teams, contributing to their performance goals,” concludes Suleik Mushin.



Visit [www.lablebymas.com](http://www.lablebymas.com), follow ‘Lable by MAS’ across Instagram, Facebook and LinkedIn or email [aasiff@masholdings.com](mailto:aasiff@masholdings.com) to get in touch.



# Accelerating Circularity

**Accelerating Circularity is an action oriented nonprofit focused on textile to textile recycling systems at a commercial scale through a collaborative, stakeholder led approach.**

**Karla Magruder, Founder and President of Accelerating Circularity shares with us the lessons learnt from**



**circular system trials conducted in both the United States and Europe along with the reasons why this work is so important to the future of textile production.**



We have a mission to catalyze new circular systems and business models to turn used textiles into mainstream raw materials. Our ultimate vision is to achieve a world where textiles are no longer wasted.

To deliver on our mission we connect industry players through a variety of collaborative working groups, projects, and educational tools on the processes necessary to build circular textile to textile systems. In the four years that we have been in action we have worked towards transitioning the industry from linear to circular systems. Work streams include trials in the United States and Europe, convening working groups on textile chemical recycling and trim products and developing educational tools.

Accelerating Circularity works with primarily post consumer materials (PCW) generated in the global north where high volumes of products are discarded. We also work with post industrial textiles (PIW) generated in the global south where the majority of products are made. Both PCW and PIW are the leftovers in the take, make, waste linear systems currently in practice. Today, around 90 to 110 million tons of used textiles go to landfill and incineration annually. At the same time in 2022, ~116 million tons of textile fibres were produced globally, ~63% was polyester and ~25% was cotton making up over 80% of the fibre market. It's as if we are producing and discarding an almost equal number of textiles annually. This is far from the circular industry we envision.

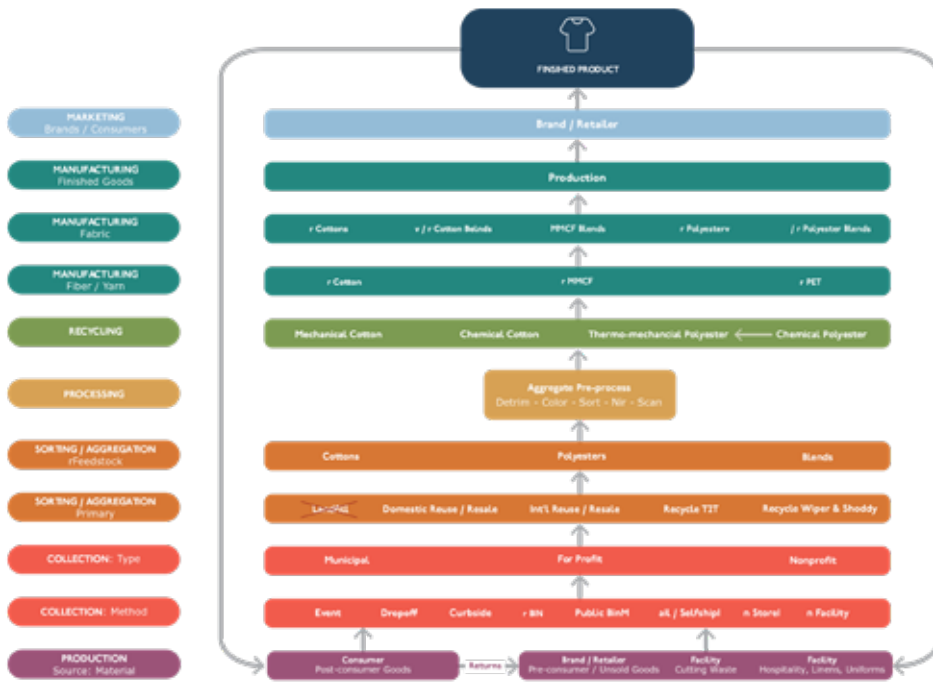
At Accelerating Circularity a key workstream has been the setting up and execution of trials. The object of the trial program is to utilise post consumer feedstocks at maximum levels while considering supply chain

capabilities as well as cost and material quality. The trials address and repurpose the largest percentage of fibres produced by targeting polyester and cotton. Running trials makes it possible to identify the challenges and the opportunities of circular textile to textile systems. We have already shown that it is possible to create new fibres from used textiles. The trials have also brought to light the gaps and opportunities in developing scalable circular systems that can be fully commercialised. It's essential that we are able to validate the ability for the entire system to function.

There are clear gaps and opportunities. For example, we all know of the gap in the commercialisation of systems at scale for preprocessing and recycling polyester since they do not currently exist. Then there is the huge opportunity to reduce the environmental impacts of our industry, by reducing textiles going to landfill or those needing to be produced. However, the gaps and the opportunities in the industry's understanding and implementation towards building circular textile to textile systems are what drive us. It is not a "what came first, the chicken or the egg" situation. The system needs to be set up simultaneously. If there isn't a system to develop feedstocks to meet recycler specifications there will be no recycling. If there is no recycling we will not divert textiles from landfill and incineration. With huge volumes of textile products heading to landfill, the industry won't meet its goals for recycled content and Greenhouse Gas (GHG) reductions.

The impact of the volume of textiles produced and discarded is why the transition needs to happen. As such, we need to measure the reduction in impact made by these new processes. Life cycle assessment (LCA), a tool to measure the environmental impact of a process and/or





product, is the most commonly used tool. While we were not able to run LCAs on our specific trials, the Fashion Industry Charter for Climate Action reported in April 2021 that mechanically recycled cotton is the lowest cotton carbon option. At the same time, new chemical recycling technologies



are commercialising and all have the intention to have lower GHG emissions than the fibres they intend to replace. For example, one of our work streams has been to convene and facilitate The Alliance for Textile Chemical Recycling (ACTR) group. As a group we launched a definition of terms to help the industry better understand chemical recycling. At the same time the group has made the lowering of GHG's a shared goal.

Through the US and EU trials we orchestrated the collection, preprocessing, recycling, and manufacturing of PCW and PIW into new fibres and yarns. The products were designed to go

through the circular process multiple times. As an example, for the mechanical cotton trials we recycled 46,000lbs of post consumer waste and 46,000lbs of post industrial waste into an equal 50/50 blend that was coined "the ACP blend", for a total of about 92,000lbs of recycled materials. This material was then blended with mixtures of virgin cotton, thermal mechanically recycled polyester, and Refibra to provide the strength and desired quality of the recycled fibres. There are also additional trials with thermal mechanically recycled polyester, chemically recycled cellulose, and chemically recycled polyester. Both the recycled polyester and Refibra include textile waste content.

Overall in collaboration with Accelerating Circularity's partners, we have recycled 92klbs through the US trials and 13klbs with an additional 39Klbs sorted and ready to be recycled through the EU trials. These pilots have targeted utilising a minimum of 40% recycled content with at least 20% PCW as feedstocks for textile recycling processes that are available today at scale and in pre-commercial stages with output to fibre, yarn, fabric, and ultimately product. By running multiple pilots at once, it has aided our ability to model different scenarios that pressure test various recycling technologies, upstream input requirements, and downstream output possibilities. Now, we are moving beyond proof of concept and towards turning spent textiles into mainstream raw materials.

The trial process is complex, we identified ten sub-steps. The steps of the trial process include defining the stakeholder roles, material testing, timeline planning, product development, bulk production, material sourcing, product development and partner approval, costing models, restricted substance list testing, and

### US Trials

Number of Trial Participants	32
Number of Participating Brands	10
Number of Trials	12
Target Product Types	9
Number of Participating Mills	19
Number of Yarns	15
Volume Post-Consumer Cotton	23 TONS
Volume 100% Post-Industrial Cotton	23 TONS
Targeted Volume Post-Consumer Polyester	10 TONS
Targeted Volume of Output Yarns	150,000 LBS

### European Trials

Number of Trial Participants	42
Number of Participating Brands	11
Number of Trials	16
Target Product Types	2
Number of Participating Mills	6
Number of Yarns	10
Volume Post-Consumer Cotton	6.7 TONS SORTED
Volume 100% Post-Industrial Cotton	-
Targeted Volume Post-Consumer Polyester	11 TONS SORTED
Targeted Volume of Output Yarns	-



verification of claims. There have been learnings at each of these steps. Here are some of the learnings:

**Collaboration** - all textile to textile trial system partners are essential to create the system and if any partners do not do their part the system will struggle to succeed.

**Stakeholders** - a formalised process of written agreements among the system partners must be in place. Trial elements, such as inputs and outputs, roles and responsibilities, timelines and schedules, volumes, and data collection must be covered.

**Materials testing** - before a trial program's output may proceed to full-scale production, it must be tested according to industry standards. Testing criteria and standards are subject to formal agreement by all value chain partners. This can be difficult as most standards are typically specific to each organisation. Testing must be performed both at the development stage and in bulk production.

**Time planning** - planning timelines is essential to coordinating the outcome of the trials. It is one of the most difficult areas. New supply chain connections drive timelines. All operations are codependent, if one is late or there are issues, it affects the entire system.

**Material sourcing** - collection and sorting of

PCW and PIW need to be specific to identified downstream needs. Any deviations will disrupt the system. Once materials have been sorted appropriately they may then need to be pre-processed which can require a wide range of processes from de-trimming and laundering, to right-sizing. Access to these systems is limited based on their current technology readiness levels.

**Costing models** - are needed for upstream recycling operations that are not a part of a linear value chain. Understanding costing factors, run time, output studies, etc., will determine how recycling fits into them. As we move from linear to circular models, we have the opportunity to ensure all impacts are measured and addressed equally to represent the true cost of a product.

**Restricted substances (RSL)** - testing is used to see if recycled textile feedstocks contain chemicals of concern. These substances may have previously been unregulated under chemical management standards at the time, but are now in the current standards.

**Verification of claims** - the chain of custody model and assurance system must be in place at the start of the trials if any claims are to be made on final products.

When a participant joins an Accelerating Circularity project, whether it's a trial or working group it is imperative that they share similar beliefs, values, and ways of working in order to create new circular systems and business models. We have learned there is a difference between commercialising a new recycled fibre and setting up a circular textile to textile system. The trials have proven the potential for making important changes to the industry's current linear system. This revolution is happening with the ability to transform used materials into new materials. However, the shift in technologies, while exciting, is not enough to meet textile to textile system goals. Circular systems must include all the



components and steps that are necessary to complete the transition.

Collaboration is at the heart of creating and connecting these circular systems. To do so, all nodes within a system must work together in order for it to function optimally. Circular textile to textile systems need participation and relationships between the following: the collectors, sorters, preprocessors, data technologies, chemical companies, recyclers, fibre producers, yarn spinners, fabric mills, brands and retailers - or it will not work. None of these actors are more important than the other. Rather, they are all necessary for a functioning and effective system.

