TEXDATA INTERNATIONAL

Magazine

Issue No. 3 2017

Business // Finance // Market // Technology

Yarn // Fiber *Spinning *Weaving * Knitting *Dyeing // Finishing // Washing // Drying * Nonwovens // Technical Textiles *Textiles // Apparel // Garment

Yarn fight: which fiber do we wear in the future?

- Interview with Mr. Pete Santora, Chief Commercial Officer, Softwear Automation
- The future of denim is technology
- Digitalisation gives Texprocess new impetus
- Techtextil trade show outdoes itself

Photo © Messe Frankfurt

Content

Dear Reader,

Summer in the northern hemisphere has come to an end, which means that it's already been a while since the conclusion of two exciting trade shows in the textile and nonwovens industries. As was expected, the Techtextil and Texprocess trade shows held in Frankfurt in May once again reached new heights in terms of the number of exhibitors and visitors. The fire of innovation was thus ignited. It goes without saying that this issue will present you with examples of these groundbreaking developments in the technical textile, nonwovens and composites industries. At the same time, you will be shown the latest improvements in textile machinery, that first made this diverse range of innovations possible.

Having said that, in this edition we will be focusing in particular on yarns and fibres, seeing as 2016 was an historic fibre year, in which the 100-million-ton threshold for fibre usage was both reached and surpassed. We will take a look at some of the developments in the fibres themselves but also at the latest generation of machinery, which helps to implement these increases in productivity in an economical manner whilst at the same time meeting the increased requirements for sustainable production by means of energy efficiency and flexibility. Particularly notable in this regard are the winding machines in their various forms.

We will also take a look inside the weaving mills. Since the last ITMA, leading manufacturers have introduced to the market several new machines for the production of terry towl weaves. We would like to introduce these to you in more detail.

Our denim articles over the past year in which we listed all the innovations along the value chain received a great amount of positive feedback. We would like to keep the ball rolling in that sense and provide an update on new technologies and ideas.

For this issue we have a new interview partner: Pete Santora, CCO of Softwear Automation. His company plans on turning the entire sewing industry on its head with the introduction of fully automated lines of sewing robots, and Pete reveals to us how this vision will to be put into practice.

We are as always looking forward to your comments and suggestions to redaktion@texdata.com.

Best regards
Oliver Schmidt

BABCOCK

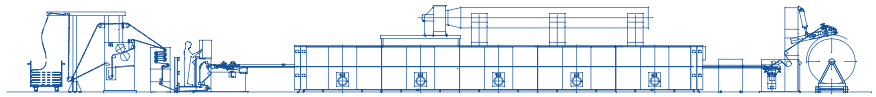
A legend returns.

For many decades, Babcock Textilmaschinen embodied the values of German textile machinery production like no other company. Thanks to outstanding engineering skill and very closed to challenges of its customers, the company developed robust and reliable machines that are simple to use and extremely productive. With the acquisition of the expertise brought by Babcock Textilmaschinen and the recent transfer of ownership of the brand, iNTERSPARE is now the legitimate successor to this technology leader. For us, this is a huge source of motivation and at the same time a commitment to continue the traditions of Babcock Textilmaschinen and to offer our customers the best possible technology.

Please ask us for more information about Babcock Textilmaschinen.

Machine programme and contact information under: www.interspare.com

iNTERSPARE
TEXTILMASCHINEN
ARTOS Kranz



Still the peak in finishing machinery.

The future of denim is technology

Almost a year ago, in the article „Put your jeans always on“ we pointed out how the denim industry had aggressively fought with many innovations back into the minds and clothing wardrobes of the consumers. And we mentioned how denim wants to use this new self-confidence to become a pioneer in many areas of the textile industry. Sustainability, transparency, creativity and the consistent use of innovations in machines and yarns can be listed here.

Photo © Amsterdam Denim Days / Team Peter Stigter

No less than Bluezone Business Manager Panos Sofianos has confirmed us in his lecture “Denim Tech / Novation” at the MunichFabricStart. He welcomed the audience in the age of “denim technovation” which is “the innovation of denim through technology, powered by technology and science”.

The past denim year once again impressively underlined the fact that the industry continues to be full of a new mood and is constantly developing and using innovations in many areas with the important industry trade shows KINGPINS, Denim Premiere Vision, MunichFabricStart and Denim Days, to name a few.

The global denim clothing market is estimated to be worth between 55-70 billion US$, and its size alone quickly makes clear how important it is for all market participants continuously to identify and implement new innovations so as to preserve, or even strengthen his or her position in the market. Modern, expertly configured and highly productive machinery is absolutely essential in being able to hold down a position at the forefront of the industry. In terms of sustainable production, gaining such a position requires processes to be scrutinised constantly, and to be replaced by updated and more sustainable practices.

We would like to take a brief look at a few recent innovations. Let’ s start with some improvements in the textile machinery sector.

Karl Mayer PRODYE indigo dyeing machine © Karl Mayer

© MUNICHFABRICSTART

A complete Monforts Eco denim line in Mexico © Monforts

After the big success of **PRODYE-S**, where the "S" stands for Slasher dyeing, **Karl Mayer Rotal** has introduced the indigo rope dyeing machine **PRODYE-R** in March 2017 to the market. The PRODYE-R operates with just eight dyeing units to produce deep, pure shades with a dye application of up to 5.5% of the yarn weight. The short wet zone reduces the bath volume by up to 25%. Furthermore, when changing the ball, the warp length remaining in the machine, which is unusable, can be reduced by 20%. Overall, the machine uses less energy and water and fewer chemicals. In fact, the water consumption can be reduced by roughly 30%. The programmable cans, into which the dyed ropes are laid in a precise arrangement, also make the long chain beaming process more efficient. The PRODYE-R complements KARL MAYER ROTAL's product portfolio.

With the new dyeing machine, the BALL WARPER, the LONG CHAIN BEAMER and the PROSIZE®, this company is the only global manufacturer involved in the one-stop provision of highly innovative rope dyeing technology.

This concept is impressive. One of the biggest companies involved in making-up denim clothing in Turkey, the Taypa Group, is cooperating with KARL MAYER ROTAL on a huge project in Algeria. A textile complex for producing textiles and apparel is to be built on an area of 250 hectares in this North African country, which will create 25,000 new jobs. The planned annual output is 60 million metres of fabric per year.

Textile finishing machines manufacturer **A. Monforts Textilmaschinen** has designed a new ThermoStretch skewing unit. It offers new and improved features for Eco friendly denim finishing avoiding the excessive use of 'expensive to generate' steam that was previously necessary for the cylinder dryers; thereby replacing the need for steam-operated cylinder dryers. It also provides a much gentler treatment of the denim fabric during stretching than was previously achievable together with an optimised fabric hand. The ThermoStretch unit also continues to be available as a 'long stretch' unit but without heating properties for the fabric.

Monforts has in depth 'knowhow' in high speed processing ranges for denim finishing with the 'double rubber' twin compressive shrinking unit working in tandem for working speeds even above 80 metres / minute. The larger fabric content of the ThermoStretch unit in combination with the 'double rubber' twin compressive shrinking unit ensures minimum residual shrinkage values and highest production speeds which could not be achieved before. In the denim industry, this concept is making a significant contribution to higher productivity and lower energy consumption. and the company has references in Vietnam and Mexico.

At coming **ShanghaiTex** in November Monforts will be placing special emphasis on its latest Denim finishing technologies including the innovative ThermoStretch skewing unit. Furthermore Monforts has launched a new 44 page World of Denim magazine.

It highlights the latest trends in denim fabrics and production techniques placing special emphasis on textile finishing with the company's range of Montex stenters and Monfortex compressive shrinking ranges. The WOD magazine is available on request to info@monforts.de.

matchpoint CEO Joerg Schmaeschke at ITMA Asia

matchpoint, well-known for leading diamond finishing technology**,** presented a couple of denim fabrics treated in different configurations with its sueding machine **diamondTec** at ITMA Asia in Shanghai. The results of the treatment are remarkable: the denim has an extremly soft touch. Not to forget that denim producers get the enormous economic and ecological benefits by using the diamondpeach technology at diamondTec sueding machine.

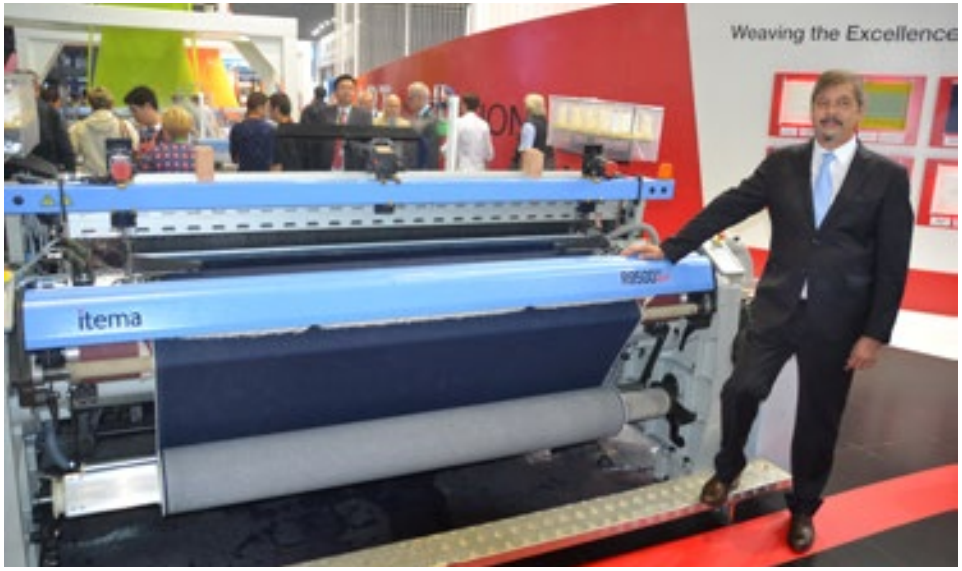
Denim samples treated with diamondTec © TexData International

In November 2016 **Saurer** announced that with a market share of over 90 %, the **Autocoro** plays a major role in the growth and value added in the Indian textile industry. Developed by Schlafhorst, this innovation has revolutionised rotor spinning mills in India and set entirely new standards in productivity and efficiency thanks to the individual spinning position drive. According to Saurer the Indian denim market is booming. In the last five years, turnover has risen by 15 % to a volume of USD 4.5 billion. Experts anticipate that the USD 8 billion mark will be reached by 2023. The development of denim yarn production in India has been correspondingly dynamic, with the Autocoro 9 being one of the motors behind this growth.

The **Autocoro 9** sets new records in energy consumption, productivity, efficiency, ease of operation and quality. The energy consumption is up to 25 % lower, with spinning costs falling by as much as 19 %. This makes it even more efficient to perform high-speed production at the technological spinning limit of the material. It even helps reduce personnel requirements, thanks to a 60 % reduction in maintenance input. All of this opens up new opportunities in the fiercely competitive market for denim yarns.

The new Autocoro 9 with 720 spinning positions at T.C. Spinners © Saurer

Itema launched in October 2016 during ITMA Asia the rapier weaving machine **R9500denim**, a brand-new product concept dedicated exclusively and especially to denim mills in search of customized solutions to respond faster, more effectively and efficiently to changing denim trends with versatile, high-performance, ad-hoc machinery. The Itema R9500denim comes fully accessorized and equipped with dedicated devices, including the new main motor with oil cooling to ensure unparalleled machine performances. Unrivalled textile versatility is guaranteed by the unique Itema shed geometry, widely recognized in the industry as best-in-class, and the SK weft transfer system featuring reinforced rapier heads and tapes optimized to weave denim weft yarns.



The new R9500denim presented by itema CEO Carlo Rogora © TexData International

Itema showcased the R9500denim also at the DTG in Bangladesh weaving a heavy denim (14 oz.), thus highlighting Itema machines' unique-in-the-market ability to produce even the most demanding and heavy denim styles, due to the sturdy machine structure and to the renowned Itema shed geometry. Even though the width of the machine - 2200 mm - may not seem usual for the Bangladeshi denim weavers, the aim of Itema is to introduce the latest trend in the global denim market related to weaving machines width necessary to weave stretch and super stretch denim. "Bangladesh is where a large part of the denim apparel we wear becomes ready-made clothing. If you consider that the Country's weaving mills weave today around 45 million meters of denim fabrics, which covers only around 15% of the annual demand of garmenting companies, and spend almost USD 4 Bln to import fabric, you can imagine what a huge opportunity producing indigo fabric locally could be for the Bangladeshi industry" stated Itema Group Sales & Marketing Director, Mr **Christian Straubhaar.**

Jeanologia launched at Kingpins China Tour trade show its revolutionary generation of laser that reduces the marking times up to 30%. The leading Spanish company in sustainable technology for garment finishing has designed and patented the High Dynamic Range (HDR), the new hyperbolic system that simplifies the way of designing, initiating a new era in laser production in the textile industry. Jeanologia's HDR system increases the contrast of the dynamic tones of the image, obtaining a level of depth closer to reality and thereby achieving a more natural and 3D design.

Production using laser will never be the same, HDR has started a new era in the textile industry.

Next we want to look at some denim innovations beyond style and fashion.

NILIT®, a leading global manufacturer and marketer of Nylon fibers, launched **Sensil®**, its new premium Nylon 6.6 brand for apparel, to the denim market at the Keyhouse/Bluezone - Munich Fabric Start. NILIT's full range of Sensil® performance products gives fabric designers many options to infuse denim with valuable attributes that consumers require in contemporary jeanswear. Sensil® is naturally softer, stronger, more durable, and more moisture-wicking and odorresistant than other man-made fibers, all important benefits in jeanswear. Sensil® blends effortlessly with cotton to create remarkable fabrics with beautiful drape and appearance. Sensill® performance yarns are enhanced to provide additional attributes that consumers desire in today's advanced denim products. Sensil® Breeze imbues denim with a cooling effect for enhanced comfort. Sensil® Body Fresh protects against the odors microbes can cause, which means busy consumers don't have to take time to wash their jeans as often. Sensil® Heat warms on chilly days while Sensil® Aquarius stays dry on warm days. There's even multi-tasking Sensil® Innergy that helps energize cells and reduce the appearance of cellulite.

