textiles

The official magazine of The Textile Institute

Issue 1 2021

SUPPLY CHAIN

Built-in obsolescence

Durability, emotional and physical

SPORTS

ISPO 2021

KNITTING

Megmeister

Denim

Automation and one-piece footwear

COUNTRY FOCUS

SOUTH AFRICA

'I am honored to receive the Young Persons Award – it allows me to demonstrate my commitment and dedication.'

Pranil Vora LTI
awarded The Textile Institute
Young Persons Award

'I felt honored, happy and humbled at such a prestigious recognition.'

Chandramani Thenuwara
awarded the
Institute Medal for Design Award

The Textile Institute

MEDALS AND AWARDS

Medals and Awards 2021 now open for nominations

The Medals and Awards Committee is now seeking nominations from industry and academia for Medals and Awards 2021 in categories such as a demonstrable effect on sustainability policy and practice, assistance for a student to present a paper at an international conference, substantial contribution to design, or distinguished service to the TI.
Medals and Awards will be presented at the prestigious TI AGM and Awards Lunch later in the year.

The Textile Institute

The Textile Institute is a unique organisation in textiles, clothing and footwear. It was incorporated in England by a Royal Charter granted in 1925 and is a registered charity. The Institute has Individual and Corporate members in up to 70 countries, the membership covers all sectors and all disciplines in textiles, clothing and footwear. Within the global textiles, clothing and footwear industries the aim of the Institute is to facilitate learning, to recognise achievement, to reward excellence and to disseminate information.

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NOMINATE **NOW!**

Download a nomination form at www.textileinstitute.org/medals-and-awards

For more information, email FAO Stephanie Dick tiihq@textileinst.org.uk

Chartered Institute for Textiles, Clothing and Footwear
The Textile Institute

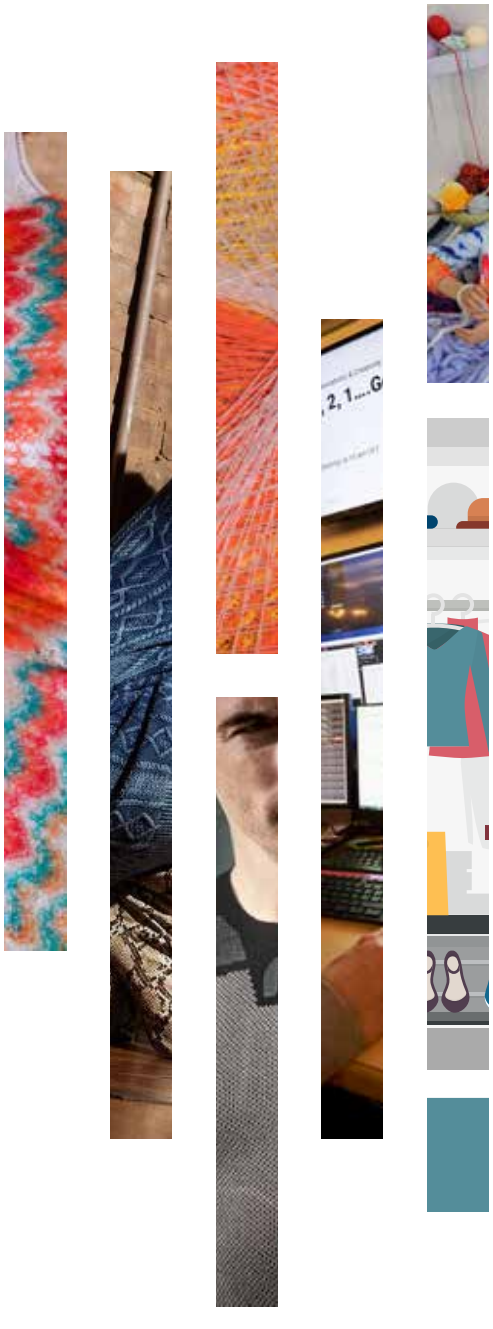
For information please visit: textileinstitute.org

FROM THE EDITOR

In an effort to reduce some of the environmental impact at The Textile Institute your magazine will now be mailed to you in a fully recyclable wrapping.

Please note that the content of this issue of textiles **has been created during the evolving Covid-19 crisis. We have updated features where it has been possible to do so, but it is not possible to anticipate all eventualities as we go to press. We do hope you continue to enjoy the magazine and that you stay safe and well.**

Contents



3. **NEWS** An overview of recent international press announcements relating to the textile industry and newly published books.

6. **SOUTH AFRICA: SHARED KNOWLEDGE AND CONTINUOUS IMPROVEMENT** The editor interviews Lindsay Humphreys from Mohair South Africa to understand more about how vital the production chain is to the country.

11. **BLUE GOLD – DENIM FROM THE INSIDE OUT** Adrian Wilson explores a one-step indigo spinning and dyeing process with new possibilities for knitting.

13. **DATA AS DESIGN CODE** One-piece shoe uppers and automated knitted construction have come a long way in the last decade.

14. **ADVANCED KNITTING TECHNOLOGY KNOW-HOW INFORMS SPORTSWEAR DESIGN** Nottingham headquartered Megmeister has the knowledge to change the way sports products are designed and manufactured for comfort.

16. **INNOVATION, CREATIVITY, AND INSPIRATION: ISPO 2021** A virtual ISPO 2021 brought a new version of a trade show, one which still managed to inspire, cover megatrends and provide over 31,000 participants from 100 countries with a way to meet and update themselves on the sports and outdoor sectors.

20. **WHY BUILT-IN OBSOLESCENCE IS THE ENEMY OF SUSTAINABILITY** The supply chain has changed many times over the last 40 years and we need to create systemic change again to ensure that we provide product worthy of emotional durability.

24. **SUSTAINABLE CLOTHING NEEDS BOTH PHYSICAL AND EMOTIONAL DURABILITY** How do we adapt physical and emotional durability to resolve over supply of garments within our supply chain?

27. **TI NEWS** Launching the new TI website, a look at who's received their TI qualifications, upcoming events, and publications highlights, including introducing the new editor for the Elsevier Series.

33. **CALENDAR** Events listings from around the world.

Cover image courtesy of Mohair South Africa.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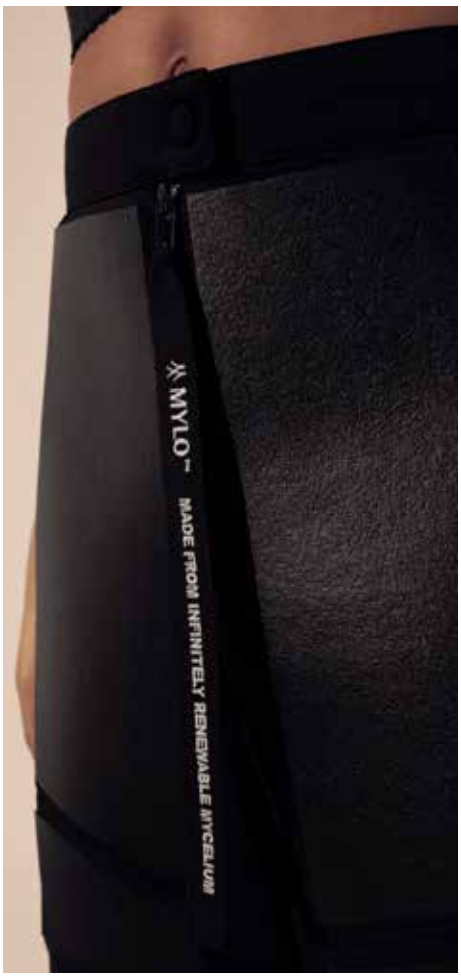
News

STELLA MCCARTNEY LAUNCHES MYLO GARMENTS



Stella McCartney is the first luxury house in the world to launch garments created using Mylo by Bolt Threads – a vegan, sustainable, animal-free leather alternative made from mycelium, the infinitely renewable underground root system of fungi. Combining deep science with high-fashion design, only two garments have been developed to show the potential of this next-generation material and pave the way for future commercial offerings.

"Creating new, high-quality biomaterials is a major technological challenge and a massive opportunity for people and planet. I am incredibly grateful and humbled by Stella and her team for their long-term partnership and support in bringing Mylo to the world. The material used in these two garments not only represents a huge step forward in both aesthetics and performance of biomaterials, but also marks the beginning of the rollout of product-ready Mylo. This is tangible progress toward large-scale production where Mylo can make a significant positive impact on our planet," commented Dan Widmaier, CEO and founder of Bolt Threads.

The two Mylo garments are made up of a black bustier top and utilitarian trousers. Both were handcrafted from panels of the mycelium-based material laid on recycled nylon scuba at the brand's atelier in London, combining an avant-garde perspective with an athleticism aligned with both its Summer 2021 and Autumn 2021 collections. While neither of these pieces are for sale, Stella will integrate Mylo into future seasonal offerings.

Remarkably similar to animal leather yet designed to reduce environmental impacts, Mylo is a soft, substantial material that is certified bio-based, meaning it is made predominantly from renewable ingredients found in nature today. Scientists at Bolt Threads have learned how to reproduce what happens under the forest floor, where mycelium grows best, in a lab to create Mylo with mulch, air and water – spawning an entirely new category of material science.

SPINNOVA AND SUZANO TO OPEN COMMERCIAL SCALE FACTORY IN 2022

Finnish material innovation company Spinnova together with one of the world's largest wood pulp producer's Suzano have just announced that they will make an estimated EUR€22 million investment to build the first commercial scale Spinnova production facility in Finland. The total investment, including all needed infrastructure such as real estate, is estimated to be some EUR€50 million. Spinnova and Suzano aim to open the commercial scale factory in 2022.

The new, industrial scale production unit will be located in Jyväskylä, Finland, home of Spinnova's R&D hub and pilot facility. Production will be managed and operated by a new joint venture company owned 50/50 by Spinnova and their partner and investor, Suzano.

"Every leading textile brand is looking for ways to minimise their emissions and ecological footprint, and build a circular material foundation for their products," says Spinnova's CEO and co-founder Janne Poranen. "We feel humble and proud that soon we will be able to provide brands our new, disruptively sustainable fibre and fabrics."

Brazilian company, Suzano, is a world leader in the production of eucalyptus pulp and has expanded its operations to create sustainable and innovative solutions derived from trees to meet the challenges faced by society. In the joint venture, Spinnova will be the exclusive technology provider, while Suzano will ensure the supply of sustainably produced micro-fibrillated cellulose obtained from eucalyptus planted by Suzano in Brazil.

The process uses no harmful chemicals and 99% less water than the cotton value chain. Fibre produced this way creates minimal CO_2 emissions, is quickly biodegradable and contains no microplastics. It is also possible for the fibres to be recycled into a new fibre again and again.

Spinnova materials have been developed in collaboration with leading fashion brands such as Danish clothing company Bestseller, Finnish fashion house Marimekko, and Norwegian outdoor brand Bergans. The H&M Group has also recently joined the group of brands in a partnership with Spinnova.

LECTRA TO ACQUIRE GERBER

Lectra has recently announced its plan to acquire the entire capital and voting rights of US-based Gerber Technology. A key Industry 4.0 player in the fashion, automotive and furniture industries, Lectra designs smart industrial solutions – software, equipment, data and services.

If the acquisition goes ahead it would allow Lectra to complement its market position and continue to enhance its offerings based on Industry 4.0 technology, enabling its customers to boost productivity and profitability.

After the French work council of Lectra is consulted and the binding documentation is signed, completion of the acquisition will remain subject to merger control clearance and other customary conditions and will also need to be submitted to Lectra shareholders for approval.

It is hoped that the strategic combination of Gerber Technology and Lectra will enable the combined company to accelerate development of Industry 4.0 technologies and help its expanded customer base gain the full potential of these innovations.

Under the proposed acquisition, Lectra would acquire all outstanding shares of Gerber Technology on a cash-free debt-free basis for an upfront payment of EUR€175 million – through a combination of cash and debt – plus 5 million newly issued Lectra shares to AIPCF VI LG Funding, LP, an affiliate of American Industrial Partners that is Gerber Technology's sole shareholder. This would represent a total amount of about EUR€300 million based on Lectra's closing share price on February 5, 2021. Gerber Technology's revenues was EUR€165 million in 2020.

APLF FAIRS RESCHEDULE AND LAUNCH B2B NETWORKING MARKETPLACE

The APLF - Leather, Materials+ and Fashion Accessories shows will be rescheduled from 5 - 7 July 2021 to 17 - 19 November 2021 in Hong Kong. This postponement follows a decision made by the Hong Kong Government to extend the compulsory quarantine regulation until 30 September. The decision to postpone was also made after an extensive consultation with industry partners, associations, exhibitors and buyers.

APLF is also preparing to launch a B2B networking marketplace in April to meet the needs of buyers and suppliers.

"In today's challenging environment, APLF will keep the community connected through our digital channels. In the coming April, APLF will launch a brand-new marketplace for suppliers to launch their collections, connect with buyers and accelerate business. This B2B marketplace offers well-rounded features and functions, and the best business opportunities for buyers and sellers." said Grace Lee, event director of APLF fairs. "We will also organise various digital events to keep the conversations between buyers and sellers going."