Linear industry norms must be re-written. The entire system needs to be engaged with a common goal of changing and with a new understanding

of who and what needs to happen. To that end, Accelerating Circularity has created tools that include directories for Recyclers, Collectors/Sorters, and Reality Zone Mechanical Cotton Recycling, a Playbook for setting up textile to textile systems, and definitions developed on textile chemical recycling by the Alliance for Chemical Textile Recyclers (ACTR Group).

The need for a circular textile to textile system is imperative for the future. Accelerating Circularity aims to empower the industry to fulfill its promises to include recycled materials in products and reduce GHG emissions. We are the builders of circular systems with the ability to connect the circular players and then educate the industry on the processes to transition to circularity.

**Building Circular Systems**  
Creating scale in textile-to-textile circular systems

<p style="text-align: center;"><b>1 Building Markets</b></p> <p style="font-size: small;">Demonstrate textile-to-textile systems and value chains</p>	<p style="text-align: center;"><b>2 Textile Use Hierarchy</b></p> <p style="font-size: small;">Design a tool to guide the flow of textiles through the channels with the highest circular potential</p>	<p style="text-align: center;"><b>3 Education</b></p> <p style="font-size: small;">Develop resources that speak to and educate brands and institutions on responsible next life pathways for used textiles</p>
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Building on our prior success, Accelerating Circularity is launching a new phase of work called Building Circular Systems. This phase will continue our mission to catalyse new circular supply chains and business models to turn used textiles into mainstream raw materials. In this next phase, our team will focus on three areas: 1) Building Markets through trials, 2) Developing a Textile Use Hierarchy Tool, and 3) Education for brands on responsible next life pathways for used textiles.

# Blue Loop Originals

## Sustainable sporting goods made from recycled materials

Blue Loop Originals exhibited within the Sustainability Hub at Outdoor by ISPO in 2023.



This Dutch company was founded by Ron de Wiel (Chief Inspiration Officer) in collaboration with André Weise (Relationship Manager) when they became aware of how much textile waste is incinerated or ends up in landfill. Every year, as much clothing is produced as is thrown away. The founders recognised that sufficient knowledge and capital exists to turn the concept around by transforming waste into something beautiful, that could contribute to the preservation of our planet.

The brand name, established in 2013, is derived from 'Blue' that stands for being outside and looking at the sky, and 'Loop' that represents the mentality of using materials over and over again. As Zero Waste Engineers, "Where others see Trash, we see Raw Materials!"

When they established a textile company over twelve years ago their initial focus was on blue jeans, said to be the most popular garment of all time. Based in Holland, they discovered a relatively local textile plant, Altex Textil-Recycling, where recycled fibre is created from textile waste. This company has been able to process 'broken' blue jeans, with the feedstock coming from retail drop off points or from old clothing collections. Significantly, as no water is used in the recycling of worn jeans, one kilogram of recycled denim may save around a 1,000 litres of water.

Subsequently Ron de Wiel found yarn spinners in Belgium and Switzerland. The recycled fibres are blended with other (virgin or recycled) materials to achieve more strength and durability as recycled fibres are shorter than virgin ones and need this support.

Since then, with a young team that shares the founder's passion, the company has sourced other waste streams that feeds the creation of new outdoor textiles manufactured from used materials. The Blue Loop Originals website

currently promotes natural fibres from worn-out Jeans and old woollen sweaters. Recycled wool, primarily from Prato, Italy, has been readily adopted by the Outdoor sector. In their accessories collection Blue Loop produces classic recycled wool caps and felted wool boots. The felt is made in Lüneburger Heide, Solttau, a traditional German area for wool production, where felt has been made for 60 years.

The Blue Loop originals range, primarily manufactured in Portugal with the exception of products from recycled PET, also promotes garments in blended yarns. Altex recycling can process a variety of different recycled fibres, both synthetic and natural, with different fineness, length and opening. In addition to the sizeable tearing lines, Altex has blending lines where many different components may be integrated to become new products to satisfy specialist design



requirements. For example, a Blue Loop Originals men's Woolcel Polo is made from a blend of Refibra lyocell yarn (from Lenzing) and recycled wool. For the Refibra yarn, cotton scraps left over during garment production are mixed with wood pulp obtained from sustainably managed forests. The inside of a women's sweater is described as super soft due to a premium Denimcel yarn; a blend of Tencel and recycled denim.

In addition Blue Loop Originals has introduced recycled polyester for outer protective wear. For example, the Virga jacket is made from 100% recycled polyester and claims to use the world's first polyester membrane made from textile waste. In addition, the Virga Shell's design is said to be circular, in that it may be handed in for recycling when the jacket is completely worn out. The brand is committed to giving textile waste a high-quality second life with this shell garment as the latest innovation. Virga Material: 100% recycled polyester (78% recycled PET bottles, 11% textile waste, 11% discarded clothes).

The brand is also experimenting with other innovative recycled fibres and blends. In terms of transparency, Ron de Wiel believes that, within the clothing and textile sectors, "One of the biggest challenges of our time is that we don't know the supply chains anymore. We don't know who makes things. We don't know the people, and we don't know what cultures and daily struggles they're dealing with." He recognises that, when planning innovation, it is important for Blue Loop Originals to know their partners very well in communicating personally, face to face, instead of typically by mail or Whatsapp. He admits that this is hard but is convinced that this is the right way for the company: "Recycling is a process. That's also how we understand our relationship with other people."

In discussing corporate culture, de Wiel states that, "We love to swim against the tide, explore new ideas, fail and get back up again. Three things are very important to us: We don't work with targets and bonuses, because reward manifests itself in things other than money if you do the right things. Someone in the warehouse is just as important as someone on the road visiting customers. We give everyone the freedom to develop, but that also has to come from within".

With so many brands becoming involved in the cause of sustainable production, he admits that "We don't claim to be the best in class when it comes to sustainability and to shout that loudly to the world. It's important to us that we really make a difference and thus be part of a larger movement." Weisse adds that "We observe that many brands, large retailers and also manufacturers make false claims and confuse consumers with inflated stories about circular economy and sustainability. This is not doing the topic any good."

In recognising that the 'True Cost' of garments is not understood by consumers addicted to fast



fashion, Blue Loop Originals cannot offer fast fashion prices. With their network of European based partners, Weisse believes that their margin, the margin of the factories and the margin of the retailer are in balance. The brand aims to offer long lasting classics, representing a basic outdoor wardrobe concept that works for everyday activities.

Weisse believes that, in respect of the sustainability movement and low consumer confidence, "We need to work more with retailers to make consumers feel that their money spent in the store supports more than just the owner's bank account. At the same time, retailers themselves could tell stories about why they chose certain products and brands. A good example of this is a store in Amsterdam that regularly writes a story and gives it to each customer in order to build a deeper connection and convey more relevance.

Ron de Wiel reflects "What fascinates me most is how nature works and what it creates. I seek to interact with others and read many publications about food, energy, our climate and about nature. We are very down to earth, but have an urge to change a few things. I have taken the textiles and garment industry as an outlet for that. Maybe politics would have been a better way to change things faster. However, in looking to the future we are on a good path. The recycling movement is in full swing, new EU legislation will raise awareness, and that will lead to more action."

Ron concludes that: "Sustainability is about more than the environment. We'd like to see more personalisation in stores, special storefronts. You could write down experiences in stories, sell favourite books at the counter, put a decent coffee maker in the store, have an intensive exchange with brands, offer repairs or repair kits. All things that foster deeper relationships between people. That's the basis for sustainable togetherness – and for the success of the movement that drives us everyday."



# Digital Product Passports

## Facilitating 'end-of-life' textile recycling

**Jake Hanover, director, Digital Solutions, Apparel Solutions at Avery Dennison discusses the needs and the new reality of Digital Product Passports.**



The concept of recycling is not new. Efforts to transform single use plastics back into raw materials have been in place for decades. Circularity, especially in garment manufacturing, is a newer and highly necessary concept. According to a 2022 report by McKinsey & Co., more than 15 kilograms of textile waste is generated per person each year in Europe. The report states that at least one-fifth of textile waste could become new clothing, and a circular economy for textiles could create 15,000 new jobs in Europe by 2030, if enough investment in clothing collection, sorting and recycling is forthcoming.

We need this to happen. Today the \$3 trillion fashion industry is widely criticised for its wastefulness and lack of transparency. Thankfully governments are acting, and as members of The Textile Institute are well aware, the transition to textile to textile circular systems is gathering momentum. France's bold AGECL laws has kick-started the paradigm shift towards a circular economy for textiles and many other jurisdictions are following suit.

The circular economy centres on designing durable garments, with textiles being recycled only after extensive use. Fashion industry stakeholders are striving to integrate this model, with some players now exclusively using easily recyclable materials like organic cotton and Tencel. A key objective is mass textile to textile recycling, reducing the reliance on raw materials and fossil fuels.

How can Digital Product Passport (DPP) technology help the textile industry gear up for profound change in the next decade?

### A new legal landscape will propel textile recycling forward

The French Decree 2022-748 AGECL (Anti-Waste for a Circular Economy Law), better known as 'the French Anti-Waste Law', is gradually coming into force. As of January 2023, large fashion brands trading in France must comply with a protocol for environmental labelling, making consumer information on the environmental qualities and characteristics of a product readily available at the point of sale and after sale. This covers the product's traceability of textiles, and the presence of plastic microfibres. Certain environmental claims such as 'eco-friendly' and 'biodegradable' are banned from product information. Details about the recyclability of the product and its packaging must be made available to consumers. Any infringement will lead to fines.

At the same time, the EU will introduce Digital Product Passport legislation across the bloc. The EU DPP is a mandatory electronic record to be fully required by 2030, designed under the EU Green Deal legislation, specifically the Ecodesign for Sustainable Products Regulation. The CIRPASS project is currently in the process of defining a cross-sectoral product data model and planning how this can be deployed across different product groups.

One of the most compelling aspects of the DPP is its focus on data and transparency. The passport will serve to provide comprehensive details regarding the origin, composition, repairability, and disassembly options of a product. It will also include information on recyclability or appropriate end-of-life disposal methods for various components.

To prepare for a future when supply chain visibility will be mandatory, fashion brands are



Jake Hanover, director, Digital Solutions, Apparel Solutions at Avery Dennison



beginning to digitise their product data and adopt DPPs. The aim is that consumers will have a better understanding of the environmental impact of the products they use, and that recycling businesses will have access to the vital information needed to carry out industrial-scale sorting and textile to textile recycling.

By accurately tracing the origin and composition of each textile product, it becomes easier to establish efficient recycling and upcycling processes. Textile waste can be significantly reduced as the DPP ensures discarded clothing is properly sorted and channelled back into the production cycle, either through recycling or reusing materials.