Lenzing, Tonello, Santoni and **Unitin** partnered to create DEN/IM, a studio-to-street collection designed to show knit denim's potential as a viable alternative and competitor to traditional activewear bottoms and to classic woven denim. The new collection employs body-mapping for superior fit and performance, the efficiency of seamless knitting from Santoni, new sustainable wash treatments from Tonello and the advanced indigo knits from Unitin featuring Lenzing's TENCEL® lyocell branded fibers. Each knitted garment in the Den/IM 2.0 collection incorporates different combinations of fibers and knitted structures, to create a unique cross-over concept. It's all about integrating several sportswear benefits into the authentic denim world. Associated with this collection are terms like 'compression,' 'ventilation,' 'moisture control,' 'thermal conductivity' and 'body mapping'.

At MunichFabricStart **Orta Anadolu** presented their new **BIOCHARGE denim** and calls it one of their latest and greatest innovations. Infused with an array of minerals the world-first supercharged denim promotes muscle wellness by recharging and energising them throughout the day - reducing stress and fatigue.

Another big idea is adapting technologies from other sector of textile industry, for example technical textiles. At Techtextil 2017 in Frankfurt we spoke to **Schoeller Technologies** COO **Hans U. Kohn** and he sees a lot of opportunities for denim to adopt protective and insulating innovations developed by Schoeller. At the fair he presented a **reflective denim** which has been created to improve people' s health and security.

We think this could become a winner product for kid' s blue jeans. More examples for Schoeller innovations which can give denim an added value are **ceraspace**, a particularly high-performance protective fabric technology, offering a new dimension in abrasion protection. **corkshell** from Schoeller, it is now possible to combine the outstanding natural features of cork with those of high-performance fabrics. Or corkshell which offers much higher thermal insulation than functional fabrics while providing both high breathability and wearer comfort. **ecorepel Bio** imitates plants' natural protection with the aid of a high-performance, permanentlyodorless high-tech finish. It is PFC-free and is obtained entirely from renewable primary products. The finish envelopes the fibres of the fabric in a thin film, providing the repellent effect which allows water droplets and aqueous dirt to run off the surface.

Schoeller reflected denim Jeans © TexData International

There is also an idea to connect Denim with wool. **Max Mara** and **The Woolmark Company** have together developed an innovative Wool Denim line. Max Mara has utilised innovative 100 per cent Wool Denim fabrics that replicate the look and style of traditional denim - retaining the traditional 3/1 weave - but have added benefits thanks to the natural qualities of Merino wool, including increased softness, warmth and resistance to wrinkles.

Wool denim line by Max Mara © The Woolmark Company

ITV denim & Anbasja Blanken win Global Denim Awards 2016 © Global Denim Awards / Team Peter Stigter

His Majesty King Willem-Alexander and Her Majesty Queen Máxima of The Netherlands visiting the exhibition © ITV Denim

INVISTA debuted in **Intertextile Shanghai's Beyond Denim** and demonstrated its denim technologies, including LYCRA® dualFX®, LYCRA® BEAUTY and COOLMAX®, as well as the latest THERMOLITE® IR technology at their new **LYCRA® MOVES DENIM** Pavilion featuring five co-exhibitors.

The **Global Denim Award 2016** again was awarded to **ITV denim**, the Italian premium denim mill, in partnership with **Anbasja Blanken**. **Arvind Mills** walked away with the Best Fabric Award. The winning GDA capsule collection highlighted a glow in the dark denim fabric, created by ITV for Anbasja's deep sea coral concept. The collection has been exhibited at The Kingpins Show New York.

In June 2017 a special selection of the best five Italian-Dutch denim co-creations have been showcased during an exclusive event in the presence of the **Dutch Royal Couple**.

The Triennale in Milan has set the stage for the "Global Denim Awards Italian/Dutch Edition". For this event, **ITV Denim** had been selected to display three innovative and highly successful collaborations with some of the most outstanding Dutch designers today.

There is also interesting news from retail.

In October 2017 **H&M** introduced **Conscious Denim**, a collection with clean styling and contemporary fits, that not only uses more sustainable materials, but also more conscious processes. In a first for H&M, the washes used on its denim have been graded to assess their environmental impact, including energy and water use. The collection includes pieces for women, men and children. When creating Conscious Denim, H&M used criteria from Spanish denim consultants Jeanologia to test its denim washing processes, including water consumption and energy consumption. To meet the Conscious Denim standards at H&M, the materials have to be more sustainable, and the washes have to achieve the highest status according to Jeanologia's criteria.

KINGPINS China City Tour 2017
© KINGPINS

The 'Beyond Denim' area at Intertextile Shanghai Apparel © Messe Frankfurt

Trends area at Denim Premiere Vision
© PREMIERE VISION

Target Corp, one of the largest cotton importers in the U.S., has set a goal to source 100 percent sustainable cotton by 2022 for its owned and exclusive national brands in apparel, home and essentials, and the retailer is introducing a new policy to help guide the way.

Target hopes to use its size, scale and influence to help the cotton industry tackle some major environmental and social challenges, while growing its investment in transparent and traceable sources.

Finally, we want to look at some important news from major industry events.

Messe Frankfurt Hongkong announced that China is now the second largest jeans market in the world, valued at $12 billion in 2015, while consumers' affinity for denim jumped from 39% to 63% from 2003 to 2016, **Cotton Council International** (CCI) and **Cotton Incorporated**'s 2016 Global Lifestyle Monitor Survey shows. This favourable market has attracted an increasing number of industry-leading denim suppliers to partake in the Beyond Denim hall at **Intertextile Shanghai Apparel Fabrics** – Autumn Edition 2016.

A challenging and inspiring edition of **Denim Première Vision** in April 2017 focused on innovation and technology. 1,220 exhibitors with varied profiles and more than 2,000 visitors -buyers, designers, creatives and order-writers – from the leading markets in the denim and fashion industry (Europe in the lead), came together at the show. The newly created Tech Innovation Scene has been an inspiration area dedicated to innovation and technology to conceive a new kind of denim, aligned with the market's new needs: climatic performance or thermal activation, luminosity, augmented reality, robotics and connected denim.

And to guide industry professionals and increase their visit efficiency, Denim Première Vision proposed new tools. One of it was an exclusive innovation itinerary at the show to keep up with exhibitors' latest technical and technological developments.

A big highlight has been the 1st **Denim Hackathon**. For nearly 48 hours, in a special, specifically equipped «Hackathon Room», Denim Première Vision welcomed 5 teams, each made up of 5 students from Europe's most renowned fashion and technology schools (AMFI / the Netherlands, La Cambre / Belgium, Ecole Duperré / France, IED Madrid / Spain, Istituto Marangoni / Italy), ITU / Turkey, Ecole 42 / France and HETIC / France) to an unprecedented competition to think-up the denim of the future. These talented Millenials doubled down on inventiveness, ideas and creativity to together come up with a new, innovative and inspiring project to open the door to new denim developments (a product innovation, a strikingly-new brand concept, marketing strategy, etc.), guided in their thought process by 3 expert mentors. After Jury deliberation, the **CHIMERA team** (Maeva Ecrepont / Hetic, Femke Jonkmans / AMFI, Marie Jouannin / Ecole Duperré, Alex Kpenou / Ecole 42 and Emma Raphaelle Rotenberg / Istituto Marangoni) won the first-ever **Denim Hackathon Prize**.
For the CHIMERA team, the denim of the future is: connected, functional, innovative, creative and sustainable. It is a smart jeans, made from bi-stretch denim enhanced with a new robotics-derived technology, so the CHIMERA DENIM can go from skinny to flare, slim to boyfriend - whichever style is preferred. At the next event on 14 & 15 NOVEMBER 2017 Denim Première Vision is going to celebrate its 10th anniversary.

The winning Chimara team © PREMIERE VISION

BLUEZONE is the biggest European denim show and due to popular demand, the high need for information and the strengthened position with over 100 brands the September event has been extended to three days thereby aligning with the duration of **MUNICH FABRIC START**. At the Denim Club with talks and workshops held on a specifically installed gallery at the centre of the BUEZONE expert talk and workshops covered developments and tendencies in this dynamic and fast-paced market. A new feature was THE INFINITE as a leitmotif integrated into the BLUEZONE – its evocative message was 'Denim beyond Seasons' – The Latest First. This concept picks up on new cycles and trends that dissociate themselves from the classical seasonal approach and adapt to the process of real-life necessities.

Amsterdam Denim Days
© Amsterdam Denim Days / Team Peter Stigter

Bangladesh Denim Expo
© Bangladesh Denim Expo

Bluezone at MUNICH FABRIC START © MUNICHFABRICSTART

New York Denim Days debuted end of September and presented the full range of products denim stands for as well as workshops, installations and artists including the incredible Ian Berry. “Denim Days will be our Woodstock,” said Adriano Goldschmied, the “godfather of denim”, in preparation of the event. Following the comments and articles in the social media it has been for many people. In September Adriano Goldschmied has become equity partner of MYR, a newly launched software company aimed to revolutionize the fashion and apparel industry.

The upcoming edition of **BANGLADESH DENIM EXPO** sets its main theme around **transparency** and promises to explore it with strategic key actions and unique events to be presented for the 7th edition, 8-9 November 2017, Dhaka. “We believe that transparency goes beyond being merely fashionable and trendy. It is the foundation on which fair and trust based businesses are built across the entire value chain, right from the final consumer to the farmer who grows the cotton. Everyone along the value chain must get fair treatment, get the right value for their investment whether in terms of time, effort or money” claims Mr. Mostafiz Uddin, CEO and FOUNDER of Bangladesh Denim Expo.

Conclusion

So much for our overview of important innovations and news about the textile sector denim. As stated a year ago, the industry continues to make a major change and has not only taken up many crucial innovations in textile production, but also wanted to be a pioneer. This concerns megatrends such as sustainability as well as technical innovations. The changes along the denim value chain keep the competition moving. For companies, this means once again analyzing and modifying their own business model and, if necessary, expanding it with investment or new partnerships.

The 18th International Exhibition on Textile Industry

SHANGHAITEX 2017
上海国际纺织工业展

www.ShanghaiTex.cn

2017•11•27-30

Shanghai New International Expo Centre,
Shanghai Pudong, PR China

Exhibitor Enquiry

(852) 2516 3519

textile@adsale.com.hk

Visitor/Media Enquiry

(852) 2516 3510

textile.pr@adsale.com.hk

Connect with us

@Shanghaitex

Pre-register Now

Yarn fight: which fiber do we wear in the future?

The fiber year of 2016 will always be remembered as a year of records and as a turning point, for it was in 2016 that the 100 million tons threshold of fiber production was exceeded for the first time. Such a milestone was almost unimaginable just a few years ago. The most forecasts and reports from the year 2010 for example have been predicting the production of about 80-90 million tonnes.

Photo © Messe Frankfurt

The fiber sector is growing. This particularly applies to the clothing sector, since if the predictions for world population growth are accurate; it is likely that 8.5 billion people will populate the earth by the year 2030. However, the fiber sector is not only growing - it is evolving too, especially in relation to the mega trend of sustainability and as a result of the innovations brought about through the use of man-made fibers.

If you know anything at all about the fiber industry, you will also know which sector of the market has been driving growth in recent years: it is, of course, man-made fibers in all its shapes and forms, the first and foremost of which is polyester. By way of contrast, natural fibers have endured a challenging few years. Who doesn't remember, for example, the sky-rocketing prices of cotton in 2011, when one pound of cotton was valued at 2 USD, which had knock-on effects for the demand situation in the sector and doubtless also influenced the considerable investments in polyester facilities.

Let's take a look at the hard evidence, in other words the breakdown of those 100 million tonnes of fibers between the various fibers. The Fiber Year writes in its "Global Fiber Market in 2016" report: "Fiber production on global stage has grown 3% to 100 million tonnes due to 8% rebound in cotton production after disastrous contraction in the 2015/16 season. The world market has even arrived at 101 million tonnes when taking into account the cotton consumption which was fairly unchanged to the preceding year. However, the new all-time high was result of a further deceleration in demand at retail stage.

Final end-use slowed in the fourth consecutive year to a little over 1%. Manmade fibers now occupy 70% of the global market. While synthetic fibers have suffered from their slowest growth in eight years at below 2% cellulosic fibers have expanded at a rate above 3%."

Lenzing has published similar figures. They write: "The increase of the world fiber market consumption was 1.5% up to 99 million tons in 2016 according preliminary calculation. Oil-based synthetic fibers had the biggest share with 62.7%. Cellulosic and protein-based fibers consist of cotton (around 24.3%), wood-based cellulose fibers (around 6.6%), other natural fibers (around 5.3%) and wool (around 1.1%) ."

Furthermore Lenzing states on its webpage that "Wood-based cellulose fibers are a coveted, high quality niche product with partially better properties than cotton." And that it is "expected that the global megatrends (population growth, prosperity growth, sustainability/climate change) and a limited cotton supply will further increase the demand of wood-based cellulosic fibers."

What is right in every case is the limited cotton supply. Cotton production depends on the size of cotton growing area and of course on the yield. The size of cotton area on the other hand depends on raw cotton prices in comparison to other crop prices and a couple of factors like for example the war in Syria or Hurricanes. Lets have a look on current figures.

ICAC gives us in the latest statistic the following figures: „World cotton production is projected to increase by 10% during 2017/18 reaching 25.4 million tons. Higher cotton prices during 2016/17 and better cotton price ratios to other competing crops during 2017 planting campaign resulted in expansion of cotton area by an estimated 3 million hectares to over 32 million hectares. During 2017/18 the largest gain in production of 23% to 4.6 million tons is projected in the USA. Production is projected to increase in all other major producing countries during 2017/18, including India, China, Pakistan, Brazil, Francophone Africa and Turkey.

Global cotton mill use is projected to increase at an improved growth rate of 2.7% during 2017/18 reaching 25.2 million tons. In comparison, during 2016/17 world cotton mill use grew by 1.6%. Mill use in China is projected to grow by 1.5% to 8.1 million tons. Cotton mill use is also projected to grow moderately in India, Pakistan, Turkey, Bangladesh, Vietnam and Brazil.