CHANGES FOR TECHTEXTIL AND TEXPROCESS

Recently postponed due to the current Covid-19 pandemic, Techtextil and Texprocess, will now take place in Frankfurt am Main from 21 to 24 June 2022. With the shift to 2022, the two fairs will also change event cycles and shift permanently to even years. The dates for 2024 have also been set and the shows will take place from 9 to 12 April.

"We are delighted that, after close consultations with the sector and our partners, it was quickly possible to find new dates for the postponed Techtextil and Texprocess trade fairs. The biennial event cycle for the two fairs has proved to be in the best interests of the sector so that, together, we have decided to maintain this rhythm from 2022", said Olaf Schmidt, vice president textiles and textile technologies at Messe Frankfurt.

The next Techtextil and Texprocess in June 2022 is planned to be a hybrid event that, in addition to the fair and a comprehensive programme of events, will include a variety of digital services. In 2022, the shows will occupy the western section of Frankfurt Fair and Exhibition Centre (Halls 8, 9, 11 and 12) for the first time, as was originally planned for the 2021 edition.

Techtextil North America and Texprocess Americas due to take place from 17 to 19 May 2022 are not affected by the changes and will be held as scheduled. Messe Frankfurt will agree the event cycle of the two US fairs with its partners in the near future.

NEW COTTON PROJECT

At the end of last year twelve companies in the fashion and textile industries announced a new project demonstrating an entirely circular model for commercial garment production. The consortium of brands, manufacturers, suppliers, innovators and research institutes participating in the European Union-funded 'New Cotton Project', aim to prove that circular, sustainable fashion is not only an ambition, but can be achieved now. The project also aims to act as an inspiration and steppingstone for further, even bigger circular initiatives in the industry going forward.

Over a three-year period, textile waste will be collected, sorted and regenerated into new cellulose-based textile fibres by Finnish biotechnology group Infinited Fiber Company.

At the end-of-use, apparel take-back programmes will collect the clothing to determine the next phase in its lifecycle. Clothing that can no longer be worn will be returned for regeneration into new fibres. The New Cotton Project (CEFNR-14-2020 – Innovative Textiles – Reinventing Fashion), has a consortium of partners from Finland, Portugal, Sweden, Germany, The Netherlands, Slovenia and Turkey.

Manufacturers Inovafil, Tekstina and Kipas will use the regenerated fibres to produce yarns, woven fabrics and denim respectively. adidas and companies in the H&M Group will design, manufacture and sell clothing made from the fabrics. adidas is also collecting customer feedback and insights, and developing its textile take-back programme to reintegrate returned apparel back into the loop.

Sorting and pre-processing of the textile waste will be carried out by Frankenhuis, while the South-Eastern Finland University of Applied Sciences (Xamk) will develop a technical solution for the continuous processing of textile waste fibres for pre-treatment. REvolve Waste will collect and manage data on textile waste to estimate feedstock availability in Europe and define the grade of the used textile waste.

The Swedish research institute, RISE, will conduct the sustainability and techno-economic analyses for the project together with Infinited Fiber Company, as well as managing the eco-labelling for the project and subsequent fabrics and garments. Finland's Aalto University will analyse the created ecosystem and circular business models more broadly to help define the most feasible business model for the project. Sustainable fashion innovation platform Fashion for Good will facilitate stakeholder cooperation and conduct training, leading all project communication, branding and dissemination with support from Aalto University and Infinited Fiber Company.

The project has received EUR€6,745,801.25 in funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000559.

RENEWABLE MATERIALS CONFERENCE 2021

Finding the best solutions for renewable materials has been an ongoing issue for the industry, as a response to this challenge, the nova-Institute based in Hürth, Germany, has decided to unite all relevant industries in the new Renewable Materials Conference. Taking place online from May 18–20, 2021 the conference will feature a unique concept to present all renewable material solutions at one event: bio-based, CO_2-based and recycled.

The conference will present highlights and innovations of bio- and CO_2-based chemicals and materials, and of chemical recycling. The three-day programme will give a complete overview of the latest renewable material solutions, a performance show for a wide range of sustainable raw materials and technologies.

The first day of the conference will focus on renewable chemicals and building-blocks. The second day will be dedicated to renewable polymers and plastics, starting with the question of how polymers can be recycled and cycled. The third day will cover markets, trends and sustainability of bio- and CO_2-based polymers and bio-composites, political framework conditions, biodegradability and packaging solutions.

For the first time, the innovation award 'Renewable Material of the Year', sponsored by Covestro, will be awarded to the most exciting new materials made from renewable carbon. To demonstrate the wide range of possibilities and the diversity of renewable materials, the innovation award will be granted to innovative and trend-setting products and technologies based on renewable materials. All nominated products will have one thing in common: They avoid or substitute fossil-based materials. The renewable materials have to be available on the market already or their market launch should take place in the near future.

A jury consisting of experts from nova-Institute, the advisory board and sponsors of the event will nominate the outstanding top 6 applicants prior to the conference. The nominees will then present their innovation in a 10-minute presentation to the audience on the second day of the conference and the audience will vote online for the three winners.

IN THE FUTURE WHAT WILL WE WEAR?

Caroline Rush, CEO, of the British Fashion Council (BFC), has been announced as a headline speaker to address sustainability in global fashion and retail taking place in the UK Pavilion at Expo 2020 Dubai this October. The event originally planned for 2020 now takes place from October 2021 through to March 2022. More than 190 nations are taking part with 70% of the visitors expected from around the world. The overarching theme for Expo 2020 Dubai is 'Connecting Minds, Creating the Future'.

How will technology, social change and the climate crisis shape what we wear in the future? How can the worlds of fashion and retail, which rely on consumption and novelty, become more sustainable and socially responsible? These will be some of the big questions asked during 'In the future, what will we wear?', the opening event in a series of sector showcases as part of the UK's national programme at Expo 2020 Dubai.

The UK participation theme for Expo 2020 Dubai is 'Innovating for a Shared Future'. Through a series of talks, exhibitions, interactive digital displays, workshops, performances and experiences 'What will we wear?' considers how the global fashion industry can evolve to address a range of challenges which have

been raised during recent editions of London Fashion Week. These include climate change, sustainability and waste, social responsibility and ethical fashion, the impact of technology on the sourcing, design, manufacture and supply of clothes, and the retail experience of the future. Student content will also show visitors the benefits of studying in the UK and opportunities in the fashion, textile and retail industries.

The five days of activities will include a two-day summit bringing together some of the most influential minds in the industry to discuss solutions to these issues while a series of podcasts and online videos will allow audiences from around the world to virtually experience the programme and take part in the discussion. Speakers already announced include Orsola de Castro, founder and global creative director of Fashion Revolution; John Andrews, founder and chair of IORMA – The Global Consumer Commerce Centre; John Rainford, vice-chair, Transformational Thinking of IORMA; and Dr Claire Lerpiniere, senior lecturer in Textile Design at De Montfort University.

Laura Faulkner OBE, UK commissioner for Expo 2020 Dubai, commented: "The UK Pavilion at Expo 2020 Dubai will provide a platform for our fashion industry to showcase their talent and work with partners from around the world to explore solutions to global challenges."

"With exports reaching GBP£11.9 billion, the UK's fashion sector is world-renowned and continues to be at the forefront of innovation. These discussions and the thought-provoking exhibitions will provide a glimpse of a more ethical and sustainable future for fashion, enabled by new technology, close international collaboration and pledges to reach net zero by 2050."

IMOGO'S FIRST INDUSTRIAL SCALE PLANT

TMAS, the Swedish Textile Machinery Association has recently announced that imogo, is currently installing its first industrial scale Dye-Max spray dyeing line at 7H Färgeri Dyehouse – the Nordic region's most complete dyeing and processing plant. From April the plant is expected to be commissioned and ready for production.

The new line has a working width of 1.8 metres with an operating speed of up to 50 metres for the reactive dyeing of cellulosic fibre-based fabrics. In addition, it can carry out the application of a wide range of fabric pre-treatments and finishing processes, providing the company with unbeatable flexibility in production.

A proven Mini-Max laboratory unit for pre-determining application volumes and colour matching has also been installed at the 7H plant.

With the potential to slash the use of fresh water, wastewater, energy, and chemicals by as much as 90% compared to conventional jet dyeing systems, the DyeMax has gained considerable attention since the concept was outlined and a prototype machine constructed in 2019.

"We are achieving an extremely low liquor ratio of around 0.5-1 litres per kilo of fabric and we fully control the pickup, applying precisely what is required to the specific fabric," says imogo founding partner Per Stenflo. "Compared to traditional padders there is no contamination of the dyebath or dilution of the dye liquor to worry about."

Fast changeovers with virtually no waste, together with a high

The new imogo DyeMax at 7H in Sweden

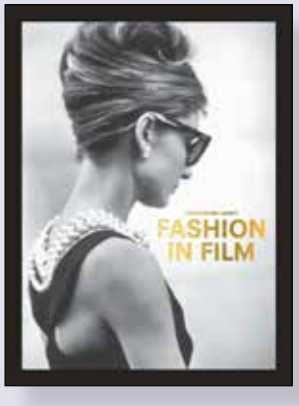
Books

*Called **500 Patterns**, this new book published by Laurence King Publishing offers a kaleidoscope of design and colour from delicate florals, to bold stripes, and*

geometric prints to sumptuous brocades – the book delves into the world of textile pattern design with this showcase of over 500 patterns. Close-up, highly detailed images of both designer creations and everyday items from the 1800s to the 1980s capture the intricacies of each fabric, while accompanying texts provide fascinating insights into the history and creative process of pattern design. This beautiful and accessible book is a valuable resource for anyone in search of visual inspiration.

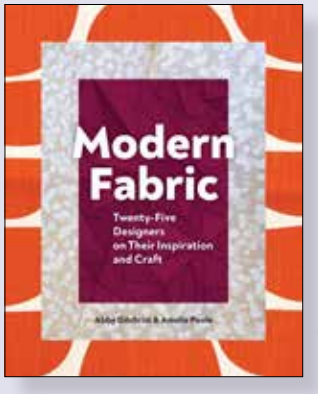
The authors, Jeffrey Mayer is curator of the Sue Ann Genet Costume Collection and associate professor of Fashion History and Textiles at Syracuse University, New York; Todd Conover is professor of Fashion Design at Syracuse University, New York; and Lauren Tagliaferro is the collections planning specialist at Rochester Museum and Science Center, New York.

*Another book recently published by Laurence King, **Fashion in Film** (Pocket Edition) provides an illustrated snapshot into the contribution made by leading fashion designers to film costume. Fashion designers have been involved in movies since the early days of cinema, resulting in some of the most eye-catching and influential costumes ever committed to film, from Ralph Lauren's trend-setting masculine style for Diane Keaton in Annie Hall to Audrey Hepburn's little black Givenchy dress in Breakfast at Tiffany's. Fashion in Film celebrates the contributions of fashion designers to cinema, exploring key garments, what they mean in context of the narrative, and why they are so memorable. Illustrated with over 280 beautiful film stills, fashion images and working sketches, this book should appeal to lovers of both fashion history and cinema.*



The author Lord Christopher Laverty is a costume and fashion writer and consultant. As the creator and editor of the award-winning website Clothes on Film, he has appeared on HBO and the BBC, and in countless publications.

*Step inside the studios of today's modern fabric design stars from around the world in a new book **Modern Fabric: Twenty-Five Designers on Their Inspiration and Craft,** published by Princeton Architectural Press. From the bold florals of Kaffe Fassett to the subtle patterning of Naomi Ito to the retro style of design collective Ruby Star Society, the book features a sophisticated, eclectic group of designers working in an exciting variety of techniques.*



Essays explore each designer's life in textiles: education, design beginnings, creative process, dreams, and how they run their businesses. Hundreds of colour photographs offer endless inspiration, showing studio spaces, process, textile samples, and products made from the gorgeous fabrics featured in the book.

Both of the authors are now based in Maine, US where Abby Gilchrist founded Fiddlehead Artisan Supply shop, in Belfast in 2011- a destination shop of modern fabrics and art and craft supplies; whilst Amelia Poole is a textile artist and teacher. Amelie received an MFA in Woven Textile Design and Construction from the Surrey Institute of Art and Design, in Farnham, UK. Poole works from her shop and open studio, Ecouture Textiles, in Brooksville, Maine, and shows her work at fine craft shows and teaches throughout New England.

South Africa:

Shared knowledge and continuous improvement

According to a recent report by Ethical Trade Norway and Norad, South Africa is officially a 'water-scarce' country and well on its way to being classified as 'water stressed'. The stress is becoming increasingly acute with the emerging effects of Climate Change. Large parts of the country are suffering their second bout of severe drought within a six-year period. Sheep and Angora goats are largely reared in the dry parts of the country and on commercial farms this is typically pretty extensive farming. South Africa is the largest producer of mohair (52-54% of global production) and together with its neighbour Lesotho, is usually responsible for over 62% of global production. Over 90% of globally traded mohair passes through Port Elizabeth (Nelson Mandela Bay). The production of Mohair has dropped over the last twenty years to less than half of what it used to be, whereas the demand has increased.

The editor interviewed **Lindsay Humphreys** who is general manager and head of global business development and sustainability for the industry body Mohair South Africa. Lindsay has been with Mohair South Africa (MSA) for over ten years, with a background in property and design, she joined MSA in the international marketing department in January 2010. She held various positions which included the role of Marketing Manager before being appointed to her current position. With over 10 years of experience in the industry, this was a natural progression for Lindsay, as her deep passion and interest in sustainability, coupled with the industry's focus and needs, made for a perfect match. Lindsay's core focus is to ensure the long-term strategic growth of the South African mohair industry.