Long-term, this shift towards circularity not only lessens environmental impact but also presents economic opportunities by creating new avenues for innovation and job creation, as McKinsey envisages. The DPP, with its ability to revolutionise supply chain transparency and circularity, holds the key to transforming the textile industry into a more sustainable and socially responsible sector.

### Consumers crave change

Consumers play the ultimate role in driving sustainability by using their purchasing power. Research confirms the majority do want more transparency about the clothes they buy, and to learn how to recycle items. According to the Avery Dennison/GWI 2023 Digital Consumer Behavior report, 60% of fashion shoppers globally see the value in scanning a QR code on a garment with their smartphone to understand proper care and how to recycle.

The onus is on brands and retailers to provide this information. Solutions providers also have a responsibility to educate businesses on what is possible and how they can proceed with the right technology. QR codes are certainly accelerating their way into the mainstream, becoming an accessible technology for public use. Major apparel brands, such as adidas and Patagonia, are already transitioning to digital product information. Brands are citing the benefits of long-term product connectivity and consumer education.

A good example is luxury designer Mara Hoffman. Her 'dress that changes everything' has just been showcased at the NRF 2024 show in New York. This garment is Hoffman's first piece created in partnership with fashion technology company Circ, and it was designed using Circ Lyocell fabric derived from 50% recycled textile waste. As Harpers Bazaar puts it: "At the end of its life of black-tie dinners, nuptials, and other formal affairs, the gown can be sent back to Circ to be recycled into fabric for completely new garments."

For many brands, telling this story of sustainability via a digital trigger will be an essential stage in engaging their loyal customers, and driving behaviour change. After all, textile to textile recycling will only become mainstream if consumers buy into the concept whole heartedly.

### Digitising product data and deploying SaaS

While the introduction of DPPs may seem a long way off, for many companies it requires a major digital transformation, so brands must start planning now if they are to meet environmental commitments and comply with the new laws.



Apparel producers should be working with their suppliers to collect and organise raw material, production and supply chain data, and make it readily accessible to consumers via user-friendly cloud platforms.

As an associate member of the CIRPASS consortium, advising the European Commission on the implementation of the DPP scheme, Avery Dennison has been contributing to the development of the DPP's IT architecture. Our atma.io connected product cloud currently tracks 30 billion items across the supply chain for global brands, capturing information that will be vital for DPPs, such as carbon footprint data, origins of materials, and re-use instructions.

We supply digital solutions for leading brands, and we also offer DPPaaS – Digital Product Passport as a Service – which can accelerate the deployment process. This provides organisations with the platform, digital identifications solutions, and expertise they need to capture the key metrics required for compliance, encompassing details on how products can be reused, so they can be given a second or third life. It can also help customers create engaging ways of consumer-product interactions and storytelling to boost loyalty and build trust.

Burton Snowboards, a purpose-led brand rooted in snowboarding and outdoor clothing, is piloting the technology in readiness for the forthcoming EU regulations. It already uses digital solutions from Avery Dennison across its business, including RFID to manage products and improve the customer experience. Its Chief Product Officer, Chris Cunningham, says: "We are proud to be one of the first retailers exploring



what DPPaaS is capable of and working to get ahead of the DPP legislation. Piloting DPPaaS will provide us with new ways to showcase our brand values and engage with our customers.”

#### Climate change clock is ticking

Today, of the 32 billion garments produced each year, a massive 64% will be incinerated or sent to landfill. This can't continue. We urgently need practical solutions. To reach global net zero

emissions by 2050, and limit global temperature rise to 1.5C, businesses, governments and individuals must start making decisions carefully, to mitigate their impact on the planet.

By adopting these digital identification technologies, the industry can seamlessly communicate the sustainability attributes of their product. They can engage consumers in creating a more sustainable supply chain by enabling textile recycling and other circular initiatives,

such as re-commerce schemes.

As we forge ahead, the textile industry must collectively embrace sustainable practices, celebrate the progress achieved, and actively contribute to the ongoing transformation of the fashion industry towards a circular and responsible future. The onus is on all of us - individuals, businesses, and policymakers - to shape a world where clothing is not just a fleeting trend, but a lasting legacy of conscious choices.

### Avery Dennison have undertaken various collaborations as part of a series of innovation based initiatives, that underscore their commitment to a circular apparel supply chain and in support of its 2030 sustainability goals.

Avery Dennison entered into a collaboration with Transnomadica, a project by Maurizio Donadi rooted in an archive of vintage objects and apparel, alongside Ron Herman, the influential Los Angeles-based retail innovator known for introducing the shop-in-shop concept. A Transnomadica vintage selection was put on sale in Ron Herman's Melrose Avenue store. Each garment had an Avery Dennison Digital Care Label providing a solid use case on how it can be used in fashion resale while providing an enhanced brand experience.

Together with the Ron Herman buying team, Transnomadica selected unique vintage items to pilot this program in Ron Herman's Melrose Ave. store. There were existing quality items enhanced by a selection of customised and upcycled garments by Transnomadica, from its LA studio.

Transnomadica enlisted Avery Dennison to provide the digital triggers, applications, and data connectivity required to complete the circularity loop at Ron Herman. Each garment featured a Digital Care Label and a sustainable hang tag,

providing a digitally-enabled experience for shoppers. Scanning the QR code unveiled a wealth of bespoke information on the heritage of that specific garment, detailing its journey, as well as explaining what the garment is made from and how to care for it.

Post-purchase, the Digital Care Label helps to advance the circular economy as it educates the shopper and ensures garment recyclers are accurately informed of composition and allows resellers to verify authenticity.

Michael Colarossi, vice president, innovation, product line management and sustainability, Apparel Solutions, Avery Dennison said, "Transnomadica and Ron Herman have changed the fashion world and now they are doing this again with a captivating narrative that inspires and educates. This collaboration adds a layer of technology so shoppers can connect with what they buy at a deeper, more emotional level. We're advocates for reusing what already exists and Transnomadica and Ron Herman are demonstrating just how desirable up-scale vintage

can be."

Maurizio Donadi, Transnomadica founder, said, "What I find most thrilling about this collaboration is the union of three businesses all of which are unique in their fields. The outcome combines talent, a love for quality products, the power to inspire and a willingness to embrace new technology. It's via this innovation that we have an opportunity to better educate customers about vintage garments. This is not a flea market story, these are beautiful products that have been slightly tweaked to make them live longer."

"The opportunity here is to marry heritage with technology. The solutions used in this project can inspire brands to explore the positive effects technology can have on fashion businesses, particularly in enabling greater transparency."



# Shifting the Fashion Industry

**B corp animaná and NGO Hecho por Nosotros (HxN), both based in Buenos Aires, Argentina, were funded by Adriana Marina. Adriana, a changemaker and an Ashoka fellow created these tools in response to traditional business models and mass consumption within the fashion industry worldwide. Their vision focuses on learning from artisans and micro, small and medium enterprises (MSME's) as they believe that solutions come from the local wisdom, the grassroots of the industry and that these communities hold the key to generating a creative circular economy; where artisans, natural fibres, design, fashion and regenerative models play a main role. Adriana and Paula Ruiz introduce us to their work and the impact that they are having both locally and globally.**



In this Camelid Year designated by the United Nations, our work within the NGO, alongside the animaná brand, is poised to experience an unprecedented surge in influence. With a track record spanning over 15 years, our focus on developing environmentally respectful and regenerative models is now taking center stage in 2024.

This pivotal moment in our story is characterised by the joint efforts from all stakeholders within our value chain. Through collaboration and shared vision, we have crafted a narrative that emphasises holistic sustainability and mutual benefit for both producers and consumers. Our journey has been one of steadfast commitment to principles that prioritise the well-being of our planet and its inhabitants. As we navigate the challenges and opportunities of the present year, we do so with a sense of responsibility and purpose, knowing that the decisions we make today will shape the

landscape of tomorrow.

The significance of our work lies not only in its immediate impact but also in its potential to inspire and catalyse change on a global scale. By fostering dialogue and cooperation across sectors, we are contributing to a more resilient and equitable future for all. As we look ahead to the challenges and opportunities that lie on the horizon, we do so with confidence and determination, armed with the collective wisdom and experience of our journey thus far, we stand ready to embrace the opportunities that await us.

This is why animaná and HxN find it crucial to raise awareness while fostering a genuine understanding of the problem of today's world, adopting a transformative stance that encourages change across various nations worldwide. Sustainability is not merely a fashionable term; it is intricately interconnected with human beings, biodiversity, ecosystems, and nature. It entails a profound observation of nature and living in harmony with its laws. As part of nature, humans must remember that they are guests on this planet, not its owners. This entails being a living part of its principles. Under this perspective, the evolution of growth knows no bounds. Sustainability not only entails caring for and respecting the environment and people but also establishing forms of dialogue as a society to exchange products and services. These three aspects interact symbiotically, and without them, the concept of sustainability would not be fulfilled, thus requiring holistic thinking from systems and



HECHO POR NOSOTROS

animaná

# Paradigm



models.

It is widely accepted that there is a need to change the status quo of the current production and consumption models. As McKinsey (2021) has reported, "with garment production volumes growing by 2.7 percent annually and less than 1 percent of products recycled into new garments, action on circularity is an imperative". Therefore, at Hecho por Nosotros and animaná, the focus has been put on weaving a diverse network of actors over the past twelve years in order to identify and prove solutions to be applied in this fragmented industry. For us sustainable fashion is based on nature and respect for it, ensuring fair payment to all participants, fostering accessibility for the creation of new micro and small to medium-sized enterprises, and enabling traceability throughout the value chain, promoting models that favour local development and where technology serves to create dialogue among all stakeholders and consumers.

Adriana Mariana, the visionary behind Hecho por Nosotros (HxN) and animaná, embarked on her commitment to environmental stewardship long before the establishment of today's consumptions and production patterns. Nurtured by her childhood amidst the untamed landscapes of Patagonia, she imbibed the significance of harmonious coexistence with nature from an early age. The genesis of animaná is a testament to this enduring commitment, wherein fashion acts as a bridge to reconnect with nature and the ancient wisdom safeguarded by many communities, particularly those in the Andean regions of Latin America.