This sounds like growth. However, if you compare this to previous figures from 2013 you can find out cotton production went down in the last years. In 2011/2012 season for example cotton production was 28.04 million tons and decreases to 25.54 million tons in the 2013/2014 season. Consumption was 22.8 million tons in 2012, 23.48 in 2012/2013 and 23.51 in 2013/2014 season.

In comparison to the projection for the 2017/2018 season of mill consumption there is a growth of around 7% or 1.8% on yearly basis.

If this kind of growth remains steady at 1.8% over the next few years, it would lead to fiber consumption totalling some 30 million tonnes in the year 2030. Of course, these quantities must first be produced, since stockpiles would very quickly be exhausted in order to make up for shortfalls.

Let us also consider the prices. Following two years of stability starting in mid-2014, with prices around 60¢ per pound, prices began to move again in mid-2016 and reached a maximum of almost 80¢ in April 2017. Since then, prices have been relatively volatile with fluctuations around the 70¢ mark and swings of +-5¢, which equates to a price difference of around 17%. This is not insignificant, but nor is it dramatic.

The effects could potentially be dramatic elsewhere, as the current trend for sustainability is rapidly gaining momentum.

This primarily affects the increasing amounts of sustainably produced cotton, and predominantly of BCI cotton.

On 2nd October BCI Civil Society Members Pesticide Action Network UK (PAN UK), Solidaridad and WWF have published the Sustainable Cotton Ranking 2017. They share a vision for a more sustainable cotton sector. In the second Sustainable Cotton Ranking report, they assessed the performance of 75 of the largest cotton-using companies, up from 37 companies in 2016. Companies were scored and ranked on uptake of more sustainable cotton, policy and transparency.

The report notes that cultivation of more sustainable cotton has never been higher, reaching 2.6 million tonnes in 2015/16 and representing around 12% – 15% of global cotton supply. BCI represents the largest share of more sustainable cotton with 2.5 million metric tonnes (MT) of Better Cotton lint produced in 23 countries (2015/16 season).

On the other hand the report confirmed our analyses done in issue 1 /2017 that there is a gap between production and consumption. The report says: "The production of more sustainable cotton has never been higher. However, only 21% of what's available is actively sourced by companies. The remainder is traded as conventional cotton. This gap presents a serious risk for the future of more sustainable cotton. With this ranking, PAN UK, Solidaridad and WWF hope to accelerate demand and uptake of more sustainable cotton by clothing and home-textile retailing companies."

This may come as a surprise, and even more so if we look at the demand side, as this is witness to increasing numbers of avowals and commitments issued by brands and retailers to include only sustainable cotton in their collections by a certain point in time. One of these committments and probably the most prominent and important is a pledge titled 'The Sustainable Cotton Communique'. It is the result of a high-level meeting attended by HRH The Prince of Wales and organised by The Prince's International Sustainability Unit (ISU) in collaboration with Marks & Spencer and The Soil Association.

In May 2017, 13 of the world's most renowned clothing and textile companies, in the presence of HRH The Prince of Wales, signed up to the Sustainable Cotton Communiqué. On October 11th, 23 more clothing and textile companies signed up to the communiqué at the annual Textile Exchange conference. The total number of companies that have signed the Sustainable Cotton Communiqué now stands at 36. Through this communiqué, these companies have committed to ensuring that 100% of the cotton they use comes from sustainable sources by 2025. The companies that have signed up to the communiqué thus far are: ASOS, EILEEN FISHER, Greenfibers, H&M, IKEA, Kering, Levi's, Lindex, M&S, Nike, Sainsbury's, F&F at Tesco, Woolworths, Adidas, A-Z, BikBOk, Burberry, Burton Snowboards, Carlings, Coyuchi, Cubus, Days like This, Dressmann, Hanky Panky, House of Fraser, Indigenous Designs, KappAhl, Kathmandu, Mantis World, MetaWear, Otto Group, prAna, SkunkFunk, Timberland, Urban, Volt and Wow.

The communiqué defines sustainable sources as Organic, Fairtrade, Better Cotton Initiative (BCI), Cotton Made in Africa and recycled cotton certified to an independently verifiable standard such as the Global Recycled Standard (GRS) or the Recycled Claim Standard (RCS). In addition, Cotton Connect's REEL programme and code provides a starting point for businesses aiming to for greater sustainability in their cotton supply chain.

It is hoped that this communiqué can act as a catalyst to spur a shift in the market towards the use of more sustainable cotton. As stated in the communiqué, companies will be required to independently publish their progress from 2018, which will be collected by Textile Exchange. The ISU will continue to work alongside partners including M&S, The Soil Association, Textile Exchange and others to encourage more companies to sign on to the communique and in improve the sustainability of cotton production.

That's enough on the demand side for now. Let us instead look back at the Sustainable Cotton Ranking 2017, as this has also been the subject of criticism and from none other than the prestigious Bremen Cotton Exchange. The Exchange stated that: „If cotton is criticised as not sustainable, this poses the question of facts and objective data. We observe that the discussion often takes place on the basis of obsolete or even incorrect information." And furthermore: "The study quotes old numbers in pest management and irrigation, without acknowledging further developments, even in conventional cotton growing.

Overall, the study lacks an economic assessment that includes the market pressures on cotton caused by competing synthetic textiles. As a result, this generally harms the reputation of cotton as a product – a product that serves as a livelihood of millions of farmers and, as a biodegradable fiber, is sustainable to its roots." The apprehensions of the Bremen Cotton Exchange are plain to see: "In the long term the reputation of cotton will be damaged". And this not only has consequences for the textile industry, but also for the estimated 61 million + cotton farmers.

A 74-page report compiled by the Boston Consulting Group and GLOBAL FASHION AGENDA called 'Pulse of the fashion industry' has also caused quite a stir, which deals with the future of the clothing industry and puts ideas for change on paper. This naturally also concerns fibers. So what did it say?

In chapter 2 the „Pulse of the fashion industry" report says "the fashion industry does not perform well on sustainability. Its overall pulse is weak, with a score of just 32 out of 100, and some dimensions are far below that figure." GFA and BCG analyzed, for the first time, the detailed data from the Sustainable Apparel Coalition's Higg Index—the industry's self-assessment tool for environmental and social impacts throughout the supply chain and complemented the Higg Index results with a survey of industry executives (the Pulse Survey), as well as with multiple interviews with experts, to arrive at an overall Pulse Score for the entire global fashion industry.

Data from the Higg Materials Sustainability Index (MSI), a cradle-to-gate material scoring tool by the SAC, shows that the materials with the overall highest environmental impact are leather and natural fibers (silk, cotton, wool). These materials show the highest negative impacts across all dimensions. And even within one type of material there are considerable differences. Water use for cotton depends a great deal on the method of cultivation.

On the other hand the three materials with the lowest impacts are Polyester fabric, Bast fiber fabric and Polypropylene (PP) fabric at the top of the ranking.

In addition the report says that the economics of recycled materials are unappealing at present, as for example recycled polyester is 10% more expensive compared to virgin materials. Even though, as outdoor brand Patagonia estimates, recycling saves 75% of the energy needed and 40% of the CO2 compared to using virgin polyester, companies will make little headway until those umbers change.

In the chapter “Introducing the landscape for change” the report gives some mayor change levers and goals for the long term and also has “quantified a number of initiatives available to individual companies to demonstrate that there is value to be captured today if the industry starts acting now.” One of it is increasing efficiency in all processing steps for cotton and polyester by ~10% to save over 95 M t CO2-eq.

Another one to reduce conventional cotton use by replacing 30% of 2030 cotton with polyester to save 22.6 bn m^3 water.

This is certainly a very strange recommendation and it is worth asking whether all parameters were considered - especially in the context of evolving cotton production processes. It would be interesting to find out whether the voluntary commitments made by brands and retailers also includes an undertaking not to reduce the amount of cotton in their collections in 2020.

The International Wool Textile Organisation (IWTO) levelled harsh criticism at this recommendation. They write: „Among other things, the report [..] calls for the industry to increase its use of polyester by 2030, on claims that it is "recyclable. IWTO took issue with several aspects of the report, most importantly with its use of a chart comparing fibers in which wool ranks poorly for environmental impacts while synthetic fibers and polyester ranks well.

The chart used only cradle to gate data, supplied by the Sustainable Apparel Coalition through one module of its Higg Index. The cradle-to-gate phase is where most of environmental impacts occur for natural fibers. But later phases, where more impacts occur for synthetic fibers, are not reflected in this data. [...] IWTO's position is that this is misleading."

Their thoughts were made even clearer in a direct reply letter to the report. In it they said: „The Pulse Report compounds the ranking problem by turning a blind eye to the fact that polyester staple is a non-renewable, petroleum-based product, and for a report that claims to provide a common fact base on the fashion industry's sustainability performance, takes a surprisingly dismissive attitude to microfiber pollution." And furthermore: "There are strict rules about comparing fiber types, particularly when presented to the public. These rules are governed by the ISO, the International Organization for Standardization. The ISO standard – ISO 14040 to be exact – requires that public comparisons be based on a full life cycle assessment. Without including all impact categories, the picture created is incomplete."

The response moreover points out that polyester is likely to force its way into other markets and quotes PCI fibers, a specialist consultancy, on this issue:"Anyone in the fiber business has to be aware that polyester producers are constantly looking at other fibers and their markets to determine if polyester can take further market share."

This is certainly true, and also tallies with current market thinking. Manufacturers of other fibers and yarns have similar ambitions when the circumstances allow.

Lenzing Group for example in October 2017 launched a new product: TENCEL™ Luxe, a lyocell filament. It is the first time that Lenzing enters the filament market.

Lenzing says “TENCEL™ Luxe branded filaments are the new player for sustainable high-end cellulose textiles by offering superior aesthetics, performance and comfort level that allow them to be the perfect partner with other noble fibers such as silk, cashmere or wool. The smooth surface of the TENCEL™ branded Luxe filament gives fabrics a silky smooth feel and liquid-like drape for the most sensual silhouettes. Moreover, TENCEL™ Luxe branded filaments are naturally breathable due to their wood-based origin and offer outstanding color fastness, enabling designers to express bold color palettes where creativity knows no boundaries.”

As a material, it is true that polyester has many production advantages. The production process is clear and determinate, and is not influenced by external factors such as the weather. Machinery manufacturers, such as the market-leader Oerlikon, can install high-capacity equipment extremely quickly. An increase in demand can thus be met very promptly. What’s more, the price of the required raw material - crude oil - has been consistently low for most of the last 3 years at around 50 USD per barrel. Polyester is not without its downsides, however, even if they are radically different. There has been over-capacity for polyester in the market for several years. Over-capacities have also been a big topic at the Dornbirn Manmade Fibers Congress (MFC) in September in a CEO panel discussion. There interviewer Giuseppe Gherzi asked: “Will there be a production of man-made fibers in 2030 in Europe and please add in your answer any insights what you have regarding Chinese over-capacity? What will happen to it in 2030?”

Heinz Meierkord, CEO Advansa, answered: ”I see strongly a production in Europe for man-made fibers in 2030 and beyond. Otherwise I would’nt have invested six years ago to buy the company. This was also a commitment. The other thing is that innovation and know-how has deep roots in Europe. [..] You always need the right people.”

Stefan Seibel, CEO of FISIPE / SGL Group, looked back in the past: “20 years ago here in Dornbirn it was said that the European textile and fiber industry will be dead. So we must have done something right. And it was also said in the morning that the speciality of today is the commodity of tommorrow. So we are aware of this and therefore we continue to develop specialities and do this very closed to our customers. We are very well equipped. And concerning carbon fiber in China I can say that they have already today intalled the same capacity as the world consumption but we do not see them actually in the market.”

Stefan Braun, CEO Dralon said: “We hear here in the three days all the ideas and see the people working on it. This demonstrates innovation in this industry takes place in Europe and some other core countries and therefore we have a good knowledge place to continue here. Capacities have been closed all over the world. In China, in Asia, in Latin America for individual reasons. Somewhere the capital costs are higher, somewhere the wages are higher, but we see, those who have left, did it because of failures in the past. We don’ t see China is the winner and the rest is the looser.”

Robert van de Kerkhof, CCO Lenzing, mentioned: “The circle economy will be really critical for Europe to survive; to have a fiber production. But it is very complex to do and huge investments are required. We have to find ways to accelerate the circle economy. And we have to find younger people and make sure they are interested in the textile industry.”

Eberhard Brack, Märkische Faser, made it easy and quoted Darwin. He said: “The fittest survive and not the biggest survive.”

Uday Gill, CEO Indorama Ventures answered very precise and detailed to the questions saying: “I have great respect for China and for challenging the world on cost position. This will force us to innovate and get out of our comfort zone. Secondly I am not that much concerned about China’ s over-capacity. I believe that China is changing from an export driven business to an internal consumption driven. I believe in China they are getting rich, and the internal consumption of China will exceed its capacity and China will not have these export power we think. China is going high-tech and when a country goes high-tech -there are examples of Japan, Taiwan or Korea- the importance of textiles vanishes. And if you see data, the issue of textile exports of the total exports of China is falling. This is my view of China now coming to Europe. I believe Europe will transform itself in the next 15 years. It will be very much in textile business but not the same way we are doing today. It will use the new tools and the new products which are sustainable, regenerated or biopolymers which are available. My suggestion is to focus on organization because no one can copy my organization.

Europe will transform in a more automated, more intelligent, more smart business."

That's a pleasing outlook and enough about the existing problems, though, as there are already a number of considerable challenges on the horizon for the textile industry. For one, sustainability must be made measurable and verifiable. It is worth ensuring through test procedures and/or maximum transparency that the products correspond to their label. An initial approach to this challenge was recently proposed by the Hohenstein Group. They have recently introduced reliable detection methods for an essential parameter of organic cotton. Therefore, the cotton used is reliably tested for genetic modifications (GMO-genetically modified organism). The Hohenstein detection system has been specifically optimised for textiles. Testing can be carried out on everything from raw cotton, yarns and fabrics, to ready-made end products.