Q. What are the main areas of activity and aims of Mohair South Africa (MSA)?

LH MSA is a non-profit industry body that was established to perform functions aimed at the advancement of the entire mohair industry. It supports the needs of the mohair value chain and houses three organisations - Mohair SA, The South African Mohair Growers Association (SAMGA), and the Mohair Empowerment Trust. MSA believes that shared knowledge, a vigorous commitment to continuous improvement, progressive attitudes, and financial discipline are critical ingredients to ensure the future success of the South African mohair industry. Key priorities of the industry include sustainability, mohair production, empowerment, and transformation.

Q. How does MSA differ from the SA Mohair Growers Association (SAMGA)?

LH The South African Mohair Growers' Association (SAMGA) is the producer organisation that supports angora goat farmers. SAMGA's responsibilities include the promotion of best practice mohair farming and production, training and sustainability education. By working closely with SAMGA, MSA supports the needs of the value chain post farm gate.

Q. We hear very little about the South African textiles market, are you able to paint a picture for us including where mohair fits? Who are the key players?

LH There has been a great focus by the South African Government to support and grow the South African textile market. South Africa produces not only mohair but also has a significant wool and cotton industry.

Approximately half the world's mohair is produced in South Africa, with a large percentage of mohair produced in other countries being imported and processed in South Africa. There are two processing plants owned by the Stucken Group and SAMIL Natural Fibres. Many local mohair manufacturers export end products from South Africa.

Q. And looking specifically at mohair where are the imports and exports?

LH Besides South Africa, other mohair-producing countries include Lesotho, Argentina, the US, Turkey, Australia, and New Zealand. The two countries that purchase more than 60% of the world's mohair are China and Italy. Other countries that purchase mohair include Taiwan, Japan, the UK and Bulgaria. The Asian countries tend to buy the stronger mohair variants whereas Europe purchases the majority of finer kid mohair variants.

Q. As an organisation MSA seems to be innovative and forward-thinking – how do you envision the future of mohair? What are the current challenges and opportunities – and do they differ for each continent?

LH With around half the worlds' mohair production taking place in South Africa over approximately 1000 farms, the industry is well equipped to revisit industry strategies regularly, identify growth areas and implement change relatively quickly. With continuous learning and a progressive attitude, sustainability,

traceability and transparency present an incredible opportunity for the mohair industry. Whilst we have seen many successes in this regard, we continue on our sustainable journey and recognise the long road ahead. Traceability of garments back through the value chain to the farm using the 'Internet of Things' and blockchain technology enables the telling of true stories and gives a consumer insight into the production of sustainable and responsible garments starting with the farmers themselves.

The biggest challenge facing our mohair producers is the ongoing drought across South Africa. Some farmers have not experienced any significant rainfall in the past 5 years, which whilst it doesn't affect the quality of mohair, it does affect the quantity, which has dire financial implications on the farmer. During drought conditions, feed must be supplemented further compounding the cost factor on reduced volumes.

Every challenge presents an opportunity. The use of the technology to enable efficient feed production, land management and social development may combine to create ripple industries to support and enable job creation around sustainable, ethical, and efficient farming practices.

Q. Mohair is a sustainable fabric. Does this add value to increase its demand?

LH Absolutely yes, the ever-shifting focus toward the wellbeing of life and land has positioned sustainability and ethical practices as a key sourcing requirement in the modern world. The mohair industry in South Africa introduced the first sustainable guidelines in 2009 and natural progression saw the launch of the global Responsible Mohair Standard (RMS) by Textile Exchange in 2020. There has been a definitive increase in demand since the committed uptake and successful implementation of the RMS.

Understanding the true nature and beauty of the symbiotic and co-dependent relationship between the angora goat and the farmer is the essence of understanding why mohair is naturally a sustainable fibre. To produce mohair fibre of the highest quality, farmers must raise and tend to their herds under 'stress-free' environments, which naturally and inevitably leads to adhering to best practices, managing land, water, and food resources that will support mohair production, and fulfilling demand, for generations to come. Circling back to drought, reduced volumes, increased farming costs, which when combined with the deeply emotional, caring connection mohair farmers share with their goats, the value of sustainability is even more critical.

Q. How do you foresee the mohair market magnifying worldwide? What are the challenges that the industry is currently facing?

LH The mohair industry is relatively small and geographically largely concentrated in South Africa, compared to, for example, the wool industry, demand, due to its natural unique characteristics, will most likely always exceed supply. This though is also a crucial advantage to the industry's ability to implement best practices and standards which are accepted by the global value chain as ethical and sustainable.

We have seen a significant increase in demand for mohair, and specifically RMS mohair since the end of 2020, going into the 2021 season, showing an increase of 41% per kilogram.

The launch of the RMS brought about a challenge with demand exceeding immediate supply. The standard is rigorous and the process thorough, in some cases taking up to 3 months for a farmer to become certified. Mohair sold from South Africa is now classified as RMS or non-certified. The common misconception is that non-certified mohair is farmed in a non-sustainable manner. This is not so as 97% of all mohair farmers in South Africa were previously audited and qualified as Sustainable Farmers under the Certified Sustainable Mohair (CSM) Guidelines. With the local industry too small to run multiple mohair standards, it will take time to covert CSM farmers to RMS. The South African mohair industry must support other producing countries on their unique sustainability journeys. With a large percentage of the rest of the world's mohair being processed in South Africa, it would benefit the global mohair industry to work closely together towards common goals.

Q. You've mentioned that last year you launched the Responsible Mohair Standard with Textile Exchange, how is it being taken up and perceived by the farmers?

LH After 18 months of intense consultation and development, the RMS was launched in March of 2020. During those 18 months, MSA, together with the support of SAMGA implemented an education drive across the country to support the understanding and expectations that the new standard would bring. In many cases, farmers were undertaking necessary upgrades and preparing for RMS many months before the official launch. We further developed Best Practice learning materials in both video and manual formats across multiple languages to facilitate the process. Since the standard was launched, the uptake has been phenomenal, and despite the restrictions that Covid-19 lockdowns presented, 65% of ALL South African mohair is now produced on RMS accredited farms. We were fortunate that the Responsible Wool Standard had already been implemented in South Africa a few years prior and many

mohair farmers are also wool farmers and had a prior understanding of Textile Exchange standards. The biggest area of growth and the most common response from mohair producers has been the extensive record-keeping requirement to meet the standard.

Q. There is an existing national traceability system in place that goes back to the farm in South Africa, but I understand that this can be difficult for retailers to access due to data protection regulations. You've recently announced a partnership that will provide traceability for mohair, who is this with and why have you chosen to work with them?

LH Yes, with the long-term commitment to sustainability and ensuring the highest levels of social and ethical production, MSA recently announced the partnership with Oritain, world leaders in using forensic science to verify the origin of products and raw materials which uses a combination of forensic science and technology to analyse mohair fibre and verify exactly which country it comes from. This ensures transparency from farm to store, giving manufacturers, brands, and consumers insight into the content of their mohair purchases.

It's no secret that fully traceable fashion fibre is the future of sustainable sourcing and the mohair industry understands the diverse sustainable journeys and priorities of our broad client base and remains committed to continued research and exploring opportunities to provide a product that meets our client sourcing criteria.

The partnership with Oritain perfectly complements the recent progressive developments in the industry with the launch of the Responsible Mohair Standard by Textile Exchange.

Q. There have been concerns raised by NGO's regarding animal welfare, social and environmental issues in the mohair industry. How do you work with the industry to ensure that these are addressed?

LH These concerns are always welcomed as the mohair industry is committed to continuous growth and improvement, working towards a more sustainable and responsible future, with the environment, its animals, and people as its main priority. The mohair industry has long had a dedicated veterinarian, Dr Mackie Hobson, who offers animal welfare and best practice training together with SAMGA; medical care for angora goats when required; and medical advice to every mohair producer in the country, at no expense to the producer himself.

Our continuous training programmes around the country cover topics such as Handling, Dipping, Shearing, Dosing to name a few.

Q. Does the South African Government support the industry in any way?

LH Yes, the mohair industry works very closely with various government departments and forms part of strategic work teams on various levels. The SA Government is working on a 2030 Masterplan to drive growth in various agricultural sectors in the country. The mohair industry features prominently in the draft Masterplan. The Mohair Trust has a minister-appointed representative who attends all industry-related Trust Meetings. Also, we have two representatives from the National Agricultural Marketing Council represented on the Mohair Empowerment Trust.

Q. How important is sustainability to the market? How aware do you feel South African consumers are of issues surrounding sustainability?

LH Sustainability is critically important for the long-term growth of the mohair industry and the number one sourcing criteria from the majority of our clients. With this in mind, the industry will continue to develop and evolve into the future. Whilst sustainability was introduced to mohair farmers in 2009, it was a slow uptake as there was limited understanding in South Africa on this topic. In recent years, education and awareness around sustainability in South Africa has exponentially grown to accommodate global demand and see substantial growth in informed South African consumers.

Q. If you had a crystal ball where would you like to see the South African Mohair industry in 10 or 20 years?

LH What a great question. I would love nothing more than to see our farmers flourishing on drought-free lands, increasing flock sizes, increased mohair production, and continuously growing demand which in turn will result in good prices. Mohair SA has always been considered a progressive industry, and I would like to see this continue well into the future.

Blue Gold – denim from the inside out

Adrian Wilson explores a one-step indigo spinning and dyeing process that promises huge savings in dyeing and opens up many new possibilities for employing the finishing versatility available to denim in knitwear.

After many years of research and development, the Austrian-headquartered cellulosic fibre producer Lenzing has succeeded in developing a controlled method of adding indigo pigment directly into the spinning formulation for its Tencel-branded modal fibres, to create a one-step spun-dyeing process.

"Indigo really defines denim, but up to now it has taken a huge amount of water and energy and many process steps to get indigo into denim fabrics," said Tricia Carey, Lenzing's director of global business for denim at the recent online 24 Flash Kingpins event. "The irony is that in the final finishing of denim jeans or garments, much of this indigo is stripped away again to create surface effects and the familiar faded and frayed qualities."

Historic process

The process for the continuous indigo dyeing of warp yarns has not changed in the history of denim. Indigo is a water insoluble vat dye converted to being water soluble by a reduction process. It is well known as a highly wasteful process when it comes to the use of water, energy and chemicals, as well as the problematic use of potentially hazardous reducing agents that are needed to make indigo soluble in water.

Due to the complexity of the process, which includes repeated dyeing on large lines, post rinsing, oxidation and drying time, there is an extensive use of resources.

The challenge is to maintain a constant liquor pH by balancing the concentration of indigo, caustic and hydrosulphite. Other chemistries being used may include deaerating, wetting, dispersing, complexing and fixing agents, as well as re-beaming aids.

All of this uses a significant amount of water, chemicals and energy, as well as producing major amounts of effluent.

An example of new denim knitwear in the Seed of Joy collection

The dope

In order to manufacture a wood-based cellulose fibre meanwhile, it is necessary to create wood pulp from a solid into a liquid – the dope – and then to shape it back into a solid filament or fibre.

Dope dyeing is a production technique to colour fibres by adding pigment to the liquid polymer solution, thus ensuring entrapment in the structure of the fibre.

The new Tencel with Indigo Color is produced by preparing the Modal spinning solution and indigo pigment in oxidised form and adding the pigment to the solution before extruding it into a coagulation bath according to a Modal spinning process.

Resource savings will vary by doing this according to operating parameters but compared to typical conventional dyeing with either powdered or pre-reduced liquid indigo, Lenzing claims that savings of up to 99% can be achieved in both water and energy usage, and at

1. Indigo is an ancient dye, used by many civilisations, including Mayan, Egyptian, Japanese and Indian cultures. When indigo became a commodity, it started its journey via the earliest trade routes, finding its way to Greece and Rome around 300BC. At that time, it was considered a luxury item, soon attracting the name 'Blue Gold'

the same time, only around 20% of the quantity of indigo that is usually needed to ensure the full take-up of the dye as the ropes of warp yarns are carried through dye baths is required. There is also no wastewater produced.

Savings

The Tencel with Indigo Color process is also said to deliver superior colour retention compared to the conventional indigo dyeing of yarns or fabrics, with superior dry and wet crocking and rubbing.

"Despite resistance to home-laundry fading, wash-down effects for denim products can be achieved using commercial laundry techniques," Carey added. "The fibres are also inherently versatile and suitable for a range of multi-fibre blends."

Tencel with Indigo Color has already been awarded the EU Ecolabel and has been designated BioPreferred by the US Department of Agriculture (USDA). A specially commissioned indigo pigment from dyestuff manufacturer DyStar has ensured the new fibre's Oeko-Tex 100 standard certification, by guaranteeing ultra-low levels of aniline.

Seed of Joy

Exploring the new potential of Tencel with Indigo Color in knitwear has been legendary denim designer and founder of House of Gold Adriano Goldschmied with the Seed of Joy collection.