The crucial element running through animaná's veins is the recognition of the invaluable significance that Andean communities hold for the world. Through its designs and the quality of its products animaná seeks to showcase the work of the Andean community globally. The work of

Andean communities focuses on revaluing this wisdom and organising an industry that lives by regenerative models, implied to enhance nature, local wisdom, culture interacting with information technology, knowledge, flowing with local good practices whilst introducing their own way to market.

animaná and HxN combines a way that allows to strengthen organic models with creative and rooted in profound common human values that are unchangeable, and it is in this pursuit of acknowledging and celebrating the richness and potential found within communities, that we find it essential to highlight the inherent strengths that contribute to their distinct identity and sustainable practices. These communities possess a wealth

of traditional knowledge, embracing local wisdom and organic forms of organisation deeply rooted in their cultural ethos. Their profound connection with nature, manifested through a holistic understanding of natural cycles and adaptive design, serves as a tool for dialogue and a source of profound ecological insights. The communities' capacity to generate solutions deeply rooted in their local context signifies a unique approach to problem-solving. Moreover, their ability to create value locally while fostering global opportunities positions them as guardians of both local heritage and global treasures. The artisanal production, especially in textiles, reflects a unique blend of aesthetic beauty and unparalleled properties sourced from indigenous plants and fibres. These communities, organised around their animals as integral producers, showcase the intricate relationships between human activities and the environment. However, despite these strengths, challenges such as the vulnerability of artisans, lack of exposure, competition with industrial products, and insufficient professional training and education need to be addressed. Recognising these challenges is crucial in fostering an environment where the intrinsic value of artisanal work is not only preserved but elevated, aligning with the goal of the referred award to qualify firms or projects that add value to society and respect ecosystems.

Understanding all these processes, though demanding, was essential to establish a bridge between natural fibre producers, artisans, and local businesses, demonstrating that the circular model is a sustainable and profitable way to operate. This resulted in our two projects, animaná and HxN, designed to provide intelligent and creative solutions to existing problems in





their respective fields. While animaná manages tangible solutions under a sustainable model in the fashion industry, Hecho por Nosotros facilitates a collaborative environment by uniting stakeholders from all areas, in order to accelerate systemic change, building a transdisciplinary Co-Creative Leadership based on the exchange, connection, communication, and inclusion between cultures, genders, disciplines, and ages.

In recent years Hecho por Nosotros (HxN) has achieved notable recognition, securing special consultative status with the United Nations Economic and Social Council (UN ECOSOC) in 2016. This milestone opened doors to high level international forums, enabling HxN to advocate for its philosophy and collaborate with influential organisations committed to the Agenda 2030 for Sustainable Development Goals. Active participation in UN forums, including the High Level Political Forum and the UNPFII, showcases HxN's impactful engagement. The organisation's affiliations with Ashoka Argentina, the University of San Diego, and Stanford Angels & Entrepreneurs highlight its diverse partnerships. Additionally HxN's involvement in events like Catalysing Change Week reflects its commitment to driving positive social change through sustainable development and global advocacy.

Hecho por Nosotros and animaná recognise the urgent need to transform current production

and consumption models in the textile and fashion industry. With the garment production volumes increasing annually and minimal recycling, a shift toward circularity is deemed imperative. Over twelve years, they have cultivated a diverse network to identify and implement sustainable solutions. Focusing on camelid fibre communities in Latin America, they understand the technical and social challenges faced by cooperatives and MSMEs. To address the disconnect from global value chains, an ecosystem has been developed emphasising comprehensive training through HxN Capacity Building. This empowers artisans to navigate the industry independently, fostering a supportive environment for skill development. By equipping artisans with the tools to thrive in a competitive market while preserving cultural heritage, Hecho por Nosotros and animaná aim to drive sustainable development and resilience within communities.

The work with many artisan organisations in Latin America has shown that the heart of such an ecosystem is in the recognition of the value of the cultural proposal and the local product. Crafts in Latin America and other parts of the world are often only claimed for the quality of their fibres and raw materials, when there is also the possibility of conceiving it as a repository of ancestral knowledge from the different cultures that make up the various nations. This recognition

allows for a new projection that can favour economic, social, and cultural development, strengthening people's sense of belonging to their community and contributing to the development of individuals and communities from an activity that that not only generates material wealth, but also spiritual wealth.

By embracing this holistic perspective, we unlock boundless opportunities for holistic growth, where economic prosperity converges with social cohesion and cultural vitality. As Paula Ruiz Diaz said, reflecting on her role as a volunteer within the NGO and animaná, reaching out to the ancestral wisdom within our local communities is an eye-opening experience. It reveals the constraints imposed on the world by human hands and the potential to transcend them. It's a realization that alternatives exist, that genuine dialogue is possible, and that collective action holds the key to meaningful change. She sees herself as part of a growing movement, where individuals unite to shape a more hopeful future, fueled by the belief that each action, no matter how small, contributes to a world brimming with possibility. Let us honor and nurture these treasures, for in our threads and stitches lies the tapestry of our collective spirit, weaving a brighter future for generations to come.



## ARTISAN TESTIMONY: The Voice of the grassroots in the United Nations

*Gladys Anabela Perez , Wichi Community.*

My name is Anabela and I am a proud member of the Wichi community. I am part of a group of women artisans who continue to uphold the rich traditions passed down to us by our ancestors. For generations, our people have woven stories into every thread leaving connections to our heritage and the land that sustains us.

Our craft is more than just a means of making a living; it's a deeply ingrained part of who we are. The motion of our hands is already a part of us and each knot is a testimony of our resilience and determination to preserve our way of life.

As women of the Wichi community, we understand the importance of passing down our traditions to the next generation. That's why we take great pride in teaching our daughters the art of knitting, instilling in them not just the technical skills, but also a profound sense of cultural identity and pride. Through this shared practice, we ensure that our heritage lives on, woven into the fabric of our daily lives and celebrated in every garment we create.

Our creations are a declaration of our presence and our right to exist as indigenous people of this earth. As we gather together, connected by looms, we honour the land that sustains us, the ancestors who came before us, and the generations yet to come, our hands busy and our hearts full.



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### Any questions?

Contact the short  
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Email: [creativeshortcourses@ntu.ac.uk](mailto:creativeshortcourses@ntu.ac.uk)  
Telephone: +44 (0)115 848 2813



Design work by Elle Barclay as part of the live Paul Smith project at NTU

# Meet the Honorary Officers

In issue 3 2023 of textiles we completed our Meet the Editors series of interviews. Over the next few issues we will feature interviews with The Textile Institute Honorary Officers. Our first interview is with the World President of The Textile Institute Prof Malgorzata Zimmiewska CText FTI.

## Please tell us about your background and how you became The Textile Institute World President

My professional background began at the Institute of Natural Fibres and Medicinal Plant National Research Institute in Poznan, Poland after graduating from the Textile Faculty, Mechanical Technology of Fiber at the Technical University of Lodz. My main area of research is the development of natural fibres, lignocellulosic fibre processing, technologies and evaluation as well as modification to meet the needs of different textile applications.

My career covers different positions; from researcher within a textile laboratory to the head of the Laboratory of Physiological Influence of Clothing on Human Body, Head of Department of Innovative Textile Technology, Deputy Director for Research and then Director of The Institute of Natural Fibres & Medicinal Plants. Currently I serve as Science and Research Secretary.

I cooperate with the European Commission as a member of the Scientific Committee of the Circular Bio-Based Europe Joint Undertaking and serve as Vice Chair of Quality Control for Horizon 2020 and Horizon Europe. I am also a member of the Advisory Council for Central and Eastern European Initiative for knowledge-based Bioeconomy. I have led many international and national projects as well as projects within European Frame Programmes. I am an author and co-author of more than 180 scientific articles and 6 patents.

I became a member of The Textile Institute in 1996. With great enthusiasm I have attended The Textile Institute World Conferences, from Cairo in 2002 through to Huddersfield in 2023. They have always been an excellent opportunity to learn about the newest achievements in the textile area and to meet scientists and researchers from different countries in the world. They create a base for new research cooperation and friendship.

In 2015 I got the chance to be the chair of the 90th Textile Institute World Conference in Poznan in Poland. The conference was a great success. We gathered almost 200 participants from 35 countries, with representatives from each of the continents. We covered 150 oral presentations divided into 31 sub-sessions. It was honour for me to serve as the chair of the 90th TIWC.

I became a member of The Textile Institute Council in 2019 and received the Professional Qualification of Fellowship, CText FTI, in 2020

In 2022 I received notification I was short listed as a candidate for The World President of The Textile Institute. I am very proud that I now serve this role.



## What does the role of The World President of The Textile Institute entail?

The role of the World President of The Textile Institute is prestigious within the global Industries of Textiles, Clothing and Footwear. The role reflects and promotes the vocations and aspirations of The Institute as the professional body of those with this common interest and to encourage membership to The Textile Institute to enhance this still further. The World President attends and speaks at high profile events such as The Textile Institute World Conference, the Institute's annual AGM and the annual Parliamentary Lunch held at the House of Lords in November. The Presidency is largely an ambassadorial role for The Textile

Institute and is undertaken for a period of either one or two years, which gives continuity to the role, and helps the incoming President to grow into their term.

## What is your most memorable / proud moment since becoming World President?

The Parliamentary Lunch in 2022 was the most memorable moment for me since I have taken up the position of World President. The Lord Haskel CompTI CText ATI hosted the wonderful lunch in the Palace of Westminster. The event, in such amazing surroundings, was the first international meeting of The Textile Institute Members since the COVID pandemic. We could be together "in person" to exchange ideas, make new friends and colleagues.

It was a great honour for me to give a speech as The Textile Institute World President directly after Lord Haskel during such a wonderful Parliamentary Lunch in the famous Palace of Westminster.

## What are your plans and hopes for the future of The Textile Institute?

The legacy of The Textile Institute is built on respect and trust. The potential of The Textile Institute to gather together the textile society from around the World is its greatest strength. This can be built upon as we strengthen and improve the activities of our local sections. Another advantage of The Textile Institute is its association with a broad range of textile specialisations including fashion, medical and other functional textiles, technical (for example fibre based composites) as well as all type of fibres: natural, manmade and synthetic fibres. The Textile Institute continuously supports knowledge exchange, the development of innovations and knowledge transfer from research organisations to business entities.

The TI is attractive for all textile professionals, including potential new members, due to always being open to face new challenges. These come from the growing need to develop in the areas of biomaterials, innovative technologies, global climatic changes as well as solutions suitable for the demands on the textile supply chain. We can support this with the creation of special themes for the TIWC conferences, which are always appropriate to realistic conditions.

I look forward to building the future position of The Textile Institute based on these core strengths.

# Smart Textile:

## Soft electronics for a connected world

Smart Textile technology, also known as e-textiles, electronic textiles or Intelligent textiles, is an emerging technology that enables the seamless integration of flexible and soft electronics into fabric and fibres to create new functions that were never previously possible - such as biometrics tracking and heated garments - thus, broadening the possibilities of applications and revolutionising how we think and use electronics, clothing and textiles in our daily lives.