Conclusion

The air seems to be thinner in the global fiber market, as the new factor - the increasing demand for sustainability - is shaking the industry and all its sectors from top to bottom, which in turn generates new opportunities as well as risks. How these risks and opportunities appear may vary greatly depending on one's point of view, but it should be obvious to everybody involved in the industry that progress cannot be made without sustainability and transparency.

And if we assume that the predictions of increasing demand for textiles, yarns and fibers come true, it is likely that everybody involved will profit from that growth and some of the battles between segments of the market may even disappear into thin air.

Presuming a constant growth rate of 1.5% in fiber consumption in the next few years, additional 13 million tonnes of fibers will be produced by 2025 and around 21 million tonnes by 2030. At 2% growth, that figure jumps to 17 million by 2025 and 30 million by 2030. These are quantities that in some instances exceed the current overall capacities of natural fibers, meaning it is likely that the demand for polyester will likewise increase. The reduced amounts of cotton, wool and silk as a proportion of overall textile production can also have positive aspects. There is no doubt that sustainably produced cotton, for example, will always be valued highly by consumers. For textile manufacturers, the question of what is produced will perhaps become less relevant than how it is produced. Cutting-edge textile machinery and all its advantages (such as energy efficiency and productivity) may also help to reduce costs and increase margins.

Interview with: Mr. Pete Santora

Chief Commercial Officer, Softwear Automation

by Oliver Schmidt

“We have high demand.”

On your webpage you introduce SoftWear Automation as a company which is disrupting the $100 billion sewn products industry by creating autonomous sewn good worklines for Home Goods, Footwear & Apparel. This sounds amazing. Can you please tell us more about your company and the technology you are offering to the market?

Mr. Santora: Softwear Automation is a 10 year old start up that spent 8 years in research and development. This is a company engineered on delivering technology that can produce sewn goods anywhere in the world on par with today's global supply chain. Today, the supply chain is beholden to chasing cheap labor around the world regardless of the environmental impact or experience of the customer. We believe that what retail is facing right now is the outward expression of a "push" supply chain strategy where brands forecast months and months ahead to predict what a customer may want and then pushes it to them on the store floor.

However, the customer is showing signs of wanting a "pull" experience where they curate their wardrobe and receive it in the comfort of their home. This requires a different supply chain strategy and you need the ability to make sewn goods faster and closer to customer to meet the expectations of that experience.

Your company message is "Revolution and Industry 4.0". To bring about true disruption in the textile industry, your company would have to grow at a tremendous rate. What is your strategy for implementing this vision? Do you want to go public or set up a licensing business, or are you planning on selling the company?

Mr. Santora: First and foremost, we want to build a great company. We see ourselves as global company that has built a platform to bring manufacturing to the local market. This means building a company with the right employee mindset, the right diversity of talent and the right future-focused customers.

We have always been selective about all 3 areas. We need to scale to solve the many problems in sewing automation, but not necessarily to grow. Rather I think that select companies will create outsized opportunities for themselves by seizing this technology ahead of their competitors. Inherently, revolution comes with a significant number of losers and I think the laggards will see the pain in their market share as brands bring local supply chains to the market ahead of their competition.

How do you rate your know-how advantage for your fully automated Sewbots? And to what extent are your systems protected by patents? Aren't you worried that you could soon be overtaken by copycat manufacturers with better market access?

Mr. Santora: Yes we have many patents to our systems. Additionally, we know that countries around the world are getting better at protecting patents and providing the systems and procedures for working through those disputes. That said, we are taking copycats seriously and we are diligent in our physical system protection as well as our legal action.

For what textile products are you already able to offer fully automated worklines, and how many fully automated systems will you be able to deliver by the end of 2018, for example?

Mr. Santora: Today we offer fully automated worklines in home goods and other flat operations including pillows, bath mats, towels, bed sheets, tote bags & automotive mats. By the end of 2018, our only public Workline will be T-Shirts.

A lot of the equipment seen on the photos of SoftWear Automation appear to be in a lab setting. Many readers have asked us if you can deliver the Sewbots in industrially necessary quantities? Can you give us the name of a reference client and explain how it has integrated the Sewbots in its production operations and what textiles it manufactures with them?

Mr. Santora: Unfortunately, we have strict NDA's in place with our customers however all of our Sewbots are manufactured for 24/7 operation and currently run 3 shifts a day in high particulate, high heat and high humidity.

To date, our uptime is better than 90% with an error rate of less than 1%.

In May, you launched your company and the Sewbots on the European market at the Texprocess 2017 in Frankfurt. What response did your invention receive from visitors to your stand, and were you able to make any promising contacts?

Mr. Santora: Texprocess Frankfurt was a fantastic show for us. We generated a significant number of leads and we consider Texprocess to be an invaluable tactic in our marketing strategy.

In July you announced a big sales success for apparel. Tianyuan Garments Company of Suzhou signed an agreement with SoftWear Automation to develop a fully automated T-shirt production line at Tianyuan's newly acquired plant in Little Rock, Arkansas. They will install 21 production lines and when fully operational, the system will make one T-shirt every 22 seconds. They will produce 800,000 T-shirts a day for Adidas. Tang Xinhong, chairman of Tianyuan Garments, said that with complete automation, the personnel cost for each T-shirt is roughly 33 cents and around the world, even the cheapest labor market can't compete with them. A statement of this kind is bound to make textile manufacturers all over the world sit up and take notice. We would go as far as to say that this venture is a major milestone for SoftWear Automation.

Fully automated production systems not only offer the advantages of close proximity to the POS and high manufacturing quality, but also extremely low manufacturing costs compared with other methods. Does that mean that demand for your systems is a foregone conclusion?

Mr. Santora: We have high demand.

You yourself have just been promoted from the position of Vice President Global Sales and Marketing to Chief Commercial Officer, and you have been with SoftWear Automation since November 2015. Prior to that, you worked for some time in the sports media sector, and latterly you were also involved in the Georgia Tech startup incubator. Is that the link with SoftWear Automation, and what appeals to you in particular about working for this company and the textile industry?

Mr. Santora: I ran a software company for 10 years and sold it to Dick's Sporting Goods. After that I went to work with the high tech startups at Georgia Tech to help CEO's commercialize their technology. Softwear Automation was one of those companies. Their appeal to me was the lack of alternatives in the market place for sewing automation and the size of the impact we could have on the space if we were successful. Even with the limited number of technologies that we have released, we have seen outsized success.

Techtextil trade show outdoes itself

When the Messe Frankfurt fairground on 12th May closed its doors a record number of over 33,670 visitors from 104 countries (2015: 28,491 visitors from 102 countries) made their way to Techtextil 2017. A new record was also set on the exhibitor side with 1,477 companies from 55 countries taking part in the two fairs (2015: 1,393 from 52 countries).

When the Messe Frankfurt fairground on 12th May closed its doors a record number of over 33,670 visitors from 104 countries (2015: 28,491 visitors from 102 countries) made their way to Techtextil 2017. A new record was also set on the exhibitor side with 1,477 companies from 55 countries taking part in the two fairs (2015: 1,393 from 52 countries).

“At Techtextil and Texprocess, the technical-textile industry gave an impressive demonstration of its great innovativeness and preparedness to meet tomorrow’s challenges. This is where car makers meet fashion designers and medical engineers meet industrial specialists. Techtextil is unrivalled thanks to the broad spectrum of textile materials and technologies to be seen. Around 60 percent of trade visitors are managers; 57 percent play a decisive role in their company’s decisions when it comes to purchasing new materials”, said Detlef Braun, Member of the Executive Board of Messe Frankfurt.

There’s not a lot else to say. In our opinion, what makes Techtextil so special – in general and also with regard to the most recent show – is both the extremely wide range of innovations and the great atmosphere. Despite being one of the world’s oldest trade sectors, the atmosphere is occasionally reminiscent of the euphoria surrounding new Start-Up companies, and virtually every participant feels this effect. As a representative of exhibitors, Mr. Peter D. Dornier got to the heart of the issue at an awards ceremony for the Walter-Reiners-Stiftung (Walter Reiners Foundation) held at the VDMA booth.

He emphasized that Techtextil has always been a very successful show for his company, which has allowed for many interesting meetings with customers. He went on to say that Techtextil 2017 succeeded yet again in significantly surpassing everything that had been seen previously with regard to the number and quality of the discussions, and the innovations that were shown as well as announced.

Our tone may sound euphoric, but it was the same at the trade show as well. Perhaps this enthusiasm can be re-attained if we again remind ourselves that the solutions offered by both technical textiles as well as by the nonwovens industry are in many cases groundbreaking in their innovation and offer an entirely new approach to materials, which can be introduced into the product range of many likewise future-oriented and innovative sectors that are searching for these solutions and want to use them in a profitable manner.

Representatives from all tiers of the supply chain and from different industry sectors were on site - from crafts businesses to industrial companies; from product designers to mechanical engineers. As such, the trade fair provided the exhibitors with an ideal presentation platform. Product novelties, processing technology, mechanical engineering, raw materials - various topics presented themselves. To visitors in search of innovative materials the variety of products and the range of applications and possibilities for customization were a source of inspiration. Customers and new contacts approached the boothes with specific problems, finding solutions through lively talks with the experts.

Opening ceremony with Dirk Wiese: Parliamentary State Secretary, Federal Ministry for Economic Affairs and Energy © Messe Frankfurt

Dirk Wiese on a VIP tour on the Groz-Beckert booth © Messe Frankfurt

Meeting with the Chinese delegation © Messe Frankfurt

If we are to use a very old trade show idea, here is a case in which a highly innovative supply meets an extremely interested demand, supported and accompanied by the excellent organisation provided by the team at Messe Frankfurt.

We want to try and get across to you some of the optimism of the technical textiles and nonwovens industries by presenting you with a multitude of innovations. But first, let's stick to tradition and take a brief look at some of the facts.

High degree of internationality and positive mood in the sector

Around 20,800 Techtextil visitors (62 percent, 2015: 61 percent) came from outside Germany. The five leading visitor nations at Techtextil after Germany were Italy, France, Turkey, United Kingdom and Belgium. A very good mood among trade visitors was revealed by the visitor poll on the economic outlook. At Techtextil, 40 percent of visitors (2015: 32 percent) said they considered the current economic situation to be good. The figure for German visitors alone was 55 percent.

With 423 exhibitors from Germany and 1,054 from abroad, the level of internationality on the exhibitor side reached 71 percent with Lebanon, Mexico and Vietnam being represented for the first time.

14 countries were represented by national pavilions – Belgium, China, France, the United Kingdom, Italy, Canada, Croatia, Portugal, South Korea, Switzerland, Taiwan, the Czech Republic, Turkey and the USA. There was a significant increase in the number of European exhibitors, especially from Spain, Poland, Italy, the Netherlands and Turkey, as well as from China and India. The mood among exhibitors was also good with 43 percent (2015: 35 percent) of all Techtextil exhibitors rating the sector's economic climate as being 'good'. Among the German exhibitors, the figure was even higher: 65 percent (2015: 54 percent).

The largest exhibitor groups comprised companies with products for applications in the industry (762), the automobile and aerospace industries (673), architecture and construction (559) and occupational safety (488). The highest rates of growth were recorded by the industry (+73), sport (+57), mobility (+55) and apparel (+49) segments.

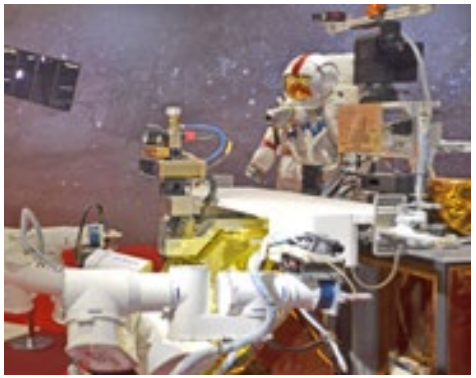
Special ‘Living in Space’ exhibition a hit with visitors and exhibitors

Opened by ESA astronaut Dr Reinhold Ewald, the ‘Living in Space’ special exhibition attracted numerous visitors to Hall 6.1 and, therefore, numerous exhibitors for functional garment textiles.

Organised in cooperation with the European Space Agency (ESA) and the German Aerospace Centre (Deutsches Zentrum für Luft- und Raumfahrt – DLR), the exhibition presented textiles and processing technologies in an application-oriented setting.

In a ‘Material Gallery’, Techtextil and Texprocess exhibitors presented materials for use in space travel. The materials to be seen included functional apparel textiles that not only regulate the wearer’s body temperature but also have anti-bacterial and anti-static qualities, as well as flame-resistant textiles, carbon-fibre components for booster rockets, textile transport bags and belts, and sensory yarns that measure and report loads acting on the textile material.

A vision of what building in space could look like in the future was to be seen in the ‘Architecture’ section curated by the Stylepark architecture platform. Architect Ben van Berkel of the international UNStudio firm of architects created a ‘Space Habitat’ especially for Techtextil. The construction work was carried out by lightweight building and large-scale umbrella specialists, MDT-tex. Comprising 60 individual modules, each of which was double twisted and under tension, the lightweight pavilion had an area of 40 square metres and consisted of specially designed aluminium profiles covered with PTFE sheets. MDT-tex designed the fabric especially for the pavilion in an extremely light grammage without sacrificing its high-temperature resistance and technical properties.

The ‘Living in Space’ area presented different ideas in the sector ‘fashion for space’ © Messe Frankfurt

In the ‘Clothing’ section, the focus was on functional fashions for space and inspired by space. The ESMOD Fashion School from Berlin presented outfits made by students within the framework of the ‘Couture in Orbit’ project (2015/2016) organised by ESA and the London Science Museum. They included, for example, smart fashion, which transmits the wearer’s vital parameters to a smartphone, a coat for collecting mineral samples and models dealing with the subject of resource scarcity on the earth. Via a video link, the POLI.design centre of the ‘Politecnico di Milano’ university showed outfits from the follow-up project, ‘Fashion in Orbit’ under the scientific supervision of Annalisa Dominoni and the technical supervision of Benedetto Quaquaro in cooperation with ESA and garment manufacturer Colmar.