"I'm Italian, where I learned creativity, and have lived in Los Angeles for the past twenty years, where I learned about bringing creativity to the market," he explained. "All of the bad things that are around denim were invented in the 1980s from an ecological point of view, when many toxic processes such as stone washing and potassium permanganate spraying were introduced. From the early 1990s I started to realise the problem and work on it in small ways. I was so excited about Tencel fibre and started using it back then – but washing it in the wrong way, so the effect was probably zero."

Gradually, he adds, it became clear that sustainability had to start from the beginning.

"It had to begin with the way we grow and produce fibres and move to how we manufacture and distribute products, so today it's a very complex subject," he said. "Lenzing has a clear vision of how we can create zero emissions and circular products and have complete control over all processes. It is offering an incredible short-cut, because if you look just at a single conventional dyeing run, it is using twenty thousand litres of water at a minimum, plus all the energy, chemicals, and wastewater. I think this will really be a milestone."

WholeGarment

House of Gold has partnered with a number of companies on the development of its Seed of Joy collection, including the leading manufacturer of flat knitting machines, Shima Seiki, of Japan, using the WholeGarment seamless system.

"Because of the low crocking nature of the Tencel with Indigo, we can create entirely different characteristics and new fits and in knitted sweaters the characteristics of the fibre are most important," Goldschmied stressed. "Shima Seiki not only produces highly efficient technology but great service in terms of persistence, and they love the idea of opening up these new markets for indigo. We have developed a range of knits such as French terry and single jersey sweaters and loungewear, a kimono jacket and training pants."

New frontier

Another important partner has been Tonello, the Italian leader in technology for the washing and finishing of denim jeans and garments (generally referred to in the industry as laundry), to create the Seed of Joy concept capsule collection.

While hardly as sturdy as denim fabrics, new striated finishes are possible on delicate knitted garments using Tonello's advanced laundry processes for the denim industry, which has long ago replaced stone and acid washing with sustainable pinpoint laser and ozone treatments.

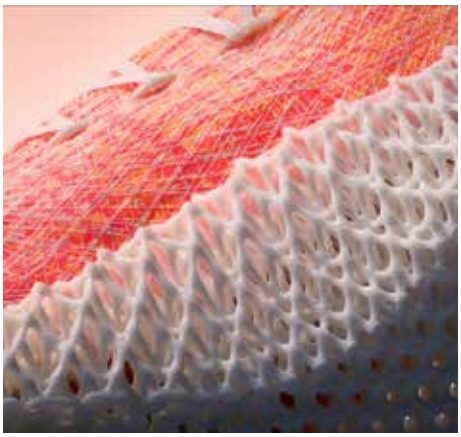
A third important contributor is Crafil, which has developed 100% Tencel sewing threads to replace traditional poly-cotton, with no compromise on physical characteristics – ensuring all of the garments in the Seed of Joy collection are completely recyclable.

"We are not re-engineering existing products but creating an entirely new frontier for indigo in knitwear which we believe is just the start of what's possible," Goldschmied said in conclusion. "If Lenzing could go on and develop a similar way to process cotton as sustainably, it would be a complete game changer for the textile industry."

Designer Adriano Goldschmied of House of Gold

Other images: Examples of new denim knitwear in the Seed of Joy collection

Data as design code



The adoption of one-piece shoe uppers by global sportswear brands over the past decade has been a shot in the arm for the global knitting industry.

It has prompted significant investment in knitting technology worldwide and also kick-started an infinite number of brand-led initiatives for exploring what else is possible through the use of new digital tools and advanced automation.

A case in point is the adidas Futurecraft Strung project, in which robotic knitting machines are being employed to build entirely new fibre structures for shoe uppers.

The team involved wanted to combine robotics and athlete data and the process of creating and refining new Strung software, hardware and prototypes led to more researchers joining the project as development became more complex.

The Covid-19 travel restrictions brought challenges, but the team was able to navigate some of these with Strung robots connected on three continents and working together simultaneously.

Complex form

What has become clear from this work is that the foot is a wildly complex asymmetrical form and moves differently with each intervention of footwear that is placed on it.

Initially, the team responded to this by knitting shoe upper prototypes by hand, based on data from individual athletes, and then recreating them with the robots.

The team then started to consider how to construct a robotic machine that could create simulate, analyse and test fabrics based on the athlete data from the start, in collaboration with long-term design partner, Stockholm and Lisbon-based Kram/Weisshaar.

With the resulting robotic system, yarns can be placed in any direction, going beyond what conventional knitting systems can do, the researchers say.

Cocooned feel

The first upper created for short-distance training runs has a lightweight cocooned feel and fit, locking the heel to prevent slip, with stiffer and stronger threads placed at the midfoot, toe-box, and heel (where the foot needs support), and more supple yellow threads in the forefoot for flexibility. This construction provides precise fit and support through the gait cycle.

The upper has been paired with an extremely minimalist 4D lattice midsole in the first concept shoe, with the heel minimised to remove weight and the rubber outsole specifically engineered to provide traction only where required.

Two adidas runners were identified as experts of a specific type of training run and provided both motion capture and ongoing feedback to support development.

The team observes that the project is changing the way it thinks about creating uppers – not as just an object, but as a set of interrelated systems that work together. The more the team understands about how data can become design code, the more this can be applied to the new Strung textiles in a continuous evolution. It is planning to make the first Strung shoe available in late 2021/early 2022.

Automated knitted construction has seemingly come a long way at adidas since it unveiled the adizero Primeknit – its first performance running shoe featuring a one-piece flat knitted upper – at the opening of the 2012 Olympics in London, UK.

Advanced knitting technology sportswear design

During the recent ISPO 2021 online sports and outdoor exhibition (February 1-5), adidas announced a partnership with Nottingham, UK-headquartered Megmeister, for the production of base layers. The company is also behind an intriguing new knitting technology called Warp Aero Suspension (WAS). Adrian Wilson talked to Jos Ruiterman to find out more.

Megmeister was founded five years ago by Jos and Vanessa Ruiterman. Jos, who had an early grounding in warp knitting technology for a UK company that eventually moved its manufacturing overseas, was most recently working in product development for one of the largest knitting manufacturers in Asia, proving adept at getting the brands interested in new fabric innovations.

"It was a great job, working early in the supply chain and going to all the fairs to keep track of new developments, but I was also just handing over my own ideas to someone else all the time and wanted to develop things further for myself, which led us to form Megmeister," he explains. "Base layers are a generic product used across a lot of sports and with the development of Drynamo, my intention was to develop the best on the market."

Having studied what was available on the market, he also decided to start entirely from scratch in terms of comfort, fit and performance.

Seamless

The new base layer he designed and produced via the Drynamo route is completely seamless, with no potential areas of discomfort around the arms or neck, and Merino wool fibres were specifically selected to avoid odour generation or itchiness. A two-layer knitting technique is employed to allow moisture transport from the skin to the outer fabric and also to integrate structured fabric performance zones.

As such, Drynamo is a new construction technology for knitted garments made of yarns designed for high-performance athletes and featuring moisture wicking capabilities, hypoallergenic qualities, ultra-low weight, supreme comfort and superior breathability.

"With our warp knitting know-how, we don't buy fabrics and cut them from patterns as designers, we buy yarns and create exactly what we want," Jos says. "When adidas knocked on the door last year and asked us to make base layers for them using our Drynamo development, it opened up the opportunity to create the greenest base layer to date, with the freedom to source raw materials at scale that isn't available to companies like us, working to much smaller production runs. The aim has been to demonstrate that sustainability doesn't have to compromise performance and we've raised the bar in that respect."

The resulting adidas Outdoor Drynamo Wool

adidas Outdoor Drynamo Wool Eco LS crew base layer

know-how informs

Eco LS crew base layer exploits Megmeister's expertise in garment design and advanced yarn technologies with body-mapped, targeted ventilation zones that provide climate regulation and breathability in a lightweight seamless knit.

"Unfortunately, it's not 100% biodegradable, only 96%, due to the recycled spandex yarn employed, but all in all, it's an 'ubergreen' garment," Jos points out.

The base layer subsequently received an ISPO 2021 Gold Award.

"In partnering with industry-leading brands like Megmeister we hope to create a catalyst for change in the industry," says Markus Kleber, adidas global vice president of product. "By offering a high-performance product with sustainable production at the core, we can serve the next generation of consumers with what they want and need – innovative and sustainable products which perform for a multitude of outdoor sports."

Cycling comfort

Megmeister is now poised to launch a new pad technology for bib-shorts for the cycling market.

The pads have been developed over the past two years with Megmeister's Warp Aero Suspension (WAS) knitting technique – again after very detailed studies of available products.

"Intensive athlete and scientific testing to date suggests this will be a game-changer for cyclists," Jos says. "Saddle discomfort is an issue that affects most cyclists, especially those spending a long time in the saddle. Recent research shows that 94% of cyclists have physical complaints while riding and that 64% experience saddle pain."

"Whilst there are a number of reasons for this, including proper bike setup, posture, clothing and the saddle itself, shorts and their padding can undoubtedly also contribute."

Despite their racy price tags, he adds, most mid to high-end shorts actually use the exact same padding.

"That's because there is one company which manufactures a very good range of foam material and sells it to many brands who then incorporate it into their bib shorts. Each brand may name their padding differently, but essentially, it's the same foam being used. As foam padding goes this is great quality, but we sensed there was an opportunity for cycle padding to get a long overdue upgrade."

What Megmeister has developed is a knitted structure based on a sequence of 'figure-of-eight' yarns between two outer fabrics, manufactured in a single operation.

"Following our data and being guided by the science, we focused on the issue of 'suspension' in other industries," Jos explains. "For example, we investigated suspension mechanics in cars and planes and once we gained a deep understanding of the problem we began to look at what a possible solution should look like. Ultimately, we knew that to create new levels of comfort we would have to specifically engineer and develop our own fabric with inbuilt damping qualities, similar to the suspension on cars."

Springing and damping

In car suspension technology, he adds, there are two physical operations involved – springing and damping – and both are needed.

"Most cars use steel springs for the springing and fluid-filled dampers – always referred to as shock absorbers, but that's a misnomer because it's actually the springs that absorb the shocks – for the damping."

"The springs support the weight of the car but allow movement under load, in order o smooth the ride. The force they quire to compress is proportional he distance they are compressed, to move 2cm takes twice the force as to move 1cm. However, because of conservation of energy, if they were not damped, the suspension would continue to bounce after a bump, which could allow the wheel to temporarily lose contact with the road, reducing grip."

The dampers reduce this bouncing. The force required to compress (or expand) a damper is proportional to the speed at which it is compressed (or expanded), not the distance.

"With our WAS technology, we have applied this science to the new knitted pads for bib-shorts – matching spring and damper rates to the pressure created by cyclists," Jos concludes. "This is a totally new concept."

Top: The Warp Aero Suspension (WAS) knitting technique has been employed to develop new pads for bib shorts for cyclists
Bottom: The WAS knitting technique allows the integration of targeted ventilation zones in seamless structures

Innovation, creativity, and ins

In 2020 ISPO Munich was probably one of the last face-to-face events that took place in Europe for the sports-market, but having to cancel the 2021 edition due to Covid-19 wasn't really an option so the world's largest sports trade fair set new benchmarks by creating a virtual show. 545 exhibitors and more than 31,000 participants from 110 countries took part over 5 days, a day longer than the normal in-person event. The editor, Vanessa Wakefield, attended and feeds back on some key highlights.

The usual product and company presentations by exhibitors took place in the Expo Area, with a complimentary conference line-up covering the social megatrends of sustainability, health, digitalisation and creativity. "Even as a digital event due to the current situation, ISPO Munich has lived up to its role as a leading platform and source of inspiration for the entire sports and outdoor industry," summed up Klaus Dittrich, CEO of Messe München. "Especially now, it is more important than ever to take a united front as we tackle social challenges. The guiding principle 'Sport is stronger' unites our industry. We have seen this impressively over the past few days."

In addition, the annual ISPO Awards also took place with a jury of international experts selecting a total of 76 'Products of the Year', 'Gold Winners' and 'Winners' from 250 submissions in the four segments of Snowsports, Outdoor, Running and Fitness, and Urban Life. Six products were also awarded special recognition for their particularly sustainable concepts and ideas. The highest award, 'Product of the Year', was announced during the official award ceremonies via the live stream and all awards were presented during the event in a digital award showroom.

"Even in these particularly challenging times, product development didn't come to a halt. We have got to know many innovative concepts all over again. One thing that has again been made clear is that awareness for sustainability topics within the industry has increased across the board. That's why more and more manufacturers are committed to an advanced circular economy" commented Jacqueline Eskandar, senior product manager of ISPO Awards and Innovation at Messe München, summing up the most important findings from this year's edition of the ISPO Award.

Due to the prevailing Covid-19 pandemic, the two-day jury meeting was held in a hybrid format for the first time – partly on site, partly by video call. A jury of 25 experts, consisting of representatives from retail, designers, product specialists and media representatives, selected winners from the 250 submissions in segment-specific teams. The assessment criteria, in addition to overall innovation, included functionality, quality and choice of materials. Exceptional performance in terms of sustainability across all segments was honoured accordingly with special prizes.

Rental model

Winning an ISPO 'Product of the Year' for 2021, Cyclon by the Swiss running specialist On aims to set standards in sustainability with a subscription service. The jury recognised On's advances in sustainability by not only

1. ISPO Munich sets a benchmark creating a virtual 5 day show with over 31,000 participants

piration: ISPO 2021

extending its highest award, ISPO Product of the Year but also by giving an additional award for Sustainability Achievement.