Mili Tharakan, COO of Smart Textile Alliance, is a seasoned inventor-business leader who has been practicing in the field of smart textiles since 2004. She founded and led the Smart Textiles Innovation Lab at Welspun and went on to develop, manage and launch smart home textile products on the global market with the company's corporate start. Here she takes us through recent developments in Smart Textiles and introduces the Smart Textile Alliance's Trusted Supplier Directory.

Smart Textiles sits under the larger umbrella of Wearable Technologies and Internet of Things (IoT). In the last 10 years there has been a huge increase in the adoption of Wearable and IoT technologies by consumers and it is believed that the next evolution of some of these products will be in the form of a smart textile. The watches that measure heart rate will now be integrated into sportswear that measures heart rate and track body movement.

The Smart Textiles industry is still a nascent one, but it has made its presence felt across a wide range of areas already. Health, sports, lifestyle, medical, fashion, automotive, interiors and aerospace are some of the sectors that have shown interest and adoption of the new technologies.

The most familiar and easily accessible consumer product in the market right now is the heated garments offered at an affordable price. Other areas with steady growth are the fitness, well-being and assistive tech industries. The sensing capabilities of e-textiles means that garments can replace some of the devices or gadgets that are traditionally used to track biometrics while

increasing comfort and accuracy of these products. Smart Textiles can unobtrusively sense and gather insights on health metrics such as heart rate, breathing rate, temperature, muscle performance, ECG readings, body movement, stress, sleep and other biometrics.

E-textiles can not only sense input, but can also actuate or respond to input. These capabilities include fabrics that can emit light and fabrics with electro muscular stimulation functions that can activate muscles and nerves for therapy or creating a sensory experience. The possibilities of applications when combining textiles and electronics is therefore wide and currently both small and large companies are exploring its true potential and opportunities.

The supply chain for manufacturing these garments is becoming stable and streamlined in selected areas with options for brands to buy white labelled solutions without having to develop the technology in-house. Companies such as ADD Heat, Clim8, Loomia and Nanoleq are partnering with brands to supply these solutions. This has increased the speed to market of products and reduced development and manufacturing costs.

### Making Smart Textile

Smart Textiles sit at the intersection of textiles, electronics and software so to understand the making of smart textile products, it is important to consider all of these aspects. One can use the Smart Textile Stack model (developed by Smart Textile Alliance) to understand the building blocks of a product in four layers. In research, development, manufacturing and use of smart textiles, all 4 of these layers need to be considered.

**1. Fibre and Fabrics:** Developments in material science has enabled the integration of conductive properties to textiles. There are conductive fibres and yarns that enable one to weave, knit and embroider electronic circuits and sensors. Conductive inks, which are now



1. Amohr. Contact tapes with non-insulated tinned copper wires

2. Smart Textile Stack

made specifically for textile applications, make it possible to use screen printing techniques to print circuits and build electronics onto the surface of a fabric. By changing the materials of traditional electronic components, such as metal and plastic, to creating components with yarns and fabrics, it is now possible to create new electronic applications that are soft, stretchable, sew-able, washable and more.

**2. Connector:** It is often necessary to connect the conductive fabric or garment to some of the hardware components of a product. This could be a small clip-on device that holds the battery, bluetooth module etc. inside a small plastic casing. It could also be a connection to a portable battery which you would find in a heated jacket. Connectors are critical to the product as it enables the soft electronics to connect robustly to the hard electronics. This point is quite a crucial piece in the building block.

**3. Hardware and Software:** Like any electronics product, there will be hardware components that are part of smart textile products. As mentioned above, these could be small devices attached to the fabrics to enhance the capabilities of the textile. This device would be where the data collection, low level processing and data transfer to app would take place. Sometimes, hardware components themselves will be integrated into the textiles such as LEDs, RFID tags etc. Software would be required to connect, analyse and respond to the data collected from the smart textile. An app enables the user to see results or actions they need to take based on the data collected.

**4. Handle and Care:** This is a critical layer of building smart textiles as extra developments and care need to be considered for fabrics with electronics integrated into them. 5-7 years ago, washability was a huge concern for the industry, but many solutions developed today are washable and adhere to many of the textile requirements we expect. Recycling and product end of life are two areas that demand solutions. Research in the areas of biodegradable electronics, strategies for safe separation and disposing of electronics as well as recycling materials are underway and the industry is actively working towards finding a sustainable approach to meet the growing demand to find better solutions across the board from materials, manufacturing processes and end of life.

Due to the potential of smart textiles to integrate electronics into our everyday lives, there has been a lot of interest from large technology companies as well as technology entrepreneurs. A brief look into the smart textiles and e-textiles patents granted in the last 5 years show leaders such as Apple, Microsoft, IBM and Samsung investing in soft technology and smart textile patents. Many of the successful e-textiles



companies are technology start-ups and this begs the question what the role of current leading textile and fashion companies will be in the future. Could this be a missed opportunity for the textile industry, leaving them to catch up rather than lead?

As mentioned, Smart Textile enables a wide range of applications. Following are a few examples of products currently available in the market.

**Sports tech: Prevayl** – sportswear with ECG textile sensors embedded in the clothing. The SmartWear kit tracks breathing rate, heart rate, temperature and movement data which is analysed to give the wearer insights into their fitness and performance during workouts.

**Wellness tech: Owlet** – smart socks for newborn to 5-year-olds that track their heart rate, sleep trends and oxygen levels. Parents are alerted if there is a change in data and need attention.

**Assistive tech: Cionic – The Neural Sleeve** for the leg enables those with mobility impairment to improve walking and build up strength in their leg. The Sleeve tracks movement, limb position and muscle firing and applies electrical muscle stimulation to assist the wearer to walk.

**Entertainment and Health tech: Teslasuit** – the full body suit enhances immersive experiences by stimulating the muscles and nerves on the body to create realistic sensations and feelings that reflect what the user might be experiencing in







the VR world. The suit can also capture full body motion tracking and biometrics.

**Workwear tech: Bosch** – heated workwear jackets with three levels of heating at three zones across the body.

**Security and PPE tech: Sun fibre** – wearable lighting technology solutions that can be sewn or attached to uniform. This technology improves visibility and identification of personnel during night operations. The flexible lighting can be controlled and used on-demand. This technology can be integrated into the uniforms of paramedics, police, rescue teams, night workers at construction sites or airports and more.

**Light tech: Carpet light** – replaces bulky film and photography lighting equipment with fabric lamps that provides professional lighting. The light-weight fabric solution makes it easy to fold, carry and set up even in tight spaces and enables new lighting arrangements that are not possible with traditional lighting stands.

#### Challenges to overcome

Manufacturing Smart Textiles is a really dynamic space with expertise from textiles, hardware design, production engineering and programming coming together to create products. There are a small but growing number of companies who can make product prototyping and manufacturing faster and more affordable in low to medium volumes. This has enabled many more startups and companies to engage in Smart Textiles without having to build out internal teams with all the expertise.

Considering that Smart Textiles is evolving at the intersection of two giant industries - Textile and Electronics, there are some challenges in

in Estonia.

Another challenge faced by the industry is a lack of standards. This leads to an increase in cost and risk in manufacturing Smart Textiles products. To make a comparison, the mobile or laptop industry is standardised so you can configure your own computer. Unlike this, in the Smart Textiles industry, there are few “plus and play” solutions that one can put together to create a solution you want. This has resulted in a range of proprietary solutions in the market with no clear leader. Organisations such as Smart Textile Alliance, AATCC, IPC and others are defining standards for testing and developing these products to enable faster development and adoption of these technologies.

#### Conclusion

Smart Textiles drives a new era where fabrics become intelligent interfaces with exciting capabilities and applications that have never been possible before. The adoption of Wearables and IoT products have laid a pathway for e-textiles to be the next step in the evolution and adoption of products. Although there are challenges to overcome, the increasing drive towards soft and ambient technology is driving investment and development of applications across industries. As the industry is beginning to mature and gain traction, it is an exciting time for companies to innovate at the intersection of textiles, fashion, electronics and technology.

For further information about the industry and how you could get started or be involved in this emerging field, please contact Smart Textile Alliance at: [info@smarttextile.org](mailto:info@smarttextile.org)

Learn more about STA and its activities from the website: [www.smarttextilealliance.com](http://www.smarttextilealliance.com)

streamlining production of e-textiles under one roof, especial for high volume products. The existing supply chains for electronics and textiles are mature and dedicated to their own sector and doesn't support cross-disciplinary developments easily.

The encouraging news however is that there are specialised manufacturers who can provide the expertise and manufacturing capabilities in low to medium volume. Companies such as Born Germany, who specialise in fashion knitting has a dedicated Smart Textiles Hub to support such work, Loomia in USA, Myant in Canada and Protex

Smart Textile Alliance's trusted Supplier Directory is a helpful resource for those looking to find the right partners and solutions for their Smart Textile development needs. This is a curated directory that showcases those across the supply chain that have the expertise to support both R&D and production.

The Directory is curated by Smart Textile Alliance (STA), a non-profit entity, on a mission to establish a more standardised Smart Textile industry, by fostering collaboration to provide off the shelf components and solutions within Smart Textiles. STA also offers a range of services including undertaking research projects, product development, matchmaking partnerships and product evaluation.

#### Current companies in the Trusted Supplier Directory:

**Amohr:** Woven conductive tapes and sensor ribbons that can be used to mount electronic components and sewn to fabric.

**Born:** Develop and manufacture knitted sensors and conductive fabrics with intelligent functions for various applications including medical and sports.

**ITK:** As a developer and systems integrator, they translate smart textile ideas and concepts into products ready for manufacturing.

**Loomia:** Modular, soft and stretchable fabric circuits that have various functions such as heating, lighting, pressure sensing and more.

**Nanoleq:** Bio-signal tracking e-textiles components and solutions for applications such as health, sports and safety.

**Tytext:** Development and manufacturing of smart textile medical garments.

# Institut für Textiltechnik RWT

**The Institut für Textiltechnik (ITA) of RWTH Aachen University celebrates its 90th birthday in 2024. Since its beginnings, it has developed steadily and is now one of the largest textile research institutes in the world. Dieter Veit, the Academic Director of ITA, describes to us the courses and some of the research work currently being carried out at ITA.**



ITA offers various degree programs and at the same time conducts research on a wide range of textile topics. The courses on offer include Bachelor's and Master's programs in mechanical engineering and industrial engineering as well as trade school teacher education.

The lectures on all relevant textile topics: fibres, textiles, composites, their production and machines etc. are supplemented by numerous practical exercises in the laboratory and technical centre as well as many excursions to industrial companies, especially in Germany. In addition to the traditional lectures on fibres and textile manufacturing processes, the range of courses has been expanded in recent years to include other current topics. These comprise simulation methods for processes, machines and products, the use of artificial intelligence, the creation of life cycle assessments and other topics relating to sustainable textile production, Industry 4.0 in textile technology etc.