The Hohenstein Textile Institutes presented two models from the Spacetex research project, within the framework of which astronaut Alexander Gerst tested the interaction of body, apparel and climate under conditions of weightlessness during the ‘Blue Dot’ mission in 2014. In this connection, the model, ‘Nostalgia’ by Linda Pfanzler (Lower Rhine University) reminds the wearer of the earth with an integrated library of fragrances. The suits of the ‘Dynamic Space’ collection by Rachel Kowalski (Pforzheim University) contain electrodes that stimulate important muscle groups to prevent muscle atrophy under conditions of weightlessness.

The outfits shown by Leyla Yalcin and Sena Isikal (AMD Düsseldorf) came from the ‘Lift off’ collection created in cooperation with Bremen-based silver-yarn manufacturer Statex.

They include a sleeping bag for astronauts made from silver-coated textiles, which can also be used as an overall and protects the wearer from electro-magnetic radiation. Thanks to the silver threads, another garment, a raincoat reflects light and stores the wearer’s body heat.

Wearing virtual-reality glasses, visitors could also embark on a journey through space to Mars. During the video flight, viewers were shown examples of applications for technical textiles in space travel, e.g., spacer fabrics for plant growing, functional textiles for astronaut apparel, nature-oriented lightweight structures for architecture in space and textile manufacturing technologies for space-travel antennas.

Innovative Apparel Show: the stage for high-tech fashion

The second edition of the Innovative Apparel Show provided a stage on which fashion academies from France, Italy, Portugal and Germany could present creations made of technical textiles using innovative processing technologies. In the two daily live shows, visitors were shown visionary fashion designs for ‘textile effects’, ‘creative engineering’ and ‘smart fashion’. This year, the fashion academies taking part were the Esmod from Paris, the ESAD College of Art and Design from Portugal, the Accademia Italiana, Florence, and Trier University.

Julia Gross-Müller of Trier University won first prize of the Innovative Apparel Public Award. Entitled 'World Folklore', her model, which combines traditional and innovative processing technologies, was the favourite among visitors. Second place went to Mariana Almeida of ESAD College of Art and Design in Portugal for 'Momentum', a smart fashion combination that shows the wearer's mood. Third place was taken by Eleonara Beni of Accademia Italiana in Florence with an urban-style, multi-functional combination.

The award-winning projects were chosen by the visitors of the two leading international trade fairs who, during the first three days, had the chance to vote for the models they liked the best using an app or at the catwalk. The winners were presented with cash prizes totalling € 3,000.-

Buildtech and Hometech: textiles in architecture and construction

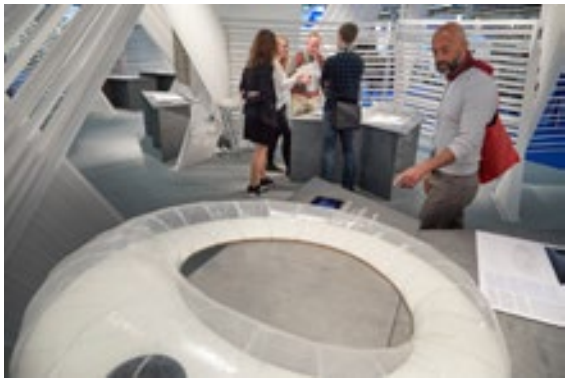
From textile-reinforced concrete, via woven fabrics for lightweight constructions, to functionalised textiles: at Techtextil, architects, property developers, engineers and planners were confronted by a wide range of fibre-based materials shown by around 560 exhibitors in the Buildtech area of application.

One of these exhibitors was Verseidag from Krefeld, the supplier of the glass-fibre fabric for the outer shell of the Thyssen Krupp lift test tower in Rottweil – the world's highest membrane product. The Institute for Textile Machines and Textile High Performance Materials (ITM) of Dresden Technical University presented carbon-reinforced concrete with integrated sensors for monitoring the technical condition of structures.

The 'Innovative Apparel Show' again was a big success and presented amazing fashion © Messe Frankfurt

Congratulations to Show Producer Kevin Oakes © Messe Frankfurt

The Innovative Apparel Award winners © Messe Frankfurt



Students and young professionals presented their ideas for building with textiles © Messe Frankfurt

Centexbel intelligent knee bandage © Messe Frankfurt

Teijin presented a tank crew suit made from Teijinconex neo © TexData International

Another exhibitor, solidian from the South German town of Albstadt, also presented glass and carbon reinforcement that, inter alia, is to be found in the Yavuz Sultan Selim bridge near Istanbul.

The award-winning designs of the 'Textile Structures for New Building' student competition offered insights into the work of tomorrow's architects and designers. A get-together with renowned architect Ben van Berkel, the designer of the 'Space Habitat' at the 'Living in Space' special exhibition, offered an additional opportunity to exchange ideas and opinions.

Medtech: focusing on health

In the Medtech area of application, around 420 exhibitors presented textile solutions for the field of medical technology, from anti-bacterial wound dressings, via fibre-based implants, to sensor textiles for monitoring vital functions. One of the award-winning projects of the Techtextil Innovation Award came from the Medtech field. The **Centexbel** non-profit Organisation (Belgium) has developed an intelligent knee bandage that helps patients recovering from knee operations.

A textile sensor identifies the angle of the patient's knee and transmits this information together with personalised exercises immediately to the patient via an app.

Mobiltech: fibres for mobility

"Fibre-based materials play a role in the automobile industry especially when it comes to reducing weight", said Hans-Bernd Lüchtefeld, the member of staff responsible for communication at PHP Fibers. According to the Association of the Finishing, Yarns, Woven Fabrics and Technical Textiles Industry (IVGT), there are, statistically speaking, over 40 fibre-based elements in every modern car. They include seat covers, headliners and seat belts, as well as filters, hoses, airbags, instrument panels and components made of fibre-reinforced plastic. **PHP Fibers**, which recently opened a weaving and finishing plant for airbag fabrics near Aschaffenburg, presented a new kind of material study in the form of a bicycle with an integrated composite frame made of polyamide and glass fibre, as well as special tyres from Continental and a drive-belt instead of a chain.

Demonstration of biodegradability by Hohenstein Institutes © TexData International

A total of around 670 exhibitors showed products for cars and trucks, as well as emergency and security vehicles, and aerospace applications. They included the South German textile supplier, **Rökona**, which specialises in the production of knitted fabrics, dyes and finishing for OEMs and automobile suppliers. The company presented a new shade solution for panorama roofs in cars. Also from the south of Germany, yarn manufacturer **Zimmermann** showed a carbon yarn at the 'Living in Space' exhibition, which was used by Augsburg-based MT Aerospace to make fairings for the solid-fuel booster rocket of the Ariane 6.

Clothtech and Sporttech: Materials and machines for tomorrow's fashions

"Fabrics, machinery and coatings - Techtextil is a mecca for materials and a great source of inspiration", said designer and dressmaker Sena Isikal. Together with Leyla Yalcin, she created fashions inspired by space travel, which were to be seen at the 'Living in Space' exhibition.

Altogether, around 880 Techtextil exhibitors offered new materials, coatings, (supplementary) functions and machines for the Clothtech and Sporttech sections and thus gave designers, garment manufacturers and developers a broad thematic choice and the opportunity for an interdisciplinary exchange of ideas and opinions in the fields of fashion, workwear, protective clothing, sportswear and leisure wear. Particular attention was paid to the subjects of smart textiles and sustainability.

Ski fashions with integrated LEDs by Forster Rohner © Messe Frankfurt

Klopman presented workwear © TexData International

This was also confirmed by Techtextil exhibitor **Statex** from Bremen, a company specialising in the silver coating of fibres, yarns and textile fabrics, especially for technical applications. “Today, our visitors also include designers and garment manufacturers with ‘smart apparel ideas’ relating to textile conductivity, data transfer and visualisation”, says Britta Moritzer, a member of the company’s international sales staff.

Another magnet for visitors was the exhibition stand of Switzerland’s **Forster Rohner** Textile Innovations. The company specialises on the integration of active lighting in textiles at the same time as retaining the textile product’s washing and draping qualities. Among the products to be seen were a white ski jacket with integrated LEDs and a heated leisure jacket, both of which had been made for Bogner.

Sustainability in the apparel sector was also an important subject at the fair. Thus, **Freudenberg Performance Materials** showed a nonwoven substitute for down filling in sport and outdoor jackets. Scientists from the **Hohenstein Institutes** in Bönnigheim presented the results of their research into the biodegradability of textile products.

Rudolf Group introduced the new ®RUCO-DRY ECO PLUS and said a significant step has been taken towards improving the good, water-repellent properties of the BIONIC-FINISH® ECO brand. The very well-reputed hydrophobic finishing with BIONIC-FINISH® ECO is based on a fluorine-free recipe.

Hyperbranched, hydrophobic polymers with ramified structures like in tree tops orientate in an orderly manner on the textile and crystallise on specifically adusted comb polymers. Thanks to the Bionic finish, products are highly water and dirt repellent and even more durable. Now RUCO-DRY ECO PLUS offers an advantageous range of performance with plus factors in efficiency, permanence and sustainability. ®RUCO-DRY ECO PLUS stands for a high level of effectiveness with lower quantities used and also high wash resistance, even without a booster. Furthermore there are even more environmentally friendly components used.

Schoeller Textil showed a selection of functional clothing made from their latest developments in fabrics. First was a battle dress uniform using camoshield. Camoshield technology has been developed for special units and stands for a suppressed thermal signature – integrated into the specific local camouflage print. Second was a corkshell worker jacket. Corkshell is made of an FSC-certified cork granulate that is a by-product in the manufacturing of wine corks. This natural granulate is pulverized and firmly anchored as a coating in a special process patented by Schoeller. With corkshell, it is now possible to combine the outstanding natural features of cork with those of high-performance fabrics. corkshell™ offers much higher thermal insulation than functional fabrics while providing both high breathability and wearer comfort. And third were flame retardent police pants and jacket based on Pyroshell. With this technology, Schoeller succeeds in combining permanent flame protection with polyamide and polyester fabrics.

Therefore, safety personnel, railway workers, police officers and electricians, for example, are not only ideally protected in the case of possible contact with fire and sparks, but can also enjoy the familiar wearing-comfort of wear of synthetic functional fabrics.

Furthermore the Swiss company specialized in the sustainable development and production of innovative textiles and textile technologies, introduced a reflective denim fabric which is for particular interesting for all kind of kid' s clothing. Schoeller®-reflex can be applied to a wide range of different Schoeller fabrics as an optional extra. The technology offers visibility at more than 300 feet in the dark or at twilight. Further functions can be combined with various additional finishes, special yarns or color effects, optimizing the fabric for the specific area of use, such as the EN ISO 20471 high-visibility color yellow, flame retarding, waterproofing or an antibacterial finish.With schoeller®-reflex, elastic and non-elastic, coated and bonded reflective fabric versions are possible. Special airy net structures can also be implemented. Possible fabric components are Cordura®, 3M-Scotchlite™, polyamide or polyester. **Hans U. Kohn**, COO Schöller Technologies, was comfortable with the number of visitors and told us he had many good customer discussions und there is a high interest in the new developments of Schoeller.

Under brand logo T I P (Textile Innovations Products) **Kufner** launched various smart, textile based products for a variety of solutions and applications. An innovative transport security system, which was developed with cooperation partner go11save, is the first product in that line, showcased for the first time at Techtextil. This is a cut resistant fabric fitted with sensors and a GPS (Global Positioning System) tracking function. Moreover Kufner presented a heatable jacket. Due to a low energy consumption and a consistent heat distribution the THS – textile heating systems – technology is a very interesting solution for various applications. The THS (textile heating systems) technology developed by Kufner has been used in apparel applications, such as workwear and functional or active sports clothing for outdoor activities.

Flame retardant police jacket made with Schoeller pyros-hell © TexData International

Schoeller corkshell worker jacket © TexData International

Schoeller reflected denim jeans © TexData International

An interesting application of the heating textiles are heated church pews as well as heated artificial turf in extensive sports stadiums, since the heating textiles are produced on rolls. Core elements of the technology's USP are the rapid heating capacity up to 60 degrees and the wide range of possible carrier materials and multiple ways to apply THS, from sewn)in, molded, foam laminated, stitched, quilted to laminated or glued. THS has a 30 – 40 per cent lower energy consumption, the conductive textile is extremely light and has a pleasant touch.

Another highlight was the oversized wallet by leather goods brand Esquire. Equipped with CARDSAFE and XShield®, Kufner's RFID protection system, it is considered as "probably the most secure wallet in the world".

SCILIF introduced their SCILIF SunFibre technology which emits intense light generated by super-luminous and highly effective LEDs. The pipping is ready to be sewn into fabric. The light coming from the piping is evenly diffused across the entire length of the piping. This ensures the best visibility possible for those wearing clothing or accessories equipped with the SCILIF technology. Miniature LED sources are tightly connected to the SCILIF SunFibre and incorporated into textile garments in a way that is concealed from view. When used according to the producer's recommendations, SunFibre visibility under suitable conditions (darkness and clear air) exceeds 2 km. Luminous flux of SunFibre ranges between 50 - 500 lumens. SunFibre functions are designed to achieve maximum visibility in continuous mode and maximum warning effect in blinking mode. The SCILIF SunFibre light guide with LED source is highly resistant to rain, snow and wind. It's very flexible in all conditions and

Dr. Karl-Heinz Maute, Kufner Head of Global Research presented the heatable jacket © TexData International

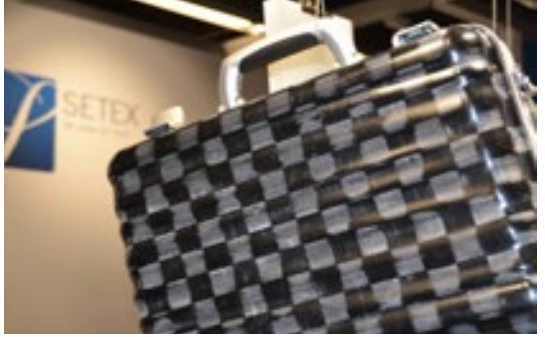
Claus Lewald from Kufner partner go11save presented a criftex bag © TexData International

Scilif presentation of sunfibre © TexData International

its textile piping ensures technical strength while providing great optics and pleasant touch. SunFibre light guides appear as an integral design feature of clothing and accessories, which is appreciated by both users and clothing designers.The energy source for the control unit (MPU) is a Li-Ion battery, rechargeable up to 1,000 cycles.