"With the Cyclon, On meets two runners' needs: The quest for an up-to-date roadrunning-shoe, that performs like the newest generation of lightweight training or even racing shoes, and cares for the environment. The shoe is super light, at the same time it delivers good cushioning for running on hard surfaces, and it features a modern rocker-geometry, enabling the runner to perform better. The subscription service means always staying in the rhythm of having adequate running shoes. At the same time, the Cyclon means zero waste. It is a product that goes beyond the dimensions of traditional running shoe innovations." said Urs Weber, editor Runner's World and jury participant.

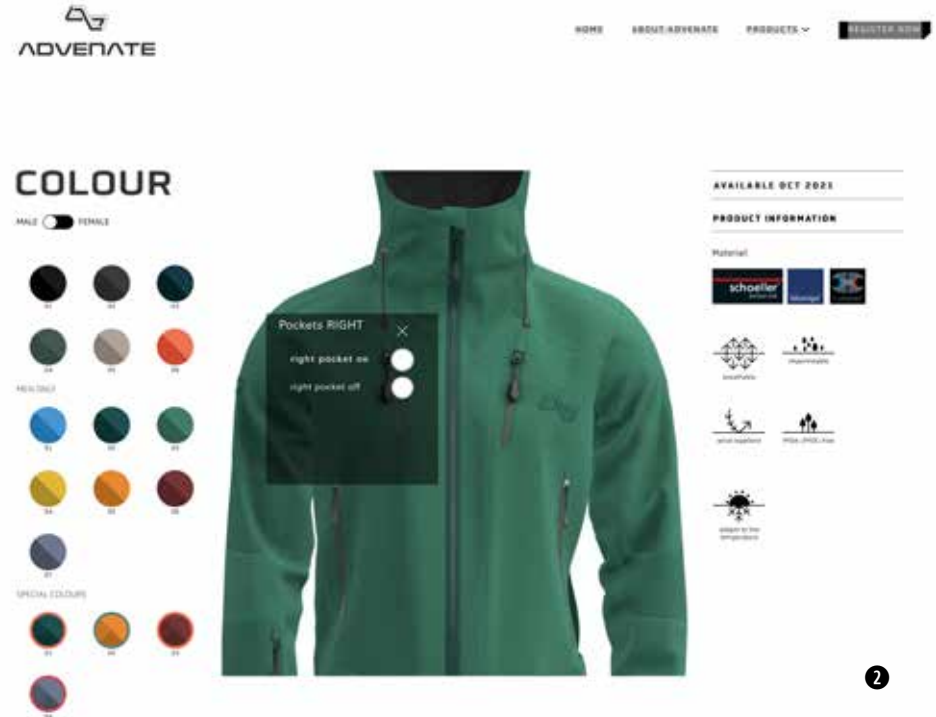
The Cyclon shoe is a product of three years of research in the On Lab and a breakthrough discovery of fusing two high-performance polyamides to fulfill the demands of a running shoe without compromising performance. On co-founder Caspar Coppetti was honoured to accept the ISPO awards on behalf of the On Innovation Team, commenting: "The Cyclon project is a small step, that hopefully will inspire other partners in the industry to follow On's path towards a positive impact on protecting the resources and the planet that we so much depend on to do our sports."

The subscriber will receive a new pair of running shoes up to twice a year. These are made entirely from sustainably sourced polyamide, more than 50 percent of which is made from bio-based castor bean oils. The castor beans are grown in arid areas where not much else survives, and the shoes are produced using a single cut of fabric for zero waste. At the end of the shoe's lifespan, the worn-out shoes are exchanged for new ones. The old shoes do not end up in landfill but can be recycled as a whole. This is intended to save waste and secure valuable raw materials.

For USD$29.99 per month, the Cyclon subscription service provides runners worldwide with the latest in running technology and the means to return it in exchange for On's next version, and previously returned, recycled, and rebirthed materials. By ensuring after-life acquisition of used products via a subscription model, Cyclon represents a significant landmark in sportswear's circular economy. This year Cyclon aims to redirect approximately 9 tons of material away from landfills or incineration. Its guiding principle, 'the shoe you'll never own', refers to the environment-friendly 'run, recycle, repeat' subscription model.

Customisation and local sourcing

In the Snowsports Awards category and winning a Gold Award was German headquartered Advenate GmbH with its MyOne products. MyOne allows the consumer to customise the garment online, it is an online product configurator for functional winter sportswear. Pockets, length, equipment, colour and cut, can all be altered and if you prefer your jacket looser or with a closer fit its freely selectable. After the order is placed, the jacket is made to measure from high-quality fabrics by Schoeller and delivered from production in Germany within two weeks.



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From the outer fabric, the padding and right down to the last button, 100% of the companies materials and fabrics are all sourced in Europe. This way the company aims to minimise its CO_2 footprint and also guarantee sustainability along the entire supply chain.

The company claims to only use materials that have been manufactured in an eco-friendly and sustainable way for its products. All of the fabrics used must have been produced and processed in a manner that is safe for the environment or must contribute to reducing waste.

Functionally mapped

A theme for many of the products was body mapping, ensuring functionality and comfort for the wearer. Another Gold Award Winner, this time in the Outdoor category, adidas TERREX x Megmeister showed this to perfection. The knit fabric of the long-sleeved functional undershirt Drynamo Merino ECO LS Crew Baselayer the result of a collaboration between adidas TERREX and Megmeister combines merino wool with recycled synthetic yarns. The consistent body mapping allows for a comfortable fit with ventilation zones, breathability, and a light weight.

Seamless knit technology provides a figure-hugging fit and is said to improve temperature regulation and moisture management. The sustainably minded baselayer offers moisture management, good ventilation, plenty of comfort and full freedom of movement for training and competition. The comfortable fit comes from body-mapped targeted ventilation zones that provide climate regulation and breathability in a

2. Customisation and sustainability go hand in hand at Advenate

3. adidas Terrex x Megmeister's Drynamo Merino ECO LS Crew Baselayer providing body mapping innovation

lightweight seamless knit.

(More information on Megmeister's innovations is on pages 14 and 15)

Closing the loop

Not just a theme in the Awards, closing the loop also came through strongly in the presentations.

Adidas Terrex talked about its aims to have all product use only recycled polyester by 2024. Using the example of the Futurecraft.Loop Anorak that won an ISPO Award in 2020, Birgit Freundorfer, adidas Terrex design director, talked about the importance of innovation, saying that, "innovation must not mean adding complexity, we must look at simplifying products".

The average outdoor jacket consists of 30 items, so for the Loop Anorak, the company looked at how it could create a simpler solution without compromising on design. Coming from the angle that to be sustainable it's important to also look at completely new processes, adidas Terrex is supporting a recycling economy. Instead of making jackets that are increasingly complex and made of different materials, adidas is using undyed mono-material made of 100% polyester, making this weatherproof jacket extremely easy to recycle. The jacket uses Primaloft Parley X insulation, PrimaLoft has had a strategic partnership with environmental organisation Parley for the Oceans since 2019. As the first insulation provider to partner with Parley, PrimaLoft uses plastic waste intercepted from remote islands, beaches and coastal communities to manufacture high-performance insulation products.

Connected products

Looking at how products are produced and used is also part of a project by, EON, one of fashion retail's leading product cloud platforms. Through product digitisation, brands can turn products into monetisable assets and media channels - unlocking new business models, connecting and engaging customers and driving sustainable and circular business model transformation. EON claims to be the first Internet of Things platform to connect products from new to re-new, and the only platform at the heart of fashion retail with a global partner network. EON pioneered industry's CircularID protocol to enable the data-exchange across the circular value chain essential for scaling of the circular economy globally. EON's partners and clients include; YOOX Net-a-Porter, H&M, PVH Corp, Target, Nanushka, Gabriela Hearst, Accenture, SAP, and Microsoft. EON has partnered with Microsoft to bring 400 million products online by 2025 through a collaboration that introduces an industry-wide digital foundation for a connected and circular economy across fashion, apparel and retail. Eon's CircularID Protocol and Eon's Connected Products Platform powered by Microsoft Azure make it possible for brands and retailers to introduce deeper and more dynamic relationships with their customers, new revenue streams and business models, and a sustainable relationship with our planet.

Talking about the project at ISPO, Elyse Tosi, director of connected products at EON introduced us to partners, Houdini who will be the first brand to use YKK's TouchLink zipper puller on a product with the ability to create a two-way connection with customers. The puller on the Touchlink zipper

Recently published the EON report provides background on how CircularID Connected Products will unlock new forms of value and create systems to power a circular economy.

slider contains an NFC chip which acts as a connection point to the internet when touched by a smartphone. The addition of the technology within the zipper will only add a small increase in price.

Talking about the product Brian La Plante, sustainability lead at YKK, commented: "Using the same technology that powers contactless payment systems, the NFC reader built into smartphones reads the data encoded in the puller to trigger a connection to the internet. Depending on how the brand has enabled the connection it can present a wide range of information or trigger specific actions on the phone. It can range from offering product specific information such as details about where the product was made, materials used and how to care for it, to starting a spotify playlist, or listing the ski conditions at your favourite ski resort. The information and customer experience that the technology can enable is only limited by the brand's imagination."

In Houdini's case it will help connect to the Houdini Universe the company's circular eco-system. Houdini's goal is to facilitate circular business models such as resale, rental, subscription, and recycling using TouchLink as a connection point. It hopes to engage its customer beyond the traditional transactional relationship to a more ongoing connected relationship.

YKK worked with Houdini's head of product Jesper Danielsson to create a custom puller to house the NFC chip. The design entirely encases the chip protecting it from weather and breakage. It can easily handle a lifetime of laundering and other rigors of daily life. One unique aspect of the Houdini design is that the puller is made of a clear material so that you can see the chip encased inside of it. This was done to draw the attention of customers and signify there was some special about the puller.

The next event in the ISPO network will be ISPO Shanghai in China from July 2-4. A little later, Europe's largest outdoor trade show, OutDoor by ISPO will take place in Munich from October 5-7, 2021. It is designed as a hybrid event – with offerings both on-site at the exhibition centre and online.

1. Birgit Freundorfer, adidas Terrex design director, talked about the importance of innovation
2. Subscribe, wear and repeat, Cyclon by ON brings a new dimension to footwear for sports
3 and 4. Houdini will be the first brand to use YKK's TouchLink zipper puller on a product with the ability to create a two-way connection with customers

Why built-in obsolescence is the enemy of sustainability

Patrick Gottelier, a Master at DeTao Masters Academy and Prof of apparel and product design at Shanghai Institute of Visual Arts, was in the fashion industry for 27 years, followed by seven years in UK higher education running a broad portfolio of design programmes and more recently, has spent a further seven years in China. He trained in industrial design, engineering at Central St Martins (CSM) and was offered a job in industrial management at Marks and Spencer's whilst studying on the Master programme there.

He feels that his 'durability' journey started whilst studying at CSM and says that his major external influencers were Richard Buckminster Fuller, E F Shumacher and Victor Papanek, who taught him three fundamental principles which remained throughout his industry and academic journey:

"Infinite growth and material consumption in a finite world is an impossibility." Schumacher.

"In persuading people to buy things they don't need, with money they don't have, in order to impress people who don't care, commercial design is probably the phoniest field in existence today." Papanek.

"Form follows function." Fuller.

Patrick, although he agrees that all three were correct, up to a point, wishes he'd studied them more intensely to have got past the strap lines and developed a more nuanced interpretation.

Joining Marks and Spencer (M&S), he didn't fully comprehend at the time that the company was at a seminal point in UK commercial history. M&S had recently revised its marketing subtext from 97% British made to 95% British made. He heard some of his new colleagues quietly muttering phrases like

1, 2, 3. Student Minrisot award winning Qipao was designed as a response to her mother's fight with breast cancer

'thin end of the wedge' and nodded knowingly when the 95% disappeared altogether. What had happened at board level was that the decision had been taken to roll out offshoring trials to fully embrace low-cost manufacturing. Chasing the cheap needle had begun in earnest.

Following two years of corporate life, in 1977, Patrick together with Jane Gottelier, a CSM fashion graduate, launched a knitwear brand 'Artwork', and embarked on a roller coaster journey through the heady days of the 80's and 90's chasing growth and recognition, building an impressive international customer list. This period was important as it led to changes in the pair's thinking that directly impact on the durability theme of this article.

During the late 80's, early 90's the Gottelier's followed commercial advice and the general pattern many 'designer brands' were developing - they could add revenue faster than fixed overhead by producing more collections per year, first came a 'Cruise' collection for the US, then 'Holiday', and 'Spring 1' all in addition to the biannual Spring/Summer and Autumn/Winter collections. In short, by default, they were becoming a 'fast fashion' brand.

It would be easy to say that they remembered the lessons of Fuller, Schumacher and Papanek but sadly that was not the reason they added a further two seasons; introducing a menswear collection that was intended to be a classic traditional collection but which fulfilled the purpose of utilising production periods that would otherwise be under-utilised by the fashion collections. The concept happened to be, by default, expensive and durable. It didn't take the Gottelier's too long to realise that by emphasising the classic nature of the brand together with its durability, they could, more easily, justify its price.