A special feature of our course programs is the active involvement of students in current research projects. For example, there is the so-called "research lab" early on in the Bachelor's degree. There, students are first taught how projects are planned and carried out, how the test results are scientifically evaluated and how a report is produced. The students then carry out their individual research projects under supervision,

write a report and give an oral presentation about their findings. The second research project is carried out in a group of 2 - 5 students on a larger topic before the Bachelor's thesis concludes the course. An internship in industry, lasting several months, is also an integral part of the Bachelor's degree.

Almost all Bachelor's graduates go on to study for a Master's degree. To ensure that they receive the broadest possible education, they are free to choose a third of their subjects in the Master's program from the entire range of subjects offered by RWTH Aachen University, which comprises several hundred lectures. The Master's program is completed with a research project lasting one term, so that graduates have actively worked on at least four projects during the course of their studies.

Most students complete at least one stay abroad during their Bachelor's and Master's degree course. They can either study or carry out research work at a university or in industry. This can either take place within the framework of Erasmus+ in Europe, where ITA has its own student exchange agreements, or they can use one of ITA's numerous international contacts in more than 15 countries outside Europe. As a result, they not only expand their specialist knowledge, but also learn other languages and get to know foreign cultures. Both are important

# H Aachen University



prerequisites for a successful career in the international textile industry.

Around 150 students work as student research assistants at ITA during their studies, allowing them to gain further practical experience while earning an additional income. Thanks to this structure and the corresponding content, graduates are excellently prepared for the demands of industry.

Most graduates work in the chemical fibre and

textile industries as well as in textile machinery and plant engineering. Because all study programs consist mainly of "general" technical subjects with only about one third textile-related, graduates can also go into any other technical industry.

All lectures at the ITA are held in German. In order to open up the study programs to English-speaking students, a Master's course in Textile Engineering was established. Which is

accredited by The Textile Institute. It is aimed at international graduates with a Bachelor's degree in Textile Engineering. All lectures in the first semester are held in English, in the second semester there is a mixture of German and English lectures, in the third semester an industrial internship and in the fourth semester the Master's thesis, which can also be carried out in industry. During the program, students attend a German language course to speed up the process of learning the language. Graduates of this program are also excellently prepared for industry. Around half of them stay at ITA and go on to do a doctorate in engineering.

The doctorate in engineering at ITA takes 5 years. Doctoral students work independently on several projects on the topic of their doctoral thesis and often also in other areas. They independently submit applications for projects in the order of €150,000 per year and also supervise students in their research work. The doctoral students are paid like engineers and work in one or more of a total of 14 research divisions at ITA and are supervised by an experienced researcher. This model in no way corresponds to the classic PhD. Rather, the doctoral students take on management tasks at an early stage and organise and manage their projects independently from proposal to completion. As a result, they generally take on a management role in industry directly after completing their doctorate. Numerous professors at one of the many universities of applied sciences and universities in Germany that offer courses in textile technology have completed their doctorate in this way at ITA.

In research, ITA offers one-stop solutions from fibre production to yarn and textile production to the end product. The technical centre comprises more than 200 machines and test stands, mostly in industrial size. The more than 100 scientists and doctoral students, together with around 150 undergraduate and graduate student employees and a further 40 technicians, conduct research



*Student in lab with VR-2 glasses*

*Technical stitching as reinforcement*

*Students testing a smart textile development*



on a wide range of topics. These include fibre production from synthetic polymers (e.g. PET, PA) and, against the background of sustainable textile production, increasingly also cellulose based fibres. Carbon and glass fibres are also being developed with a focus on new raw materials and energy consumption. Furthermore machines for spinning preparation and yarn production are developed. The ITA has nearly all technologies for the production of textile structures, both for clothing and in particular for technical textiles. Here the focus is on composites for sports (e.g. longboards and skis), automotive applications (car bodies and interior structures) and aircrafts. Hydrogen fuel tanks with textile reinforcements (e.g. braids) are also being developed. ITA's building is made of textile-reinforced concrete and has a translucent façade also made of textile-concrete composites, both developed at ITA. Another major research focus is medical textiles, in particular textile implants that go into the human body. Here a close collaboration with the RWTH Aachen University clinic and other partners is essential. Smart textiles are also important, sensors of all kinds are developed and integrated into textile structures using a range of processes including stitching and printing.

The aim of most projects is to develop either new products (fibres, textiles, end products) or machines and components that can be used by industry. For more than 30 years the use of artificial intelligence to optimise product properties and machine settings has also been a focal point, with many applications in use commercially. Recycling is a cross-divisional research topic that we work on both in Aachen and at our subsidiary in Augsburg, in the South of Germany. The focus here is on developing solutions for industry to reduce waste and make products of all kinds recyclable. Most recently, a system was developed to spin new yarns from used workwear across all process stages to produce clothing textiles, e.g., sweaters, that are as good as new. Starting with worn knitwear (e.g., T-shirts) which were cut into small pieces, the resulting fibres were completely recovered and ring-spun into a new yarn by adding 35 %

virgin PET fibres. This was a great improvement to the current standard for recycled fibres of OE-rotor yarns of comparatively low quality. The yarn was knit again and turned into a new jumper. For the first time, a high-quality product was produced with industry partners all along the production chain in industrial scale (<https://walk4recycling.com>).

Most of our research is carried out within publicly funded projects and is supplemented by direct industrial research with international partners and customers. This funding is crucial for ITA's success story as only a minor part of the required funds comes directly from the government and there are no study fees.

Most research topics are interdisciplinary. Hence, we often cooperate with other institutes of different disciplines, both national and international.

In order to simplify industrial contract research for our customers, ITA GmbH company was founded in 2003 to handle the administration of these industry-funded projects. For some years now, we have also been offering training courses for industry, both nationally and internationally, through its subsidiary "ITA Academy".

In a world that is constantly changing, our research priorities have also been changing over the last 90 years. Starting with the processing of cotton, wool and silk, today's topics focus on medical applications, composites for everyday life, smart clothes, artificial intelligence and industry 4.0. We look forward to the challenges of the future and believe that both we and our graduates are well prepared for them.



## MEMBER NEWS

### THE TEXTILE INSTITUTE AUSTRALIA SECTION - 2023 IN REVIEW

The Textile Institute Australia Section (TIAUS) is back in action and finished 2023 with its own Parliamentary Lunch at the Parliament of Victoria in Melbourne. During 2023, the Section established a new Committee with Dr Saniyat Islam as Chair, Sylvia Walsh as Immediate Past and Vice Chair, Dr Kate Kennedy as Honorary Secretary, and Dr Rebecca Van Amber as Honorary Treasurer.

The Section has been busy writing submissions for a Federal Government Senate inquiry into greenwashing and a Victorian Government Upper House industrial hemp industry inquiry. In addition, the Section made a submission to the Australian Bureau of Statistics review of the Australian New Zealand Standard Classifications of Occupations (ANZSCO) to highlight the need to address occupational gaps in digital textile printing with the Textile, Clothing and Footwear manufacturing trades.

The Section was delighted to have Saniyat and Sylvia represent the section at the TIWC at the University of Huddersfield in July 2023. Saniyat presented a paper, and Sylvia, as the Immediate Past Section Chair, continued her previous work through networking to re-establish old and make new contacts.

While this year's Australia Section Parliamentary Lunch was informal, the Section was presented with a copy of the report from the Parliament of Victoria Legislative Council Economy and Infrastructure Committee, The industrial hemp industry in Victoria: Inquiry 2023.

The Section plans to make the TIAUS Parliamentary Lunch a regular event. In 2024, they look forward to building their membership base and assisting with Textile Institute Professional Qualification development. They are sure there will be plenty to do throughout the year with their ongoing participation in Standards Australia textiles and clothing-related committees and the local need for accurate textile knowledge from a trusted industry source.

### TI MEMBERS AWARDED MBE IN TI MEMBERS AWARDED MBE IN KING'S 2024 NEW YEARS HONOURS LIST

The Textile Institute is delighted to announce that the following Members have been awarded MBEs in the Kings 2024 New Year Honours List:



Roselind Sinclair MBE  
CText ATI For services to the Arts



Graham Waters MBE  
CText FTI For services to Innovation



### PROF DR AMIT RAWAL CTEXT FTI RECEIVES PRESTIGIOUS KING CARL XVI GUSTAF PROFESSORSHIP FOR 2024/2025

The TI is delighted to congratulate TI Member Prof Dr Amit Rawal CText FTI on his award of the King Carl XVI Gustaf Professorship in Environmental Science for 2024/2025. This is a prestigious professorship, which is awarded to a single person each year and is open to all disciplines. This is the first time the professorship has been awarded to a textile engineer.

Prof Dr Rawal's professorship will be hosted by the Swedish School of Textiles, University of Borås, Sweden, and an award ceremony will be held at the Royal Palace, Stockholm.

For more details visit: <https://shorturl.at/eiuyQ>



### THE TEXTILE INSTITUTE LONDON AND SOUTH EAST ENGLAND SECTION AND THE MILLS FABRICA EVENT REVIEW



Titled the 'The Mills Fabrica Networking Breakfast: Viscose - At What Price?', visitors invited to the event were introduced to the subject with an overview of MMCFs given by Elly Dinnadge of Canopy - a not-for-profit organisation working to protect forests worldwide. This was followed by a deep-dive panel conversation with industry leaders in fibre production, traceability, and fashion sourcing.

The panel was led by Gill Gledhill, Director, GGHQ Fashion Intelligence, and fashion and textile industry journalist and consultant, who questioned the panel on facts of production, experiences of working with MMCFs and views on next-generation solutions for more sustainable processing. Ideas emerging included more sourcing of raw materials from waste products (rather than new trees), working with managed forests, and increasingly using closed-loop systems in the processing of cellulosic fibres, as is done by Lenzing with its lyocell fibre, branded Tencel.



The panel of experts were (left to right):

**Ashley Hammond** - Business Development Manager UK & IR, Lenzing

**Karen Perry** - Sustainability Manager: Raw Materials, John Lewis

**Elodie Gilart** - Senior Sustainability Manager, M&S

**Elly Dinnadge** - Senior Corporate Campaigner, Canopy

Also contributing by video was **Jack Wyse**, Business Development Manager, Textile Genesis, who described the company's work in supply chain management. Textile Genesis is a pioneering traceability platform custom-built for the fashion & textile ecosystem.



**TECHNICAL TEXTILES SIG – GET INVOLVED TODAY**

In 2023, The Textile Institute relaunched its Technical Textiles Special Interest Group (TTSIG), holding a series of informative events on a diverse range of industry relevant topics.