Composites

Among the exhibitors at the forefront, **PHP Fibers** presented besides its broad and innovative portfolio including yarns based on bio-polymer, the new **Enka® TecTape Hybrid Roving**. The fair showed that the development of new reinforcement fabrics for composites is actually an important driver for the technical textiles industry, it was said. The new composite made of nylon and glass is one proof for this statement; the new material could replace steel or even carbon fiber in various applications that require both strength and lightness at a fraction of the cost of other materials. Accordingly, with an eye on light weighting modern vehicles, the model of our Hy:Ro Bike -based on Enka® TecTape material- attracted a lot of visitors and obtained extensive, far-reaching attention from press and professional visitors. “Techtextil is the platform of choice to present our ideas and innovations, but also to keep informed about latest trends in technical textiles and technologies. I also appreciate to deepen our network and cooperation with existing partners and meet new players from industry or the research side”, stated Volker Siejak, Business Director from PHP Fibers.



Setex highlight was the new thermoplastic material TAPETEX © TexData International

The Hy:Ro Bike -based on Enka® TecTape material- attracted a lot of visitors © TexData International

Setex presented samples made from new materials © TexData International

Setex Textil presented **UDTAPETEX**. This is a new kind of thermoplastic material consisting of glass (in part) and a polypropylene matrix. Setex-UDTAPETEX is a woven fabric with an already full consolidated UD tape (meaning that all glass filaments are already impregnated with a PP resin). Setex says this unique fabric belongs to the future of lightweight construction because the advantages are obvious. UDTAPETEX combines high strength with a low weight, is easy to process with short processing cycles and is thermally recyclable. There is no impairment of the air quality as well as no delamination band or splitting as a result of intersections. UDTAPETEX is just as strong as steel and 20-40% lighter. UDTAPETEX is gaining popularity compared to traditional fibre/matrix forms because UD-tapes are well impregnated and well spread and therefore 100 % straight.

Nonwovens

All in all, **Sandler** is once again looking back on a very successful trade fair participation, during which latest nonwoven innovations quite literally set the tone at the Sandler booth. The family-run company welcomed an international audience to the home of innovative nonwoven solutions and showcased latest developments for room acoustics, transportation and filtration.

Acoustic partitions made of self-supporting nonwovens provided spatial as well as acoustic separation for a conference corner at the booth, and - among the products on display - they were also the main magnet for visitors. Available in different thicknesses, densities and degrees of solidification these textile sound absorbers help render every room quiet and comfortable. Various opportunities of surface finishing also make these all-rounders visual highlights: Printed with various motifs, laminated with coloured fabrics, flocked to create a roughcast look, or enhanced with a coating made of natural materials such as hay or cornflowers. The possibilities are manifold and drew the visitors' attention.

A playhouse demonstrated the wide range of applications for Sandler nonwovens in building acoustics - from impact sound insulation to insulation between the rafters, from insulation for hot water tanks to pipe insulation in solar systems, and from sofa upholstery to filters in air-conditioning systems.

In addition, the recyclability of the materials showcased and therefore their contribution to sustainable product solutions again was another point of interest for the professional audience.

With regard to synthetic filter media, materials for enhancing indoor air quality in heating, ventilation, and air-conditioning were in high demand. The latest Sandler product line enAIRsave® combines excellent filtration performance with good energy efficiency, attaining a favourable rating according to the requirements of new testing standards.

Sandler nonwovens for the transportation industry create a pleasant atmosphere en route - textile absorbers, that insulate engine and driving noise as well as heat. The new product lines sawasorb® advanced und sawasorb® premium were the main topics. Offering excellent sound absorption at low product thickness, sawasorb® advanced is an ideal alternative for narrow installation spaces. sawasorb® premium encompasses the high-performance range of absorbers in Sandler's product spectrum. Product variants for interior as well as exterior applications are available. Sandler absorber nonwovens are a lightweight alternative, supporting the still highly topical subject of lightweight designs in vehicles.

Freudenberg Performance Materials presented innovative solutions for e-mobility and stationary energy storage: ultra-thin, ceramic impregnated separators for lithium-ion batteries, gas diffusion layers for fuel cells, and high-performance electrodes for redox flow batteries.

Furthermore the compaany showcased the world's first fiberball padding for the thermal insulation of sportswear and outdoor jackets, Evolon® super-microfilament textiles for pillows, duvets, sleeping bags and other quilted products, eco-friendly carrier materials for carpet tiles and printable automotive headliners.

Sandler booth © TexData International

Freudenberg PM booth © TexData International

Textile Machinery: essential for textile innovations

Highlight at the **VDMA** booth was an award ceremony. The **Walter Reiners-Stiftung (Foundation)** of the VDMA Textile Machinery honoured five junior engineers at the trade fair. Two promotion prizes for the best dissertation and master thesis as well as three creativity awards for clever bachelor and seminar papers were awarded. **Peter D. Dornier**, chairman of the Foundation and chairman of the **Lindauer DORNIER** Board of Management, honoured the young engineers.

The promotion prize in the dissertation category, endowed with 5,000 euros, was awarded to **Dr. Cornelia Sennewald, TU Dresden**. In her doctoral thesis, she developed new technology concepts for production of 3D structures in lightweight design based on a weaving process. **Dirk Fischer, TU Chemnitz**, was honoured with a promotion prize worth 3,500 euros for the best master thesis. In his work, a classic component, namely a bicycle spoke, was replaced with a flexible wire to achieve benefits in weight and dynamics.

Philipp Kempert (TU Dresden), Karsten Neuwerk und Lukas Völkel (both from RWTH Aachen) received creativity awards including a scholarship of 250 euros a month for two semesters. Mr Kempert developed a shuttle changer for a shuttle loom. Mr Neuwerk's work deals with light transmitting filaments.

Mr Völkel's bachelor thesis focuses on fabrication of woven-fabrics of multifilament yarns for use as electrode materials in supercapacitors.

Award ceremony of the Walter Reiners-Stiftung (Foundation) © TexData International

On a special press conference the French Textile Machinery Manufacturers Association **(UCMTF)** featured their members **Dollfus & Muller, Laroche, N. Schlumberger and Superba**. The companies presented some projects they developed together with customers. The work started with identifying technology needs by the customers and then the machinery manufacturers designed and produced corresponding innovative solutions.

Mrs. Evelyne Cholet, UCMTF secretary general, underlined that the French textile machine maufacturers are proud of their strategy to offer individual solutions following the needs of the textile industry with a strong focus on R&D, to offer reliable, cost effective and sustainable machines. Moreover **Pascal Denizart**, General Manager of **CETI** (European Centre of Innovative Textiles), gave a keynote speech about disruptive textile innovation and applied research center. He said that CETI is "a shared innovation platform, which offers an exceptional combination of textile skills, tools and high-tech equipment and enables companies to take full advantage of the unlimited potential of textile equipment and technologies for new fibres and non-woven fabrics. It is a place to design, prototype, experiment, new products/materials for fashion & textile industry."

UCMTF Press Meeting © Messe Frankfurt

Oerlikon Man Made Fibers presented themselves as the reliable partner for producing technical textiles. At the booth they showed some applications from the apparel sector as well as samples of yarns and artifical turf solutions made on their leading production lines for spinning of man-made fibers. Among their wide range of solutions the company highlighted the BBF Vario Fil R/R+, a POY spinning line which uses recycled bottle flakes as feedstock for dope-dyed textile POY. Vice President **André Wissenberg** was very comfortable with the show, esspecially with the second day, which was very busy for Oerlikon. He let us know that Oerlikon Man Made Fibers increased its orders and sales significantly, which can be attributed to the recovery of the filament equipment market and was supported by a healthy demand for staple fibers. Furthermore he reported a positive trend for texturing technologies (DTY) for installed-based partially oriented yarn (POY) systems and for bulked continuous filaments systems (BCF – carpet yarn), particularly in the US.

Oerlikon booth © TexData International

SSM exhibited on the joint booth of the SSM representative Elmatex and met many existing, and also potential new customers that showed interest in their products. In Frankfurt, the visitors were impressed by the shown DURO-TW-TD. The DURO platform, for all kind of technical yarns up to 50'000 dtex, offers a new level of flexibility and winding quality in one machine; thereby ensuring the fulfilment of all customer requirements. Another highlight was the application for spreading, splitting and winding of Carbon as well as the possibility to optimize the yarn dyeing production with the SSM DIGICONE® 2 winding algorithm, which saves time, resources and money.

SSM booth © TexData International

Saurer Allma informed about the latest developments in twisting technology for industrial yarns. Highlight on the booth was the two-for-one twisting machine TechnoCorder TC2 which is characterised in particular by its unique flexibility in production, material and yarn counts of industrial yarns. Self-sufficient spindle drives allow for such production flexibility that individual items can be processed on each separate spindle. With the innovative FlexiPly software you can economically produce the hybrid yarn constructions expected by the market on the TechnoCorder TC2. Through the use of different materials such as polyamide and aramid and different twists, yarns with new characteristics are created for technical textiles, tires and mechanical rubber goods (MRG). On the TechnoCorder TC2 for industrial yarns up to 9-ply yarn constructions can now be processed.

Saurer booth © TexData International

Graf + Cie informed about their huge portfolio of products and services as a global leading supplier of metallic card clothings, flat clothings, combs and related products. A special emphasis was given to Hipro metallic card clothings. They can be used on high-performance roller card systems as well as on conventional machines and are suitable for all standard man-made fibers in the nonwoven sector and also for wool.

Graf booth © TexData International

USTER presented the latest USTER® TESTER for filament yarn as well as the production optimization and quality assurance benefits to show visitors. The USTER® TESTER 6-C800 provides fast, accurate testing to the tightest tolerances, protecting filament producers against customer complaints and claims. It is specially designed for filament yarn testing, to meet criteria like reliability, accuracy and speed perfectly.

Andreas Maag (left), Area Sales Manager (Europe & Africa) and Simon Rohner, Service Technican from Uster Technologies reported excellent business discussions

Lindauer DORNIER presented the latest and market-leading machine concepts for the production of particularly sophisticated technical textiles. Under the DORNIER motto „The Green Machine“, the family company, that manufactures the machines exclusively in Germany, presented, as focal point, comprehensive solutions for „green technologies“.

This not only means the known green color of DORNIER weaving machines but also the „sustainable effect“ of fabrics produced on theses machines. These fabrics are of decisive importance for „green technologies“ in many branches: Whether finest filters for purifying water or air, airbags and antiballistic structures to protect against death or injuries, composites made of glass or carbon fibers to reduce moved masses and the CO2 emission. Furthermore, geotextiles for slope reinforcements, dam building or renaturation are in daily use in harmony with nature. In all these sectors, the „Green Machines“ from DORNIER have long been indispensable for manufacturing customized precision fabrics.

The range of applications will widen even further with the current weaving machine portfolio – which includes many new developments for the rapier and air-jet weaving machines, and new products from DORNIER Composite Systems®. Just as the market for technical textiles grows and continuously generates new improved products, DORNIER also develops consequently innovative machine concepts so that these can be manufactured flexibly and with high productivity.

In the center of interrest of course was the new rapier weaving machines P2. The P2 is the latest generation of the DORNIER rapier weaving machine with positive central transfer and represents a new machine concept. The P2, type TGS, with a reed impact force of 5 tons that was presented at the ITMA 2015 in Milan and the P2, type TGV, with a reed impact force of 3.7 tons that was presented for the first time at the ITMA Asia 2016 in Shanghai. Both P2 weaving machines unite the reliability of the previous model P1 with technical innovations and a future-oriented modular machine concept.

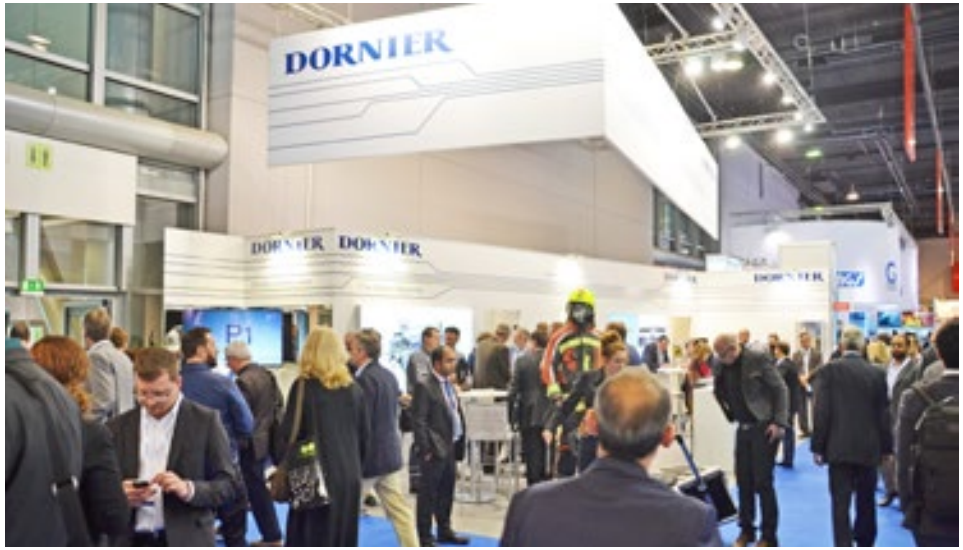
The P2, type TGS, already successfully demonstrated its flexible application options during its debut at the ITMA 2015 with the production of a high density filter fabric in super heavy design with a width of 320 cm with two warp beams. Producing such a filter fabric was only possible with very expensive special machines up until now. The P2 , type TGV, has the equivalent technical concept of the P2, type TGS, but however with a slightly lower reed impact force of 3.7 tons.

Both rapier weaving machines of the new type P2 will open up a multitude of options and markets for weavers. As real „Green Machines“, they will especially show their special strengths and sturdiness above all where the demands exist for ever more efficient, heavier and denser fabrics with highest regularity for corresponding products. For example, they provide the option to produce the highest quality in the growing market for filter fabrics, e.g. for wet, liquid and solid material filtration or for soot particle separation, and much more.