By 2004 the Gottelier's were undertaking consulting work and they added Falmouth University to a growing list of consultancy clients. Falmouth wanted to explore the concept of adding a fashion programme to its portfolio, but the initial advice given was that the UK did not need another fashion design programme, however there was a large and growing active sportswear sector that was under-catered for within the university arena.

By 2006 a couple of programmes had been written and the Gottelier's decided that they would like the challenge of running them.

Very soon the concept of sustainability, although referenced in the new course documentation and teaching plans became a visceral issue. A central responsibility of education must be that you help to prepare your students for a future that is yet to be determined. How is your past experience relevant to your student's future, what lessons can you usefully pass on?

One morning a small group of Patrick's brightest students sat together on the grass outside the entrance to the department. As he passed them, they called him over to answer some very direct, probing questions;

"Does the fashion industry employ slave labour and if so, why?"

"If the fashion industry is so polluting should we be studying fashion design at all?'

His answers? Then and now are based on personal experience. From his M&S days, he has always felt that it is the responsibility of the designer to fully understand his or her economic and social impact throughout the entire supply chain. In addition, if you want to have a positive impact and change a commercial or social structure, you will be more effective from the board room of a big company or political platform than waving a banner outside of either.

If when it comes to the design of a product you think that it should be durable in every aspect, not just its physical attributes, but perhaps more challengingly, also in its ability to create emotional connection, you will keep textiles out of landfill for longer whilst reducing environmental damage over its entire lifespan.

In 2016 the Gottelier's were invited to become DeTao Masters with the DeTao Master Academy in Shanghai, China, and were given a blank canvas to write their own advanced undergraduate Fashion Design Programme in association with the Shanghai Institute of Visual Arts.

The prospect of having a voice and a positive influence in what was the largest fashion and textile manufacturing nation on the

Advanced Undergraduate Fashion Design Programme's Pop-up shop project - students have to design and make a garment for a one day only event the garment must be designed to fit or adjust to fit (and flatter) whichever body takes a liking to it

planet and clearly about to become the most powerful economically, played no small part in influencing their decision to accept. Here was an opportunity to have full control over an educational programme at the precise time that the politburo had announced that China's economy was to move its position from 'Made in China' to 'Created and Made in China'.

Their activities are roughly divided into three closely related parts:

- Establishing, building, and running the Advanced Undergraduate Design Programme.
- Running workshops for intangible cultural heritage actioners (crafts people), industry and universities.
- Lecture tours / key notes at universities and industry conferences.

The education programme is very much project based and addresses different aspects of sustainability, durability and emotional design at different stages through diverse projects over a four-year period.

Advanced Undergraduate Fashion Design Programme

The first sustainability focused project they ran in 2016, perfectly illustrates the progress China has made:

A very talented colleague introduced the project by holding a seminar during which she asked all the students to describe what they understood by the term 'sustainable fashion'. There was a long pause (normal we found at the time) much avoiding of eye contact and finally a definition was proffered:

"Ugly clothes for rich women?"

(hold this thought for a moment)

Other projects include, the Qipao project. The Qipao or Cheongsam, is possibly one of the most consistent and emotionally durable garments of all time and is notable for developing in iteration rather than revolution. Students are encouraged to research the history and develop their own iteration which whilst acknowledging the deep heritage, draws on personal experience and aspiration in order to evolve an original design. The stories of emotional connection that emerge during this project are truly inspiring.

During the Pop-up shop project students are asked to design and make a garment for a one day only event (now online) whereby the garment they design must be designed to fit or adjust to fit (and flatter) whichever body takes a liking to it. This project makes great commercial sense whilst at the same time addressing the issue of reducing dead inventory due to the ordering of inappropriate SKU's.

Another project looks at recycling - Of all the opportunities that Covid-19 lockdown has offered us, one of the most creative responses has been to the full lockdown recycling project. It wasn't necessary to ask students to imagine a world where we had run out of new materials, they were living it.

'The Balancing' Cooperation project: Long gone are the days when it was impossible to find the smallest vintage shop in Shanghai The Balancing is one of the new breed of retailers in China, mainstream and prime location and loudly championing sustainability.

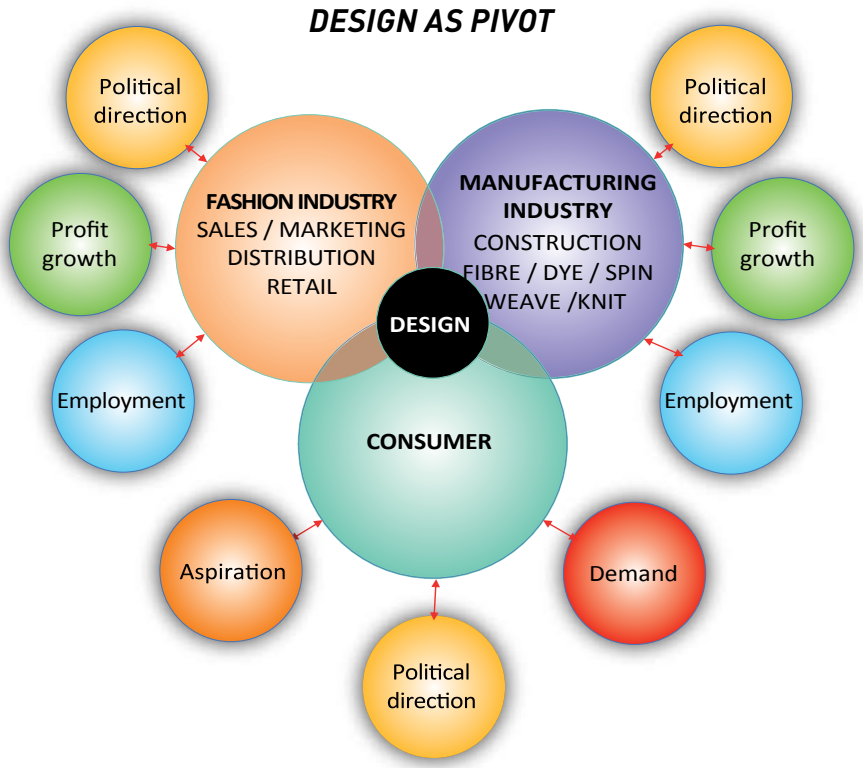
China has moved on from that attitude of 'ugly clothes for rich women' to become world leaders in renewable energy, electric vehicles and green innovation. It is not surprising that young designers are embracing all manner of sustainable agendas but the 'fast fashion syndrome' has not disappeared.

Intangible cultural heritage workshops

The Gottelier's find immense pleasure and a genuine honour in running workshops for the practitioners of some of the most exquisite crafts in China; from silk weaving and hand embroidery to Feng Shui compass making; from indigo dying to porcelain portrait painting. It has been increasingly clear that their students have become significantly more interested in their

1. The Balancing Cooperation Project: The new breed of retailer in China, mainstream and prime location and loudly championing sustainability

2. Fang Kai (Lebron), a student experiencing recycling at home during lockdown



own diverse heritage. The opportunity to have their students work with diverse heritage crafts people addresses issues of emotional longevity in a way that rewards them all.

Industry and conference lectures and keynotes

These have followed a theme of respectfully promoting the concept of 'Durability' as: sustainability with Chinese characteristics.

The twin paths pursued by the western fashion industry for the last 30/40 years of 'chasing the cheap needle' and ever 'fast(er) fashion' are clearly as unsustainable in terms of a business model as they are damaging to the planet. The first aspect is an easier sell to industry whilst the second gets a warmer response in academia.

The need to make the case to all the stakeholders is, Patrick believes, essential. Just as it is not possible to reverse the ecological damage caused by one aspect of the industry without addressing the global issue of exponential growth in consumption.

He feels it's vital that we recognise that the designers are not bit part players in the transformation required, but must be, and be seen as, crucially responsible to being the change. The experience of receiving feedback from hugely diverse audiences in China has convinced him of several things:

"The Chinese government see growing consumerism as a short-term necessity but are demonstrating that they fully understand the need to rebalance their economy to become sustainable - durable in the long term.

Fashion in China is close to having learned all it needs from the west and is already becoming 'Fashion with Chinese Characteristics' - heritage and emotional durability.

Schumacher and Papanek were right but Fuller was wrong not to have added emotional durability. As designers, we need to prioritise emotional durability over built in obsolescence.

Creating a worthy product is worthless if no one buys it.

We need to take responsibility for creating the systemic change that is required to favour emotional durability over superficial newness."

3. Jane centre stage at an Intangible Cultural Heritage workshop 'show and tell' session. This lovely lady, on the left of the image, creates patterned fabric by beating fresh flower petals into cotton fabric. The process has its own song that accompanies. Hence the delight and surprise on our faces

4. Jane with one of the Gottelier's Intangible Cultural Heritage (ICH) students

Sustainable clothing needs and emotional durability

All of us have had clothing reach a state where we can no longer use it. Maybe it became discoloured from a stain or from repetitive washing, or perhaps it ripped and is not worth mending. In such situations, the clothing has reached its 'end of life' because of its physical durability. The more physically durable a textile is, the more it can be used before reaching an unsatisfactory state. Dr Kevin Dooley, chief scientist, and Jessica Kosak, manager, technical development, at The Sustainability Consortium take a look at how by adapting physical and emotional durability brands could resolve over supply of garments within the supply chain.

Chances are though that you have gotten rid of some or maybe even most of your clothing before it reached the limits of its physical durability. You may have discovered it sitting in your closet or drawer and realised it was just no longer appealing. Or perhaps the style has come and gone, or your experience with the garment didn't meet your expectations. In these cases, the clothing is reaching its end of life because it has reached the limits of its emotional durability.

Physical and emotional durability are two sides of the same coin. Physical durability enables a garment to be used, but it doesn't guarantee it will be used. Conversely, a garment that has high emotional durability with its user will continue to be used as long as it is physically durable. In one case, we can't use the clothing anymore; in the other, we don't want to use it anymore.

The durability or longevity of clothing is a key

Offering customers the opportunity to have their jeans repaired free of charge ensures that Swedish company Nudie Jeans scores high on the durability scale. For Nudie Jeans repairing them is just as important as selling them

both physical

variable in making the clothing industry more sustainable. First, durable clothing, or in general clothing that is used more often, creates more value to society and the consumer based on the natural resources, energy, and human labour put into making the clothing. For example, it takes about 8 ounces of cotton to make a t-shirt, and according to the World Wildlife Fund, about 2700 litres of water, to both grow the cotton and manufacture the t-shirt (www.youtube.com/watch?v=xEExMcjSkwA). The amount of cotton and water used are the same whether the t-shirt is never worn or worn a hundred times. If the t-shirt is worn once, then the environmental cost it took for that one use is 2700 litres of water; but if the t-shirt is worn 100 times, its cost is 27 gallons per use. In many cases, getting more use out of clothing is our best lever to reduce environmental costs like greenhouse gas emissions and water use.

Second, clothing that can last longer and through more usage is much more likely to have a second life in the form of it being donated or sold and then re-used. In Adam Minter's book Secondhand: Travels in the New Global Garage Sale, he points out that across many product categories, including clothing, durability is the key factor to whether a product will ever be re-used. An old t-shirt might be donated when it is no longer emotionally appealing to its owner, but if it's judged to not be in good enough shape for sale, it will be recycled or landfilled instead of sold. Additionally, clothing rental or leasing models depend heavily on clothing durability and maintainability, as their revenue model depends on the number of times the item can be successfully rented.

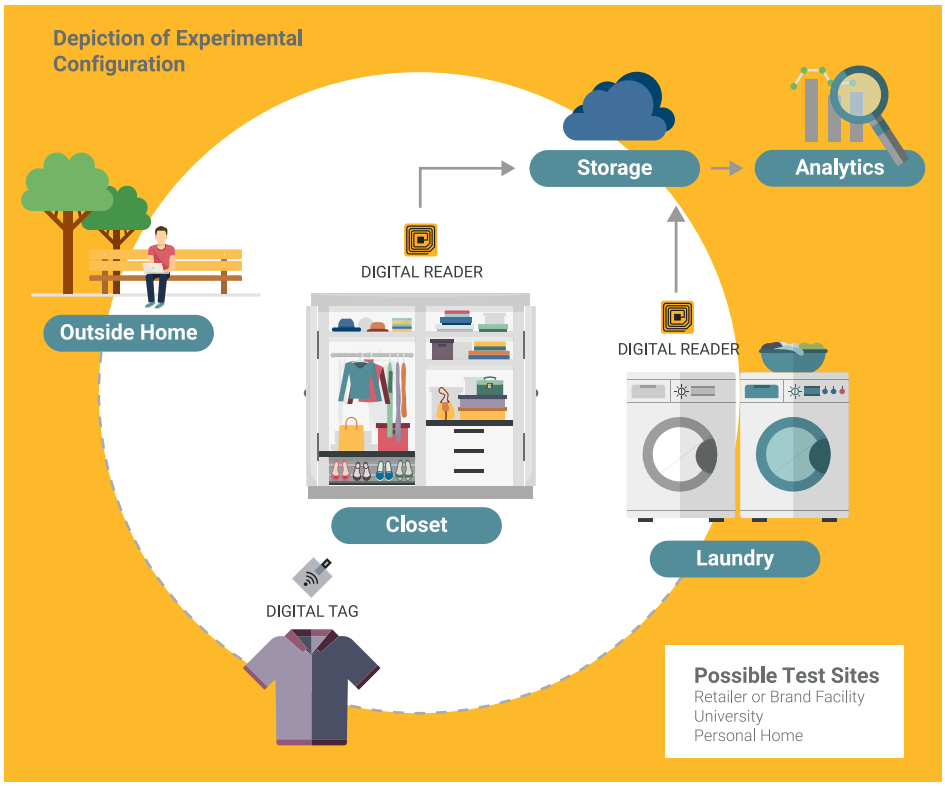
The importance of circularity to clothing and fashion has been recognised by many in the industry. In it's A New Textiles Economy report, the Ellen MacArthur Foundation reports that clothing utilisation has decreased 36% compared to fifteen years ago, but that in many cases the garment is landfilled rather than re-used: "Globally, customers miss out on USD$460 billion of value each year by throwing away clothes that they could continue to wear, and some garments are estimated to be discarded after just seven to ten wears."