Further events are being planned for 2024 bringing together experts from around the world. The TTSIG is extending an open invitation to all interested Textile Institute Members to sign up and get involved.

Technical textiles are manufactured primarily for their performance and functional properties rather than their aesthetic or decorative characteristics. They are employed in a vast range of end-use applications ranging from reinforcements for

composite parts in the aerospace, automotive and wind industries to high performance materials for building and construction, filtration and industrial production.

“We had a fantastic response to the events we organised during 2023, and it would be great for this network to expand,” said TTSIG Chairman Charles Wood. “The next few years are going to be a time of very significant change and technical textile technologies will provide some of the key solutions to some of society’s biggest challenges, and particularly climate change. They will also be instrumental in making advances in construction, energy generation, electric vehicles and health

monitoring. We urge all TI Members with an interest in the sector – whether from industry or academia – to join our platform and take part in some extremely rewarding and information rich presentations and discussions.”

The Textile Institute’s Special Interest Groups organise local, national, and international events aimed at stimulating new business ideas and providing opportunities for both individuals and organisations to raise their profile.

For more information contact Charles Wood CText FTI, TTSIG Chairman, or Rebecca Bennett CText FTI, TTSIG Honorary Secretary via email at [techtexsig@gmail.com](mailto:techtexsig@gmail.com)



**Venue: The International Anthony Burgess Foundation**  
 3 Cambridge Street Manchester M1 5BZ

**Date: Wednesday 22 May 2024**

**Call for papers: invitations for abstract submission is now open.**

**Prize for the best presentation.**

**For more information:**  
<https://www.textileinstitute.org/section/manchester-north-west/>

Fashion  
 Furnishing  
 Health  
 Sports  
 Medical  
 Automotive

**Textiles and Life 4**

**A special one day conference presented by students for students**

Organised by The Manchester and the North West Section of The Textile Institute





**REBECCA PRICE 1972 – 2024**

It is with great sadness that The Textile Institute announces the death of Rebecca Price, Executive Director.

Rebecca sadly died 2 January 2024 at Salford Royal Hospital, Salford, with her fiancé by her side. Rebecca had been recently diagnosed with cancer and she fought a short but very brave battle. Her death was sudden and unexpected although she faced many previous health challenges whilst in hospital.

Rebecca had been with The Textile Institute for 23 years and was known around the globe for her work in TI Publications and Professional Qualifications.

It is a time of great sadness for many, and our thoughts are with friends, family and staff at The Textile Institute International Headquarters at this difficult time.



**OBITUARY - ROBERT DEWHURST – FORMER CHAIRMAN OF THE TEXTILE INSTITUTE COUNCIL**

Robert Adrian Dewhurst became a member of The Textile Institute in 2011. His father, Stanley, had worked in the textile industry in Bradford, West Yorkshire, UK and so it was a natural career choice for Robert too. His mother, Margaret, hailed from Airton in the Yorkshire Dales and it was here that Robert loved to spend time with his siblings and cousins as he was growing up. On gathering stories and memories of Robert, a close cousin remarks that 'people have said that Robert was undemanding, sincere, unpretentious company; easy going with a terrific sense of humour and a very good eye for the absurd'.

Robert was tremendously enthusiastic about textile materials and particularly wool. He was keen to use the fibre in innovative ways and was always ready to show new developments to others. He had the ability to talk about his materials in a way that those with little textile knowledge could understand. Institute members who were lucky enough to be invited to join him for lunch at home, often spent hours discussing his ideas, being simultaneously entertained by his beloved dogs.

Robert proudly, but humbly accepted his Fellowship of the Institute in 2012. He became a member of Council and subsequently Chairman of the Board and Council (2016-18). He was particularly keen to encourage companies to become Corporate Members and where he succeeded in this recruitment drive, he did so through his straight-talking manner and affable nature.

In later life, Robert also became a member of the Worshipful Company of Woolmen and a Freeman of the City of London.

Probably his greatest love, though, was for his dogs. Over the years he owned several Springer Spaniels, one of which was Duke of York (or Duke/ Dukie) whom another relative described as the most 'undisciplined dog that ever existed'. But it shared Robert's personality – always joyful, always looking for and expressing its love for others'.

The Textile Institute Headquarters has received many messages from Members on hearing of Robert's sudden death in November. He has been referred to as a loyal member, an inspiration to others and someone who they simply enjoyed working with.

Robert Dewhurst, Fellow and former Chairman of The Textile Institute, will be sorely missed by the textile community. His funeral took place on 27th November 2023 where, according to his wishes, he was buried close to his mother's resting place in the beautiful, peaceful churchyard at Kirkby Malham.

Thanks to Robert's cousin John Foster and Textile Institute CEO Stephanie Dick for contributing to this obituary.

**The Textile Institute is also saddened to learn of the death of Philip Sumner CText FTI**

## Events update

### The Textile Institute Parliamentary Lunch 2023 HOUSE OF LORDS, LONDON, UK

On 3 November 2023, the TI held the Parliamentary Lunch, generously hosted by The Lord Haskel CompTI CText ATI at the House of Lords, London, UK.

The Cholmondeley Room hosted guests from around the world for a three course lunch following a drinks reception. The event has become one of the networking highlights of the TI calendar.



The Lord Haskel welcomed the distinguished guests and thanked the team at the TI for organising the lunch, he congratulated The Textile Institute on all of its hard work throughout the year.

Following the lunch, The Lord Haskel introduced VIP guest speaker Karla Magruder, Founder of Accelerating Circularity. Karla gave a scintillating speech on how she strived to create a project which had real meaning and after gathering some of her friends in the textile industry, she founded the nonprofit organisation



'Accelerating Circularity' which focuses on textile to textile recycling systems at a commercial scale through a collaborative stakeholder approach. Their mission is to regulate new circular systems and business models, to take used materials and turn them into new raw materials so that we can have a world where materials are no longer wasted.

Karla's message was that there has been very little action, the industry needs to do more than just talk, new policies need to be introduced, collaboration needs to happen and new technologies need to be commercialised if there is ever going to be a positive change in the industry where sustainability is concerned. Karla believes that nothing will be resolved until new business models have been established for a more sustainable future.

The final speaker of the day Textile Institute Chairman of Council Prof Jess Power CText FTI, University of Salford was welcomed and addressed the distinguished guests: "In July this year, The University of Huddersfield hosted the 92nd World Conference: Sustainability of the Textile and Fashion Supply Chain - Transitioning to Zero Carbon and Zero Waste. We were joined by over 200 participants from around 20 countries to focus and share best practice. The Conference Chairman Prof Parik Goswami CText FTI is here with us today and I would like to say thank you for being such wonderful hosts. It was a wonderful gathering of likeminded people and we were graced by a visit from HRH The Princess Royal, who demonstrated



exceptional knowledge in relation to the challenges and opportunities facing our sector.

The key to reducing textile waste, increasing recyclability, and maximising the lifespan of our products needs the very best from across our sector and beyond to come together to design credible solutions to these wicked/complex problems.

Today we have begun to have and will continue to have those conversations. We are the textile and fashion family, amongst us we have an abundance of Individual and Corporate Members from academia, commerce and the charity sectors, with a wealth of knowledge, skills and attributes and it is truly an honour to be here to share in the rich discussions that have taken place and I hope this



## INDUSTRY SHORT COURSE

### Introduction to Textiles 17 - 19 September 2024, The Midland Hotel, Manchester, UK

The Introduction to Textiles Short Course is organised for the benefit of all those who are engaged in the manufacture, research and development as well as the commercial aspects of textiles business.



The course is formed of seven separate topics: Fibres, Yarns, Weaving, Warp & Weft Knitting, Non-woven Fabrics, Dyeing & Finishing and Fabric Testing & Analysis.

Following the course, attendees will receive a certificate of completion which can be used towards a TI Professional Qualification. Please see the website for more details via <https://rb.gy/pylss>

*'I found all of the course content useful and interesting. Although not everything discussed was in my specific field, it helped to understand other processes'.*

Adele Rich, Mobus Fabrics Ltd, 2023

*'All of the modules were really interesting. They were so in depth, I have enjoyed learning about the different processes'.*

Tiffany Lowe, Roy Lowe & Sons, 2023

**Fibres and Yarns**  
**Fabric Testing & Analysis**  
**Warp and Weft Knitting**  
**Nonwoven Fabrics**  
**Weaving**  
**Dyeing and Finishing**

**3 DAYS FULL COURSE**

**Member: GBPE700.00**

**Non Member: GBPE850.00**

**Student: GBPE450.00**

**Delegate: GBPE810.00\***

\*including Introductory Membership of The Textile Institute

Rates for individual days are also available. Rates are inclusive of UK VAT.

Refreshments, lunch and supporting course materials are included in the price

Please contact Robyn Ingham, senior events coordinator ([ringham@textileinst.org.uk](mailto:ringham@textileinst.org.uk)) for more information. For full details, please visit the website via <https://rb.gy/vlj6b>







will be the start of new networking opportunities leading to impactful outcomes.

Sustainability, futureproofing for the next generation, developing technical/design skills and increasing our global reach and international family are some of the areas we are going to be exploring further in the next 18 months at TI Council and I know our sections across the globe are ramping up their activities after the global pandemic to ensure we are supporting members near and far and with your continued support we will achieve great things.

I want to say a tremendous thank you to The Lord Haskel for once again hosting this marvellous



event, a special thank you to Taylor and Francis for their generous sponsorship, another thank you to Karla for her inspiring and thought provoking speech, a thank you to all the TI staff who have worked behind the scenes to help organise the day, and an extra special thank you to you all for your continuous support throughout the year and for joining us to celebrate and network in this special place.

As always the event was a great opportunity to network and meet fellow professionals within the textile industry.

I am going to paraphrase the words from a previous Chair. The TI is the go-to place for anyone



working along the textile/fashion supply chain, so if you want:

- some specific training,
- the answer to a problem you're encountering;
- to advertise or secure a position in this fascinating industry;
- to add to your qualifications so you have a professional edge over your competitors;
- to stay up to date with what's happening in the industry or in research
- to recommend someone for an award because of the amazing work they do then, please contact The Textile Institute headquarters, we would be delighted to hear from you.



## Meet the Tutors

The Textile Institute Short Courses



**Prof Subbiyan Rajendran**  
CText FTI

Raj is currently Emeritus Professor at the University of Bolton, UK. He has previously held the position of Professor of Biomedical Materials and STEM Champion. He has 39 years of academic experience, has published 181 research papers that include 11 books and 8 patents. He has been honoured with a prestigious medal by The TI for his devotion to the furtherance of scientific knowledge concerning fibrous materials. Raj received a prestigious Research Fellowship award from UNIDO. He is a Fellow of The TI and a member of Council and Professional Qualifications Committee.