In addition to the weaving shop, visitors also had the opportunity to get to know or broaden their knowledge about the performance profile of DORNIER Composite Systems®. This new product group created in 2014 bundles DORNIER‘s know-how on manufacturing composites from fibers and foils where the combination allows even more efficient solutions and new material classes. DORNIER‘s stretching machinery provides solutions for manufacturing polyester and polypropylene films as well as stretching polyamide, polystyrene, PMMA, cross-linked polyethylene, PEN and other thermoplastic materials. The company is world market leader for machines and plants for the production of biaxial oriented polyester films (BOPET).

Section manager Wolfgang Schöffl said: „The Techtextil is the most important meeting place in the branch and we are always especially pleased to take part. We meet many customers and friends of our company here - from Germany as well as world-wide and we can discuss further developments in technical textiles at the highest level.

As world market and technology leader for weaving machines for producing technical textiles, and as a German family company, we regard it as our responsibility to satisfy the wishes and demands of our customers on quality, flexibility and productivity through innovative machine concepts with passion and imagination.” And General Manager Peter D. Dornier was overwhelmed by the number of visitors. He said during the award ceremony of the Walter Reiners Foundation on the VDMA booth:”For us Techtextil is always a very important event where we meet our customers and friends of our company. For many years now, we are used to have a large number of visitors on our booth and to have excellent discussions with them. But this year surpasses all this.”



Lindauer DORNIER booth © TexData International

Stäubli booth © TexData International

Stäubli showed a selection of technical fabrics including spacers and multilayers with variable thickness that have been produced in conjunction with Stäubli products such as TF weaving systems, dobbies, Jacquard machines, warp drawing-in, or tying equipment. Furthermore information was given about new TF weaving system providing individual system configuration and maximum flexibility. This system offers virtually unlimited weaving possibilities, whether for flat, spacer, or complex multi-layer fabrics and 3D fabrics. Featuring latest shedding machines in combination with the double-rapier weft insertion system and a special slaying motion this system allows high-volume production of up to very thick and/or dense fabrics and efficient processing of a wide variety of technical and highly sensitive yarns. This weaving system is available featuring various machinery combinations and set-ups for weaving any application and desired technical fabric.

Picanol' s "Team Technical" launched a new campaign for the Technical Markets, entitled "Impossible? Not anymore!" and showed the power of its approach for existing and prospective customers alike. Picanol's strategy is to use its leading position in weaving-machines for mainstream textiles as a basis to grow in the sector of machines for woven technical textiles. Marketing-Manager Erwin Devlo and Market-Manager Technical Textiles Filips Lombaert, count on speed, versatility and reliabilty of the Picanol weaving machines and of course on the availability of their worldwide service. Both were very comfortable with the show and the positive customer feedback to the Picanol strategy.

Picanol booth © TexData International

VANDEWIELE showed its latest developments of textile products and related machinery. Innovations include further developments woven on the JEC award-winning 3D-Lighttrans weaving machine for multi-layer woven panels with integrated stringers, omega-profiles and hollow reinforcements. Other developments relate to new design possibilities in the field of one piece shoe-weaving, for creating 3D-effects and increased local permeability. Head of marketing and communications Mr. Danny Bourgois was very comfortable with the fair. He told us VANDEWIELE has so many exciting and new technologies, so that there is something for every interested visitor.

VANDEWIELE booth © TexData International

CREALET CEO Walter Wirz in front of the booth © TexData International

IQ-SPS from Germany and **CREALET** from Switzerland took the chance to point out their efforts to take advantage of synergies that exist in terms of products, services and market position. The two companies have the necessary know-how to modernize or overhaul weaving machines. The engineering department is constantly creating innovative products in the field of electronically warp feeding from beams or weaving creels for existing or new wide and narrow weaving machines as well as warp knitting machines. Special developments were realized in the feeding of carbon fibers. CREALET CEO **Walter Wirz** reported a high interest of the visitors in the presented technology and very good business discussions.

ITEMA exhibited on the joint booth of their representative Elmatex and informed visitors about its unique position to offer technical textile manufacturers the top three weft insertion technologies Rapier, Airjet and Projectile, in what is the most comprehensive portfolio on the market today for technical applications to weave the widest range of fabrics. Itema is registering an upward trend in inquiries for advanced weaving machines from weavers of technical fabrics and the Italian technology major – with over 180 years of combined expertise from the merger of three historic brands, such as Sulzer, Somet and Vamatex – expects that this trend will continue for the foreseeable future.

The continuous roll-out of customized special versions tailored for technical applications, including OPW Airbag, Fiber Glass, Bolting Cloth, among others, the wide weaving width up to 540 cm, as well as new and advanced devices make the R9500 by Itema the perfect machine for the manufacture of the full range of technical textiles, including ones with the finest monofilament yarn, multifilament yarn with high tenacity, and multiple pick insertion fabrics.

Technical fabrics are the specialty of the legendary and unique projectile P7300HP due to the unparalleled versatility and reliability of its weft insertion system. The unmatchable uniqueness of the positive weft transfer consists in the single insertion driven by the projectile, which catches the weft and carries it directly with no exchanges, providing unmatched efficiency.

The P7300HP continues to harness great interest from projectile weaving aficionados and represents an unbeaten and unbeatable benchmark for those looking to weave the very widest fabrics – up to 655cm weaving width – and high-specialty materials, such as agrotextile, geotextile and carpet backing fabrics. When it comes to weaving tape yarns, the Itema projectile weaving machine provides the highest performance compared to all the other insertion technologies in the market.

KARL MAYER looks back on an excellent Techtextil. “We are absolutely delighted with our participation in the fair. Together with JEC World, Techtextil once again proved to be one of the most important exhibitions for us,” explained Hagen Lotzmann, the Sales Director of KARL MAYER Technische Textilien GmbH. About 200 high-level conversations took place on the stand. Most visitors came from Germany, followed by Turkey, Poland and India.

Many existing clients came to discuss projects, customer trials and machine purchases, and some sales contracts were even signed. The company also made some important new contacts. “Techtextil is a fantastic fair in terms of sales,” affirmed Bastian Fritsch, KARL MAYER’s Senior Sales Manager. “Many new clients came to visit our stand, including manufacturers from other technology sectors and the clothing industry, who are looking for new end-uses in the field of semi-technical textiles, for example. Many of them already have some new ideas in mind, and are looking for partners to implement them. With our machines and know-how, we were able to help all of them.”

KARL MAYER booth © TexData International

One indication of the trend towards diversification is the fact that many of his clients operating in the conventional warp knitting sector were also exhibiting themselves. Bastian Fritsch's many visitors came from India and Turkey, the regions for which he is responsible. However, the majority of the visitors to KARL MAYER' stand were Europeans.

Any company focusing on future issues definitely found what they were looking for on KARL MAYER's stand at Techtextil which, for example, was featuring an impressive presentation of a future building material, textile-reinforced concrete. This composite enables lightweight, narrow concrete components to be produced using tough, carbon-fibre grids. The weft-inserted, warp-knitted textiles for the reinforcement are produced on KARL MAYER's machines.

As an alternative to conventional steel reinforcements, which are liable to corrode, the warp-knitted structures are increasingly attracting the attention of the construction industry - and consequently the textile industry. "The demonstration of our expertise in the field of carbon concrete proved to be a real magnet for the public," said Hagen Lotzmann.

Many manufacturers expressed a specific interest to operate in this sector. In addition to the products catering for the construction industry of the future, Jochen Schmidt said that he had had many discussions on conventional, warp-knitted technical textiles, especially geotextiles, coating/backing substrates, interlinings, and reinforcing textiles for plastic composites.

Other important topics were warp-knitted spacer textiles, nets, automotive textiles, and functional textiles for the sports and athleisure sectors. “Functional textiles are still attractive,” said Markus Otte from KARL MAYER’s Textile Product Development Department.

KARL MAYER’s machines and equipment for the technical textiles sector not only include warp knitting machines, but also warp preparation systems, particularly the OPT-O-MATIC manual sectional warping machine for use in the production of woven technical textiles, geogrids and coating/backing substrates, among others, the MULTITENS, a yarn tensioner that delivers flexibility and a reproducible quality and various creels. A special creel was sold to a French manufacturer at the show. Dieter Gager, the Sales Manager of the Warp Preparation Business Unit, who was delighted with the outcome of the fair, said that he had also held some specific negotiations regarding a project in India. He also made a number of initial business contacts, had some informal chats, and exchanged some interesting ideas. Many of his clients need customised machine concepts to put their ideas into practice. And, in this case, KARL MAYER is on hand as a reliable partner.

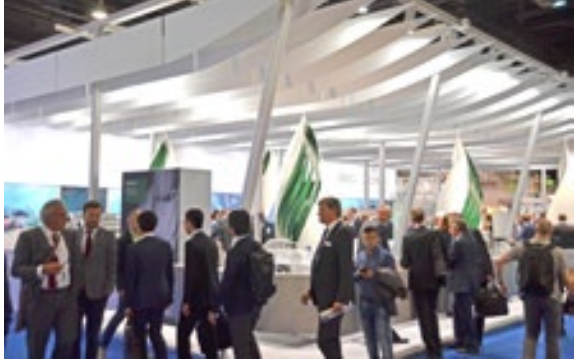
For **Groz-Beckert**, Techtextil 2017 was an opportunity for interesting conversations and exciting meetings. The number of visitors (more than ever) and the throng of people at the stand showed that technical textiles are continuing to gain in importance. Groz-Beckert is accompanying this development every day with products and services for the requirements of tomorrow.

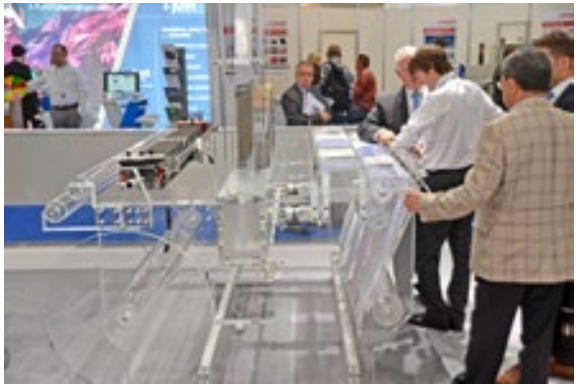
With the presentation of the INH (Ideal Needle Handling) quality management and a live demonstration of the customer portal, Groz-Beckert focused on process optimization in the field of sewing.

The patented INH process impressed in particular with its digital solution for documenting needle breakages. Via a mobile app and browser software, Smart INH enables the data sets to be saved and stored digitally as potential evidence. INH also helps with handling sewing machine needles during the entire sewing operation.

Of course, trade fair visitors also had the opportunity to experience the needle output carriage and its practical accessories specially developed for INH live in both digital and analog form. Another highlight in the sewing field was the “Mobile Lab”, which enabled material samples to be inspected and analyzed directly at the Groz-Beckert stand.

In the field of weaving preparation and accessories visitors were able to observe the PosiLeno® leno system in operation in addition to heald frames, healds, warp stop motions and drop wires on a weaving machine model made from acrylic glass. The leno system also impressed with its potential to increase efficiency by up to 100 percent.





Groz-Beckert booth © TexData International

And there was a high demand for information on the worldwide service offered in the field of weaving, which sets itself apart in particular with expert knowledge and intensive application advice.

Using a detailed model, visitors to the stand experienced the staple fiber needle punch line launched in March this year in the Technology and Development Center (TEZ) at the headquarters in Albstadt.

The expansion of the application advice in this field also attracted large amounts of interest at Techtextil. The felting division also presented two further innovations with Groz-Beckert® dur and the HyTec® P-jet strip. While Groz-Beckert® dur needles impress with improved resistance to corrosion and an up to 30 percent longer service life, the new jet strip impresses with improved handling and a significantly increased hardness, which has a positive effect on all mechanical properties, such as scratch resistance, bending stiffness and service life.

The focus in the field of carding was on the high-performance worker and doffer wires SiroLock® and EvoStep®. While the EvoStep® card clothing aims to reduce raw material consumption, the focus of SiroLock® card clothing is on boosting performance of the roller card via high delivery rates and nonwoven weights.

For knitting and warp knitting customers, the Groz-Beckert stand offered the product portfolio for circular knitting, warp knitting and flat knitting technologies.
Tailored solutions provide the answer to increasing requirements with regard to wear, resilience of knitting components and ability to process a wide range of materials such as metal or glass fibers in the flat knitting sector. In the field of circular knitting too, the trend in technical textiles is moving towards customer-specific solutions, which Groz-Beckert can offer in the form of comprehensive solutions for all knitting components – needles, system parts and cylinders.

For warp knitting, the production of technical textiles is still an extremely important part of the entire textile production process, which is why Techtextil has been one of the most important trade fairs in the warp knitting sector since it was founded. At the Groz-Beckert stand, this was reflected in the presentation of a warp knitting model made from acrylic glass. The presentation showed visitors the smooth interplay of the individual warp knitting modules and the benefits of system solutions from Groz-Beckert impressively.

Monforts presented solutions of the TechTex Division on the joint Fong's Europe booth. In the center of the presentation were the new coating units incorporating Knife over roller/air system; magnetic roller system; and printing head systems. The Monforts coating range 'texCOAT' is now available worldwide and follows the recent acquisition of renown manufacturer Timatec; who was previously active mainly in the central European markets. New applications and interesting references of the coating units will be presented as well including membrane- and Filter-applications. The Monforts range of coating solutions also includes the recently introduced Montex Allround. All Monforts coating systems feature simple and user friendly PLC techniques with on-screen visualisation for all operating modes. Recipe management for different coating processes are integrated in to the proven Qualitex control system of the Montex stenter.

Vice President **Klaus A. Heinrichs** told us that technical textile applications are a growing market for Monforts and this business is about one-third of their overall business. "Monforts is moving more and more into high-tech machinery for technical textiles applications and this is the strategy for the future of the company", Heinrichs said. Concerning the visitors he was very comfortable with the quality of dicussions.