Data on the expected physical durability of a garment is not common. In some cases, a manufacturer may provide a warranty of some sort, and we might infer that the expected longevity is at least as long as the warranty's length of time, but that doesn't really capture how many times it can be worn before expecting degradation. The Clothing Longevity Protocol (https://wrap.org.uk/resources/guide/extending-clothing-life-protocol), developed by WRAP and Nottingham Trent University, provides a check list of best design and manufacturing practices to improve durability, and a testing protocol for checking dimensional stability, colour, seam strength, and other characteristics after a defined number of washings (note that washing and drying are often considered the main factors behind clothing wear).

Textile researchers have found that physical durability depends on more than just textile material type. The garment can be designed in such a way that to make it more or less durable (for example, a double-stitched seam), and poor quality in production methods or in supplied yarn can also contribute to a less resilient garment. Customers may also contribute to degradation; for example, many clothing items can be washed in cold water but instead are washed in hot water which can impact thread strength, garment sizing, and stability of colour.

Emotional durability is the second factor when considering a garment's potential for useful longevity. Unlike physical durability, which is a garment's purely objective integral status, emotional durability is almost purely subjective, and represents the persons desire to wear a garment. Emotional durability is made more complex since the physical state of a garment

Emotional connection to clothing will often mean that we repair and repair the item, the connection can come from when we wore a garment or who made it for us



A better understanding of how we use our clothing could inform better industry solutions.

There is already broad adoption of digital tracking technologies within the clothing supply chain and the business case from an inventory management perspective is well-developed. Extending inventory tracking to use and end-of-life is the logical next step.

can play a significant role in the garment's suitability to a wearer. An example would be a well-worn pair of jeans. Wear patterning, fading, and fraying may be considered a detriment to physical durability, while heightening the emotional durability of the jeans.

Similarly, a garment that at first appears frail, for example, a thin sweater, would score low on a durability assessment. The emotional appeal of the garment, however, may cause the owner to take special care of the garment, prolonging its physical integrity. Complex as the dance between physical and emotional durability may be, they can both be inferred by measuring the amount of usage a garment can hold up to. If a wardrobe contains five t-shirts, and one t-shirt enjoys 30% more wear than the others despite similar physical availability, it can be inferred that that t-shirt has superior emotional durability.

The slow fashion movement that has emerged embraces the values of durability, longevity, and value as cost per use. In her 2007 article (https://theecologist.org/2007/jun/01/slow-fashion), Kate Fletcher says "Slow fashion is about designing, producing, consuming and living better. Slow fashion is not time-based but quality-based... Slow is not the opposite of fast – there is no dualism – but a different approach in which designers, buyers, retailers and consumers are more aware of the impacts of products on workers, communities and ecosystems."

Slow fashion requires change by both producers and consumers. Producers must choose materials that are more physically durable and create designs that are more timeless - have superior emotional durability. Customers must commit to more conscious choices when they do purchase new clothes, fix clothing when feasible, maintain clothing so it can be donated or sold when it has reached the end of its first life. The NGO Oxfam has created Second-Hand September to promote awareness and interest in purchasing used clothing.

In conclusion, a more sustainable clothing industry is one that not only attends to minimising the negative environmental and social impacts of production, but also creates designs that have good emotional and physical durability. To understand the complex dance between physical durability, emotional durability, and usage, further research is needed. The Sustainability Consortium's Project WearEver has demonstrated that digital NFC tags can measure garment utilisation. Parsing out the role of physical durability on utilisation is a greater technological challenge. We might be able to measure a garment's physical durability over time by using video capture and artificial intelligence technology; this may be a high value application for so-called 'smart mirrors'. If we observe a garment can be used because it is physically durable, and in fact is being used, we can infer the garment has strong positive emotional appeal to its user. These types of insights concerning physical and emotional durability will help clothing designers and manufacturers understand how to appeal to its sustainably minded customers.

In summary, Project WearEver will help lead industry solutions where:

- Consumers and retailers get valid information that helps them choose clothing brands that are more durable. Some customers will find data about their own usage patterns valuable.
- Retailers and brands get information on how their clothing products are being used, allowing them to understand the elements that drive clothes to be used more often, for longer and then re-used.
- Brands can rely on a trustworthy and efficient way to benchmark their product use quality against others and make public claims. They also get empirical data on longevity that helps them validate and create better clothing design criteria.

TI News

111TH ANNUAL GENERAL MEETING

THE 2021 ANNUAL GENERAL MEETING OF THE TEXTILE INSTITUTE WILL BE HELD ON THURSDAY 20 MAY 2021 VIA ZOOM WEBINAR

Following the success of the last Annual General Meeting in 2020, the 111th Annual General Meeting will be held digitally via Zoom Webinar. The virtual AGM enables the event to be accessible for all, therefore we hope that this will encourage more members worldwide to participate on the day.

The Institute is delighted to announce that a guest speaker has been invited to join members on the day and this will be announced shortly.

Information regarding the date and calling notice of the meeting will be circulated to members by email and a notice will be placed on the Institute's homepage of the TI website when details are available.

The health, safety and wellbeing of the Institute's members worldwide is a primary concern and as the situation regarding COVID-19 continues to affect us all globally so it was felt that this is the best option to allow members to take part in the business of the day and hear from the guest speaker.

Please contact Robyn Ingham, events co-ordinator via ringham@texitleinst.org.uk to book your place in advance.

INDIVIDUAL MEMBERSHIP SUBSCRIPTION RENEWAL

The Textile Institute has moved to having two anniversary dates for subscription renewals from Individual Members: 1 January and 1 July. This new structure is for all Individual Members of the Institute and all membership types whether a graduate, retired or standard subscription etc.

The Textile Institute would like to thank its members for their assistance during this process in preselecting their new membership subscription renewal month (January or July) and for updating their primary contact details, it has been a great help during this busy period. Please be reassured that if you have not as yet contacted the Membership Department the month closest to the member's current renewal date will be allocated to the current membership renewal date.

Please note it is important that members update the Membership Department with their primary email address so that the team can keep members up to date with TI news.

Payments made by annual Direct Debit for UK members, and those paying in advance of their due date, will still secure a 5% discount. Those members who pay by direct debit do not need to take any action. Direct debit is only available for members who have a UK bank account.

Members are encouraged to contact the Membership Department and Ellen Fitzmartin, senior membership coordinator via efitzmartin@textileinst.org.uk if they would like to select their subscription renewal date in advance or discuss any matters relating to the new renewal structure.

GET INVOLVED

The Textile Institute uses social media to reach out to the wider global industry. If members have news they would like the TI to share then follow us on Twitter, Facebook, Instagram and LinkedIn tag The Textile Institute in and we will share your posts.

MEDALS & AWARDS

Do you know someone whose contribution to textiles should be recognised?

Medals and Awards 2021 is now open for nominations

Download a nomination form at www.textileinstitute.org/medals-and-awards or for more information please email the Secretary to the Committee, Stephanie Dick via tiihq@textileinst.org.uk

PROFESSIONAL AFFAIRS

Professional Qualifications

Textile Institute professional qualifications are for all members of the industry and not just those with a background in textile technology. We have qualified Members from all areas including clothing, design, teaching, footwear, marketing, media, art, textile history, wet processing, chemistry, and smart textiles, the list is endless.

The professional affairs team is available to support you through the application process, please contact: Rebecca Unsworth runsworth@textileinst.org.uk

"I was looking for a professional qualification in the textile industry and I found that those offered by The Textile Institute the clearest way of demonstrating possession of a sound knowledge of the industry and a high standard of professional competence. A TI professional qualification is acknowledged by many national governments, as well as by employers establishing that the holder has proved their ability to practice. The Textile Institute's brand is the international sign of excellence and I'm pleased to have 'CText ATI', I wholeheartedly recommend TI professional qualifications to industry experts."

George Kathurusinghe CText ATI

Congratulations to the following members who have been awarded qualifications:

FELLOWSHIP AND CHARTERED MEMBERSHIP (CText FTI)

***Mr S Chakraborty**, Graduate Teaching and Research Assistant, Wilson College of Textiles, North Carolina University, Raleigh, US*

***Dr M T Islam**, Associate Professor, Ahsanullah University of Science and Technology, Dhaka, Bangladesh*

***Mr E M Kazi,** Chief Operating Officer, Textile Testing Services Ltd, DBL Group, Gazipur, Bangladesh*

***Dr H Memon**, Post Doc, Zhejiang Sci-Tech University, Hangzhou, China*

***Mr A Wahab**, Vice President (Operations), Crescent Bahuman Ltd , Hafizabad, Pakistan*

***Dr Z Yousaf**, Postdoctoral Research Associate, University of Manchester, Manchester, UK*

ASSOCIATESHIP AND CHARTERED MEMBERSHIP (CText ATI)

***Mr M Amin**, Country General Manager, Orta Anadolu Bahrain Co W L L, Kingdom of Bahrian*

***Mr M Hasnain**, Assistant Vice President (Pre Production), Crescent Bahuman Ltd, Hafizabad, Pakistan*

***Mr M Hassan,** Assistant Vice President (Agility/Lean Management and Industrial Engineering), Crescent Bahuman Ltd, Hafizabad, Pakistan*

***Mr T Islam**, Assistant Vice President (GWP), Crescent Bahuman Ltd, Hafizabad, Pakistan*

***Mrs H K D Mudiyanselage**, Deputy General Manager (Technical), Bodyline Pvt Ltd, Horana, Sri Lanka*

***Mr M T Rana**, Assistant Vice President (Cut to Pack), Crescent Bahuman Ltd, Hafizabad, Pakistan*

***Mr K Sykes**, Design Director, Turnbull Prints, Tottington, UK*

***Mr M E Umer**, Assistant Vice President (Apparel Operations), Crescent Bahuman Ltd, Hafizabad, Pakistan*

LICENTIATESHIP (LTI)

***Ms A Z Nuri**, Graduate Student, Jefferson and Philadelphia University, Philadelphia, US*

Accreditation

TI accreditation of a degree or diploma course means that the course has been deemed to satisfy the academic requirements for LTI or ATI. Students who graduate from these courses may therefore apply for their professional qualifications after a shorter period of work experience.

Accreditation is undertaken by a panel of experts who examine the course to ensure that it covers the subject area in sufficient detail to provide the appropriate level of specialised and general knowledge required for a TI qualification.

Many courses have already been accredited for ATI or LTI at educational institutions around the world.

Newly Accredited Associateship Level (CText ATI) Courses:

NATIONAL TEXTILE UNIVERSITY PAKISTAN
BS Textile Design
BS Fashion Design

UNIVERSITY OF LEEDS
MA Textile Sustainability and Innovation

UNIVERSITY OF THE ARTS LONDON
(LONDON COLLEGE OF FASHION)
MA Fashion Design Management

Approval

Approval is aimed at providers of short courses, e-learning and in-house training who wish to have the TI stamp of approval against their courses. The approved status will last for five years and can be approved with or without credit.

Please email Rebecca at runsworth@textileinst.org.uk if you are interested in having your course approved.

Newly Approved Courses:

GLORIOUS SUN SCHOOL OF BUSINESS AND MANAGEMENT, DONGHUA UNIVERSITY, CHINA
Fashion Supply Chain Management

CLOTECH ATELIER ACADEMY, TELESTIA MALAYSIA
Professional Certificate of Safety and Health: New Norm for Fashion Business

NOTICES OF DEATHS. The Institute is sad to announce the deaths of the following members:
N Balasubramanian CText FTI Bob Wheatley CText FTI George Stephen Taylor CText ATI

PUBLICATIONS HIGHLIGHTS

A new feature in TI News, each issue we will highlight recent publications which can all be purchased at a discount by our members.

Journal of The Textile Institute Article

Modeling of Fabric Motion Based on Small Videos
X Zhou, J Liu, X Hu, C Chen and Z Wu

Fabric recognition remains an ongoing challenge caused by complicated nonlinear and anisotropic elastic behaviour of textiles. In this paper, the authors have devised a computer vision system to automatically analyse the interaction forces of fabrics from videos.

For all recently published articles visit: www.tandfonline.com/toc/tjti20/current

Textile Institute Books Series Published with Elsevier

Handbook of Footwear Design & Manufacture 2nd Ed
A Luximon (Ed.)