**Mr Simon Burnett-Boothroyd**  
CText FTI

Simon is a consultant in a broad spectrum of textiles. He has an expansive portfolio in development of products from medical specialisms to high performance outer wear fabrics. Simon is a patent holder in woven fabrics in the PPE market and currently sits on the standard body as an industrial expert in this field. He is a published author and regularly writes for the fire times. He has guest lectured internationally on PPE and Medical textiles. He is also a committed member of the TI council.



**Mr Adrian Wilson**

Adrian is an analyst and writer specialising in the technical textiles, nonwovens and composites industries. He is the owner of AWOL Media and the consulting editor for Sustainable Nonwovens, International Filtration News and Technical Textiles International, while contributing to many other industry titles. He is also the author of numerous reference books on these industries.



**Dr Elizabeth Gaston**

Elizabeth is Senior Lecturer in Fashion at Northumbria University, UK. She has extensive experience in knit design, research and education including many years running short courses in knit design and technology at the University of Leeds, UK. Her research interest extends from craft practice to virtual manufacturing and she has lectured widely worldwide.



**Dr Xiaogang Chen**  
CText FTI

Xiaogang is a Reader in the School of materials at the University of Manchester, and is a trained textile scientist and technologist. He obtained his BSc and MSc degrees from China and his PhD degree from The University of Leeds in the UK, specialising in textile engineering. His teaching career in textile technology started in 1985 in China and continued in the UK from 1994. He is an active researcher into textile engineering, textile composites, and technical textiles, in particular ballistic protective textiles. His researches are funded by the EPSRC, DTI, Home Office and MOD, as well as from industry.



**Mr Ian Smith**  
CText FTI

Ian is a Textile Consultant working with companies around the world on Textile Wet Processing. A technical dyer with specialisation in the Wool and synthetic fibre sectors. He has run training courses on textile wet processing for buyers and designers of several high street brands, as well as recently developing a technical training course for the Carpet manufacturing sector. He works as a consultant to the World Bank, and other NGO's as well as major processing and chemical organizations on a global basis, with an emphasis on cleaner production and sustainability.



**Dr Hugh Gong**

Hugh Gong graduated in Mechanical Engineering from Dong Hua University (Shanghai, China) in 1984 and obtained his PhD from the University of Manchester in 1989. He then spent three years managing the Coats Viyella - Marks and Spencer Fabric Centre before taking up a lectureship in the Department of Textiles, UMIST in 1992. His main research interests are in fibrous structures such as yarns, nonwovens, nanofibres and textile composites, and in the performance measurement, modelling and recycling of flexible materials. He served as the Director of Postgraduate Studies in the School and Chair of the Postgraduate Degrees Panel in the Faculty of EPS.



## PARLIAMENTARY LUNCH



**8 NOVEMBER 2024, HOUSE OF LORDS, LONDON, UK**

The Textile Institute is delighted to announce that the Parliamentary Lunch will be held on 8 November 2024.

Everyone is welcome at this prestigious event, members and non-members are invited to register.

The TI holds a lunch in the Cholmondeley Room at The House Of Lords, London, UK, which is generously hosted by The Lord Haskel CompTI CText ATI, a past World President of The Institute.

Members and guests will have reception drinks, a three course menu on the terrace, and all with historical views of the Thames and its famous architecture.

We look forward to welcoming guests to the 2024 event.

If you would like to reserve a place or table please contact Robyn Ingham, senior events coordinator, via [ringham@textileinst.org.uk](mailto:ringham@textileinst.org.uk).

## THE TEXTILE INSTITUTE AFFILIATE PARTNERSHIP SERVICE



**The Textile Institute is delighted to welcome organisations to enquire about the new Affiliate Partner Service.**

The Institute introduced this service to promote organisations who have courses Accredited and / or Approved by The Textile Institute. The courses can be delivered either face to face or digitally through the organisations dedicated learning space.

The Affiliate Partner is responsible for registering delegates and issuing all required equipment, learning materials and support.

Affiliate Partner courses are promoted via TI media including the website, emailing and social media to the TI's entire network.

The Textile Institute also offers Approval and Approval with Credit to providers of in-house training, short courses, on-line delivery and programmes not otherwise eligible via the accreditation route.

The Textile Institute accredits a wide range of courses globally within all areas of textiles, clothing and footwear. Students who graduate from these courses can apply for their professional qualifications after a shorter period of work experience and in some cases directly on graduation.

For more information regarding Accreditation and Approval of courses please go to <https://shorturl.at/jzJL0> To make an enquiry please contact Robyn Ingham, senior events coordinator via [ringham@textileinst.org.uk](mailto:ringham@textileinst.org.uk)

# techtex

## TECHTEXTIL 2024

**23 - 26TH APRIL 2024,  
MESSE FRANKFURT, FRANKFURT,  
GERMANY**

Techtextil is the leading international trade fair for technical textiles and nonwovens.

At the upcoming Techtextil from 23 to 26 April 2024, international exhibitors will present the entire spectrum of technical textiles, nonwovens, functional apparel textiles and textile technologies. Texprocess, the leading trade fair for the apparel and textile processing industries, will be held parallel to Techtextil.

The Textile Institute will be exhibiting and look forward to welcoming you at Hall 12.0, Stand A38. If you would like to make an appointment to visit the stand, the TI team or for further information, please visit <https://www.textileinstitute.org/event/techtexsil-2024/>



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## PRESENTERS DIRECTORY

**The TI is looking for Presenters for it's events and to inspire the young minds of our future, provide training to members and delegates both digitally and face to face and who are happy to be listed as a potential speaker at events (TI and non-TI events)!**

A directory of international presenters from industry and academia is held at the TI International Headquarters for members to access. The directory lists individuals and organisations willing to give

presentations on their specialist subject(s).

The Textile Institute holds a number of events, training courses and bespoke training courses during the year which require the rich knowledge

of experts and presenters. These events include The Introduction to Textiles Short Course, Clothing Short Course, Tea with the TI Webinars, Seminars, Section and Special Interest Group Events and The Textile Institute World Conference. In addition to this, the TI is looking for members and colleagues and partners willing to visit schools (digitally or face to face), to help educate and inspire people about careers in the textile industry. The TI is regularly contacted to recommend presenters and would like to invite people and organisations to join the director.

If you would like to get involved, please contact Robyn Ingham, senior events coordinator via [ringham@textileinst.org.uk](mailto:ringham@textileinst.org.uk) providing the following details:

What subject(s) you would like to present (up to 3)

Specialisms in each subject (up to 3)

What subject(s) you would be comfortable to train (up to 3)

Any relevant experience or qualifications

Location and your willingness to travel

A short bio (no more than 250 words)

Your presenting language

Willingness to present in person and / or digitally



# Calendar 2024

Highlighted events are organised by or in association with The Textile Institute, or the Institute is exhibiting.

10–13 April	Hoh Chi Minh City, Vietnam <a href="http://sgnfab.com/en/">http://sgnfab.com/en/</a> <b>Vietnam Saigon Fabric &amp; Garment Accessories Expo</b>
10–12 April	Shenzhen, China <a href="http://www.premierevision.fr">www.premierevision.fr</a> <b>PV Shenzhen</b>
16–17 April	Munich, Germany <a href="https://wearable-technologies.com/events">https://wearable-technologies.com/events</a> <b>Wearable Technologies Conference 2024 Europe</b>
23 – 26 April	Frankfurt, Germany <a href="https://techtexsil.messefrankfurt.com/frankfurt/en.html">https://techtexsil.messefrankfurt.com/frankfurt/en.html</a> <b>TechTextil</b>
21–25 May	Istanbul, Turkey <a href="https://hometex.com.tr/en">https://hometex.com.tr/en</a> <b>Hometex</b>
22–24 May	Taipei, Taiwan <a href="https://www.anex2024.com">https://www.anex2024.com</a> <b>Asia Nonwovens Conference</b>
TBC June	Manchester, UK <a href="http://www.textileinstitute.org">www.textileinstitute.org</a> <b>The Textile Institute AGM</b>
3–5 June	Munich, Germany <a href="http://www.ispo.com">www.ispo.com</a> <b>Outdoor by ISPO</b>
4–6 June	Munich, Germany <a href="https://www.edana.org">https://www.edana.org</a> <b>The EDANA Innovation Forum</b>
5–6 June	Milan, Italy <a href="https://denim.premierevision.com/en">https://denim.premierevision.com/en</a> <b>Demin Premiere Vision</b>
11–13 June	Cologne, Germany <a href="https://renewable-materials.eu">https://renewable-materials.eu</a> <b>Renewable Materials Conference</b>
17 – 19 June	Salt Lake City, USA <a href="https://outdoorretailer.com">https://outdoorretailer.com</a> <b>Outdoor Retailer</b>
25–26 June	London, UK <a href="https://thesustainableangle.org">https://thesustainableangle.org</a> <b>Future Fabrics Expo</b>
2–4 July	Manchester, UK <a href="https://digitalfashionnetwork.net/conference/">https://digitalfashionnetwork.net/conference/</a> <b>Digital Fashion Innovation Conference (DFIC)</b>
2–5 July	Nantes, France <a href="https://eccm21.org">https://eccm21.org</a> <b>21st European Conference on Composite Materials (ECCM21)</b>
20–22 August	Raleigh, USA <a href="https://techtexsil-north-america.us.messefrankfurt.com">https://techtexsil-north-america.us.messefrankfurt.com</a> <b>Techtextil North America</b>
13–14 September	Paris, France <a href="https://fashionrendezvous.premierevision.com">https://fashionrendezvous.premierevision.com</a> <b>Fashion Rendez-Vous</b>
17–19 September	Manchester, UK <a href="http://www.textileinstitute.org">www.textileinstitute.org</a> <b>The Introduction to Textiles Short Course</b>
14–18 October	Shanghai, China <a href="https://www.itmaasia.com">https://www.itmaasia.com</a> <b>ITMA Asia + CITME 2024</b>
23–24 October	Munich, Germany <a href="https://www.performancedays.com">https://www.performancedays.com</a> <b>Performance Days</b>
8 November	London, UK <a href="http://www.textileinstitute.org">www.textileinstitute.org</a> <b>Parliamentary Lunch</b>
11–14 November	Dusseldorf, Germany <a href="https://www.medica.de">https://www.medica.de</a> <b>Medica</b>
13–14 November	Cologne, Germany <a href="https://www.plasticfree-world.com">https://www.plasticfree-world.com</a> <b>Plastic Free World Conference &amp; Expo</b>

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The Textile Institute

Incorporated in England by a Royal Charter granted in 1925, inaugurated in 1910, The Textile Institute is governed democratically by and on behalf of members throughout the world, registered as a charity and recognised as a non-profit association under the laws of many countries.  
Charity Number: 222478

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