Fully updated, expanded guide on the theories, processes, methodologies and technologies surrounding the footwear supply chain. Topics discussed include engineering design methodology, reducing manufacturing waste, footwear advertisement, emerging imaging technology, advice on the optimisation of manufacturing processes for productivity, and summaries of the latest advances from researchers around the globe. This updated edition also includes coverage of sizing and grading based on different footwear styles and methods, AI based personalisation and customisation, emerging models for online footwear shopping (involving data mining), and new methods for foot data analysis and representation.

For all books in this series visit: https://bit.ly/3s2NS35

The Textile Institute Professional Book Series Published with CRC

Science in Design: Solidifying Design with Science and Technology
T Grover and M Thareja

There is an important overlap between science and design. The most significant technological developments cannot be produced without designers to conceptualise them. By the same token, designers cannot do their job properly without a good understanding of the scientific or technical principles that are being developed within the product. Science in Design: Solidifying Design with Science and Technology reveals the significance of the essential yet understudied intersection of design and scientific academic research and encompasses technological development, scientific principles, and the point of overlap between science and design.

To view the full series visit: https://bit.ly/3cM7SR4

Editor in Chief – Elsevier Series

The Textile Institute can announce that Ian Smith CText FTI of Textile Consult Ltd has been appointed Editor in Chief of The Textile Institute Books Series published with Elsevier.

Ian has over 30 years' experience in the industry, working in both technical roles, at British Mohair Spinners and Milliken Automotive Fabrics, and in machinery sales for Roaches International.

Since 2009 Ian has been director of his own technical consultancy business Textile Consult Limited providing training and consultancy to the industry, working with brands, and manufacturers around the world, Ian is the tutor for The Textile Institute Short Courses on Dyeing and Finishing.

The Elsevier role will involve overseeing the Editorial panel and coordination of future development of the prestigious Textile Institute book series. If you have an in-depth knowledge on any aspect of textiles and would like to be considered as an author for this series, then you can contact Ian on ian@textileconsult.co.uk We look forward to hearing from you and discussing your proposal in more detail.

In an effort to reduce some of the environmental impact at The Textile Institute your magazine will now be in fully recyclable wrapping.

Also the 2021 Annual Report will be a digital only publication and can be found here: https://bit.ly/3sALgcR

A NEW LOOK FOR THE TEXTILE INSTITUT

When The Textile Institute came to us for a new website back in 2020, we couldn't wait to get started. The challenge for us wasn't just to capture the history, character and ambition of the organisation. It was also to build an interactive, collaborative, easy-to-use space for the thousands of international professionals, students and corporations that make up its membership.

Below:
The redrawn Textile Institute crest

Over a series of workshops with The Textile Institute team, these themes of connection, collaboration and insight really came to the fore, and we set about bringing them to life through the design and build of the site.

BOOSTING MEMBER BENEFITS

One of our key considerations was the sheer variety of different members. Textile usage spans the fashion, retail, medical, tech and academic worlds, and we wanted to make sure every user had easy access to the events, groups and communities that mattered to them. With this in mind, we dedicated a web page to Sections and Special Interest Groups, giving users a space to connect with likeminded people from their country, industry or region. Together with the global events calendar, professional course listings and extensive job opportunities, this made for an invaluable member resource, helping each user get the most out of their membership.

When it came to managing their membership accounts, we wanted to make things as easy as possible for users. The new-look members' area did just that, enabling each user to log-in securely, update personal details, auto-renew memberships, get in touch with other members via the membership directory, and access resources like the dictionary of Textile Terms & Definitions. And for non-members, we built the site around a clear goal path that promoted the benefits of membership, encouraging new users to sign up.

AN ECOMMERCE HUB

Another priority was to create a smooth, efficient e-commerce area that did justice to The Textile Institute's broad portfolio of books, journals, magazines and more, as well as highlighting their growing role as an independent publisher. As a result, the new e-commerce platform allows users to browse all publications and place orders quickly and easily via Apple Pay, PayPal, and other payment gateways.

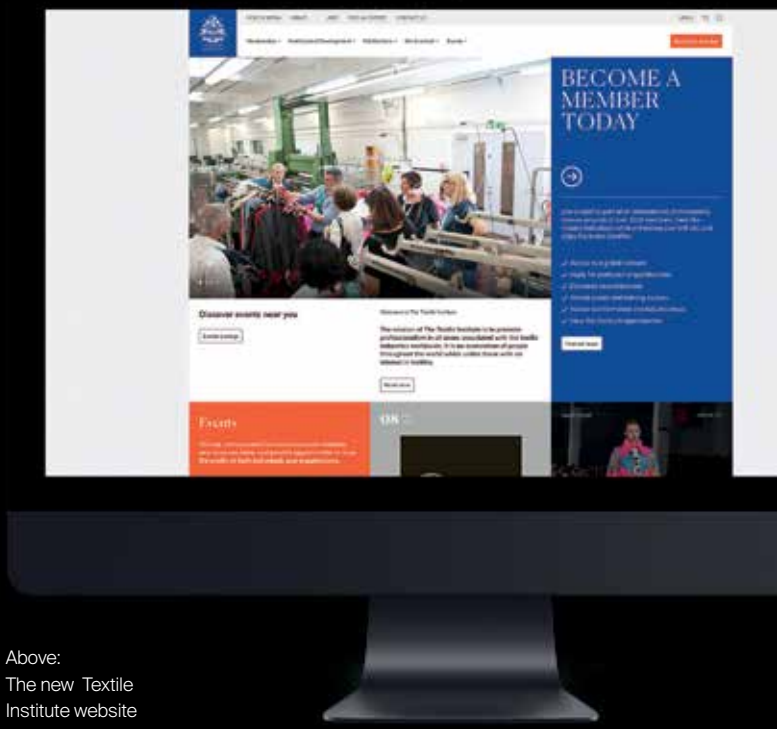
A NEW LOOK & FEEL

Together with the web build, we developed an elegant new graphic style across the site, honouring the institute's 110-year heritage, as well as its aspirations for the future. This included a dynamic new colour palette, bold yet sophisticated typography, and an evolution of their iconic crest, which we adapted for the digital platform, taking care to respect the intricacy and craftsmanship of the original design.

From design through to build, it was about creating an engaging graphic platform that captured the spirit of The Textile Institute, celebrating the valuable work it does and the amazing people it represents. And with the website all set to launch, we couldn't be happier with the results.

I LOVE FASHION & FABRICS AND MY MOTTO IS DRESS FOR A PARTY EVERY DAY AND THE PARTY WILL COME TO YOU, SO I WAS SO EXCITED TO BE INVOLVED WITH SUCH A FABULOUS ORGANISATION.

STEVE EDGE



Above:
The new Textile Institute website

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STEVE EDGE DESIGN

We're a design agency with a free-thinking, hands-on spirit. Founded by Steve Edge in 1985, we work with brands and businesses of all shapes and sizes. Our approach is interdisciplinary and open-minded. So whether it's through branding, digital design, web development, content creation or a mixture of everything, we help our clients find their story and tell it to the world. Find out more at www.steve-edge.com

INDUSTRY SHORT COURSE - Manchester UK

18 – 20 October 2021

INTRODUCTION TO TEXTILES

This intensive training 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 textile business. The course will cover the fibres, yarns and fabrics used in textile products for apparel, household and technical textile applications as core modules. The third day will offer two specialist modules covering dyeing and finishing; and fabric testing and analysis.

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

3 Days Full Course:
Member: GBP£620.00, Non Member: GBP£820.00, Teacher: GBP£480.00, Student: GBP£400.00
Rates are inclusive of UK VAT.
Rates for individual days are also available.

"Attending the course was great, it gave me a good grounding in manufacturing techniques, textile types, finishing and has left me with a far better understanding of the processes affecting our products. It really did seem to cover everything I could have wanted to know and gave me a good grounding to go on and apply for my LTI status. I would highly recommend this course to anyone in the industry who is employed in a focussed or specific area of textiles but would benefit from understanding the industry and its technologies on a much broader scale" - *Simon Raglione-Hall LTI, Clydesdale Ltd 2020.*

"Thank you and all the lecturers again for providing such an excellent course" - *Andrew Cumpstone - Outhwaites Ltd, 2020.*

Please contact Robyn Ingham, events coordinator with any enquiries: ringham@textileinst.org.uk

TEA WITH TI - Webinar Series

Taylor & Francis Group

The Textile Institute was delighted to host its first ever webinar series Tea with the TI, ***sponsored by Taylor and Francis*** *on 14 – 16 December 2020. The three evenings featured influential speakers from across the textile industry discussing stimulating topics.*

The Institute received wonderful feedback for the webinar series, the programme and the talks were enjoyed by all who attended.

Day 1 was chaired by Vanessa Wakefield, chairman of the Sustainability Special Interest Group. This session consisted of interesting talks from Ross Barry, Recyclatex Group and Dr Pammi Sinha CText FTI, University of Leeds.

Day 2 was chaired by Helen Rowe CompTI CText FTI, vice president of The Textile Institute and vice chairman of the Manchester and Cheshire Section. The second webinar consisted of thought-provoking talks from Adrian Wilson, AWOL Media and Textile Institute Short Course Tutor and Barbara Shepherd CText FTI, Manchester Metropolitan University.

Day 3 was chaired by Rebecca Unsworth, executive director of The Textile Institute. The final webinar consisted of inspiring talks from Richard Delahunty, Taylor and Francis and Holly Morris CText ATI, Surgical Registrar.

If you missed the talks please contact Robyn Ingham, events coordinator via ringham@textileinst.org.uk who will be delighted to share the webinar details with you.

The Tea with The Textile Institute webinar series will run every quarter for members in 2021.

The TI would like to hear from its members with potential topics for future webinars.

Parliamentary Lunch

5 NOVEMBER 2021, LONDON, UK

Please save the date for this year's Parliamentary Lunch which will take place at the House of Lords on 5 November 2021. Bookings for this year's lunch will open in July 2021. If you would like to provisionally book a place or table please contact Robyn Ingham, events coordinator ringham@textileinst.org.uk

Calendar

NOTE: Many events are cancelling, postponing, or moving to online format due to the impacts of Covid-19. We have tried to include all events where we are aware of dates, if events have been postponed until 2022 we have included the new dates where available. As things are changing daily, please always check that an event is still happening before booking any travel.

Highlighted events are organised by or in association with The Textile Institute.

13 April 2021	***Webinar*** *https://bradfordtextilesociety.org.uk* ***Textile conversations: Exploring the 1940s-50s James Cleveland Belle American Collection of prints at the Bradford Textile Archive***
21-23 April	***Virtual*** *www.edana.org* ***Outlook***
Opening 17 May	*London, UK www.japanhouselondon.uk* ***Making Nuno: Japanese Textile Innovation from Sudō Reiko***
18–20 May	*Hannover, Germany www.domotex.de/home* ***Domotex***
18–20 May	***Virtual*** *http://renewable-materials.eu* ***Renewable Materials Conference***
20 May	*Manchester, UK www.textileinstitute.org* ***The Textile Institute AGM***
13-15 June	*Shanghai, China www.techtextilchina.com* ***Cinte Techtextil China***
5-8 July	*Paris, France http://texworld.fr.messefrankfurt.com* ***Texworld***
6-9 July	***In-person and Virtual*** *Roubaix, France www.tbisociety.org* ***TBIS (The 14th Textile Bioengineering and Informatics Symposium)***
10-12 August	*Denver, US www.outdoorretailer.com* ***Outdoor Retailer***
7-10 September	*Geneva, Switzerland www.indexnonwovens.com* ***INDEX***
15-17 September	*Dornbirn, Austria www.dornbirn-gfc.com* ***Dornbirn Global Fibre Congress***
26-28 September	*Davos, Switzerland www.itmf.org* ***ITMF conference***
5-7 October	***In-person and Virtual*** *Munich, Germany www.ispo.com/en/outdoor* ***Outdoor by ISPO***
18-20 October	*Manchester, UK www.textileinstitute.org* ***Introduction to Textiles – Short Course***
22-26 October	***In-person and Virtual*** *Dubai, UAE https://bit.ly/3lDaDlx* ***In the future what will we wear? Expo 2020 Dubai***
5 November	*London, UK www.textileinstitute.org* ***Parliamentary Lunch***
9-10 November	*Cologne, Germany www.plasticfree-world.com* ***Plastic Free World Conference & Expo***
17-18 November	*Singapore www.edana.org* ***Outlook Asia***
17-19 November	*Hong Kong www.aplf.com* ***APLF***
11-14 January 2022	*Frankfurt, Germany http://heimtextil.messefrankfurt.com* ***Heimtextil***
8-10 March 2022	***In-person and Virtual*** *Paris, France www.jeccomposites-exhibitor.com* ***JEC World***
21-24 June 2022	*Frankfurt, Germany https://techtextil.messefrankfurt.com* ***Techtextil / Texprocess***

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Is your course accredited?

Give your students the best start by ensuring your course is TI accredited.

'I wanted to give an additional incentive to students to learn about textiles. This knowledge is essential to the future of the industry.'

Caroline Gilbey
University of Ravensbourne

The Textile Institute

For over 25 years, The Textile Institute has accredited a wide range of courses globally within all areas of textiles, clothing and footwear. Students who graduate from a TI accredited courses can apply for an additional professional qualification after a shorter period of work experience and in some cases directly on graduation.

Apply now!

Download the application form at
www.textileinstitute.org/professional-qualifications/accreditation

For more information, email
Rebecca Unsworth
runsworth@textileinst.org.uk

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