Monforts booth © TexData International

Benninger exhibited on the joint booth of its representative Elmatex and provided visitors with their comprehensive process know-how in the fields of technical textiles, in particular in the areas of textile finishing, washing, bleaching, dying (Küsters DyePad) and mercerizing. Benninger develops and manufactures textile finishing and cord production ranges as well as providing complete system solutions. The vast knowledge of Benninger in the field of controls and automation is based on many years of experience with machines and ranges, also in other industries. A special emphasis was given to the newly redesigned TRIKOFLEX drum washing compartment.

Benninger booth © TexData International

Brückner CEO Regina Brückner and Prof. Ernst Messerschmid
© TexData International

Brückner booth © TexData International

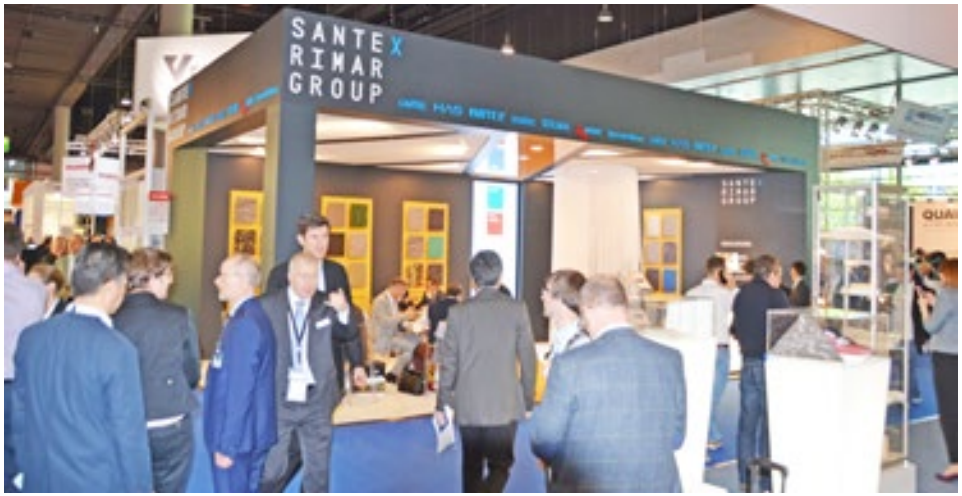
BRÜCKNER showed a wide range of application examples for Technical Textiles which can be finished on the tailor-made and resource-saving BRÜCKNER machines. A great number of special machines for very specific purposes demonstrate the competence of the creative BRÜCKNER team. Manifold product examples on the booth invited to discussions with the BRÜCKNER experts. One highlight on the BRÜCKNER booth was a speech by German astronaut Prof. Ernst Messerschmid about space textiles following the motto of the fair. Prof. Messerschmid underlined the importance of technical textiles for the space industry. The audience acknowledged Prof. Messerschmid and Brückner CEO Mrs. Regina Brückner with great applause and Mrs. Regina Brückner was very pleased about this feedback as well as with the number and quality of the business discussions during the fair.

iNTERSPARE exhibited for the first time at Techtextil and presented their machine portfolio of the textile finishing line ARTOS / Babcock textile machines. The focus was on the ARTOS Unistar stenter, which is particularly suitable for weaving equipment and allows permanent production at high chain tension. The heart of the ARTOS Unistar is the legendary horizontal chain.

It is a lubrication-free sliding pieces chain with enormous capability of resistance. Managing Director Dirk Polchow was comfortable with the number and quality of the visitors and he was once again surprised how many textile people highly estimate the quality and reliability of Artos and Babcock stenter machines.

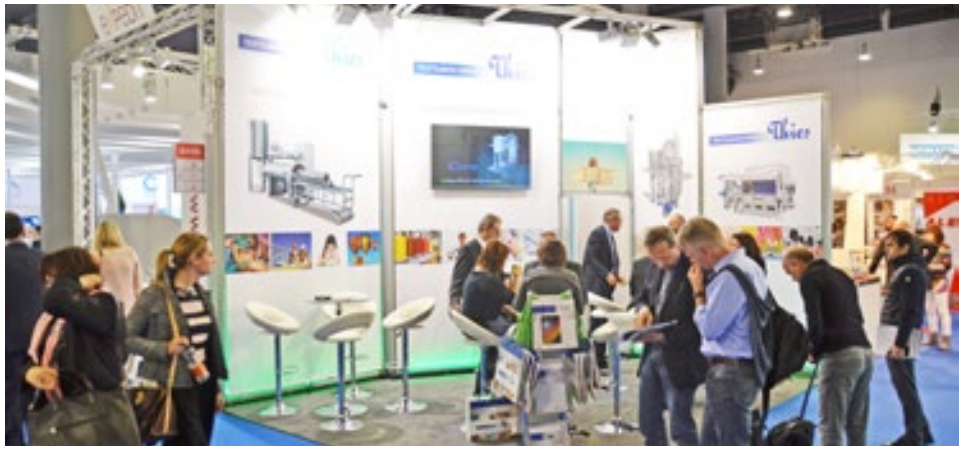
Happy iNTERSPARE people have been comfortable with the business at their Techtextil premiere
© iNTERSPARE

SANTEX RIMAR GROUP informed about their huge portfolio of textile machines for weaving, textile finishing, technical textile, nonwovens and green solutions and latest innovations of their brands SMIT, CAVITEC, ISOTEX and SANTEX NONWOVENS. Unfortunately we hadn' t the opportunity to speak to a Manager because the booth was always crowded with people.



SANTEX RIMAR GROUP booth © TexData International

Thies Textilmaschinen highlighted latest trends and innovation like the well-established iCone for bleaching and dyeing flakes, yarns, cables and belts, the HT-Jigger for dyeing fabrics, nonwovens or space fabrics, the iMaster H_2O for all fabric applications where water consumption is an important consideration and the soft- TRD machines designed for the universal dyeing of wovens, knits and nonwovens.



Thies Textilmaschinen booth © TexData International

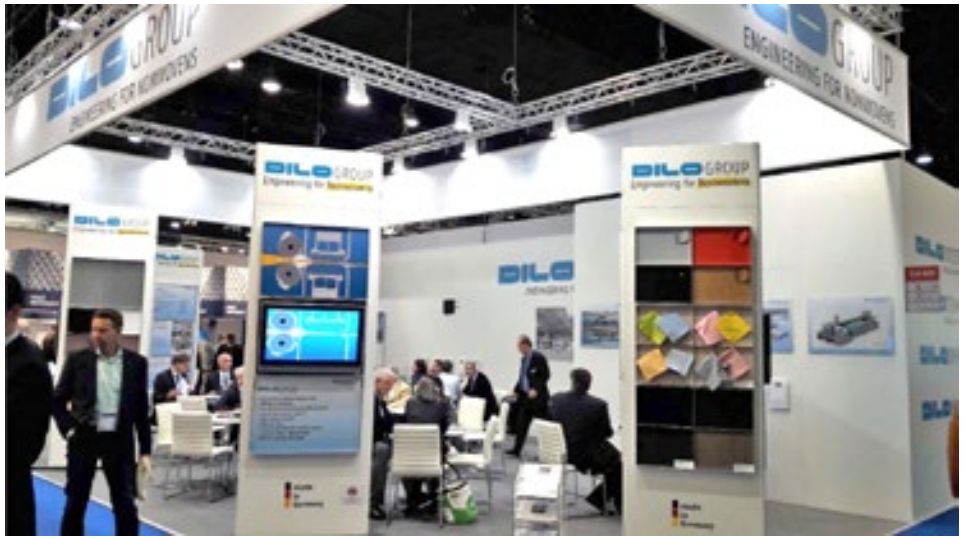
SIKA informed about their market leading solutions for industrial lamination. Esspecially the SikaMelt® hot melt adhesives achieve enhanced textile performance and increased production efficiency. SikaMelt® are reactive (HMPUR) and non-reactive (PSA & PO) hot melt adhesives used to bond various combinations of plastics, metals, textiles, fabrics, foams, non-wovens and composites. SIKA was very comfortable with the number of visitors on the booth and business discussions with clients and visitors.

SIKA booth © TexData International

AUTEFA Solutions informed about turn-key lines as well as individual machines for nonwovens manufacturing which stand for best possible Total Cost of Ownership (TCO). The machines offer high productivity, the flexibility for various nonwovens products and low maintenance costs. Head of Marketing Mrs. Jutta Soell informed us that business at Autefa Solution is doing very good and especially the customer event last November has been a big success. Also at Techtextil the visitors were very interested in the latest machines of Autefa Solutions like the new hydroentanglement system V-Jet, the crosslapper Topliner CL 4004 SL and the Needle Loom Fehrer Stylus ONE, a machine for all needling applications.

DiloGroup, the leading group in the sector of staple fibre needling lines, who realized record turnovers in 2015 and 2016, took the chance to once again extensively inform about its equipment portfolio. The machines of DiloGroup are used in all the most important sectors such as automotive, floor coverings, synthetic leather, geotextiles and filtration.

Staple fibre needling lines which consist of fibre preparation, i. e. opening and blending equipment, card feeding and cards as well as crosslappers and needle looms, were the main topic of discussion on the fair. One important aspect for users is the joint drive and automatization technique which is used to interconnect the whole system and which complies with the demands of modern interlacing and smart production.



Dilo booth © TexData International

DiloGroup not only presented its standard universal lines but also the latest innovations of the DILO portfolio which provide increased manufacturing efficiency, improved endproduct quality and greater productivity aided by the degree of automation. The new technology “HyperTex” using an inline yarn layer to produce multi-layer reinforced nonwovens has been developed especially for filter media, geotextiles and roofing material. This new approach has been acknowledged with great interest. In the field of special fibres processing as used for carbon composite materials made from recycled fibres much headway has been made. Compact special lines for product development using recycled carbon fibres are now successfully operated.

In addition, DiloGroup informed about wide carding systems with high web speeds used in water entanglement lines. DiloSystems offers such special carding systems in working widths exceeding 5 m and web speeds of more than 400 m/min. The great number of customers and interested parties showed once again that the development potential for technical textiles, especially for needled nonwovens and composites, has not yet been fully utilized.

Trützschler Nonwovens & Man-Made Fibers put the focus on their carding solutions. The company offers random, airlay, random and now also highspeed cards for spunlacing lines. **Jutta Stehr**, Senior Marketing Manager, Trützschler Nonwovens & Man-Made Fibers, told us that there is a good climate of investment in Europe and people want to get things done.

Concerning the show she said: "It has been extraordinarily good. We had lots of visitors to our stand, mainly Europeans and Americans. There were also more Russian visitors than anticipated. Esspecially the second day was overwhelmingly busy with customers from all corners. For Trützschler Card Clothing and Voith it also has been a good exhibition."

Trützschler booth © TexData International

Conclusion

We believe that this fairly comprehensive report can provide you with a good impression of Techtextil. The examples of the innovations presented by market-leading companies from various sectors of the technical textiles and nonwovens industries illustrate the kind of potential that these materials have for many industries. Changes could be extremely significant, such as in the case of the composites, which are becoming an increasingly important competitor for steel in the industry of lightweight construction. Or they could be small changes, such as weaving a reflective fibre into a denim fabric and in so doing perhaps even increasing child safety.

In addition to the imagination of the inventors it is however still the machinery which is essential to nearly all innovations, as ideas are then able to be produced on an industrial scale. Quality, productivity and therefore marketable prices are the most important factors for all products. And it is this which make the innovations of the mechanical engineers so crucial for the technical textiles industry and for all the sectors which come next in the chain of value creation. Thanks to another successful Techtextil show and the lasting exuberant mood in the sector, we are already looking forward to the innovations at the next Techtextil event.

The next Techtextil and Texprocess trade fairs will be held concurrently in Frankfurt am Main from 14 to 17 May 2019 and thus retain the sequence of days from Tuesday to Friday.

Further impressions

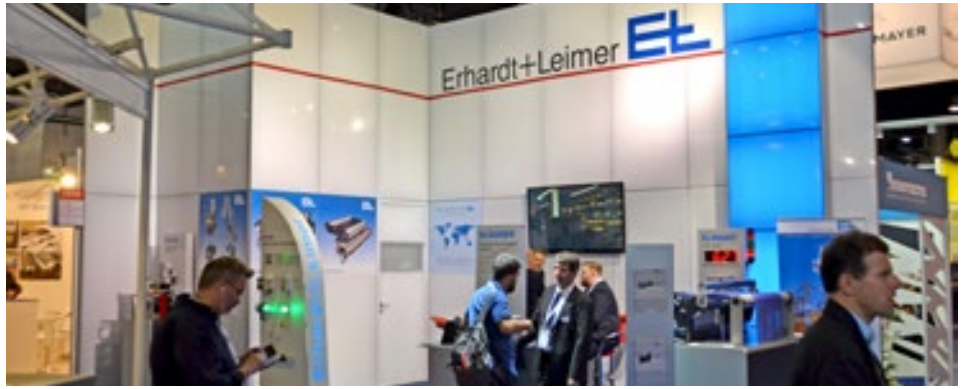
Italian village with special branding by ACIMIT © TexData International

Digital printing solutions by Zimmer © TexData International

Mahlo booth © TexData International

Laroche booth © TexData International

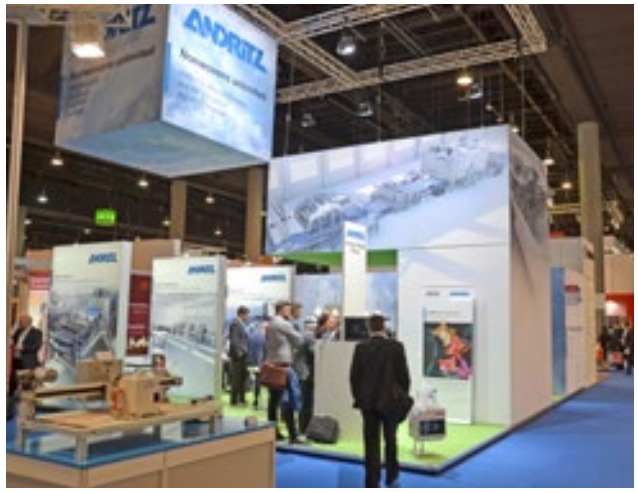
BASF booth © TexData International



Erhardt + Leimer booth © TexData International

Tanatex booth © TexData International

Booth of ITM Dresden © TexData International



Andritz booth © TexData International

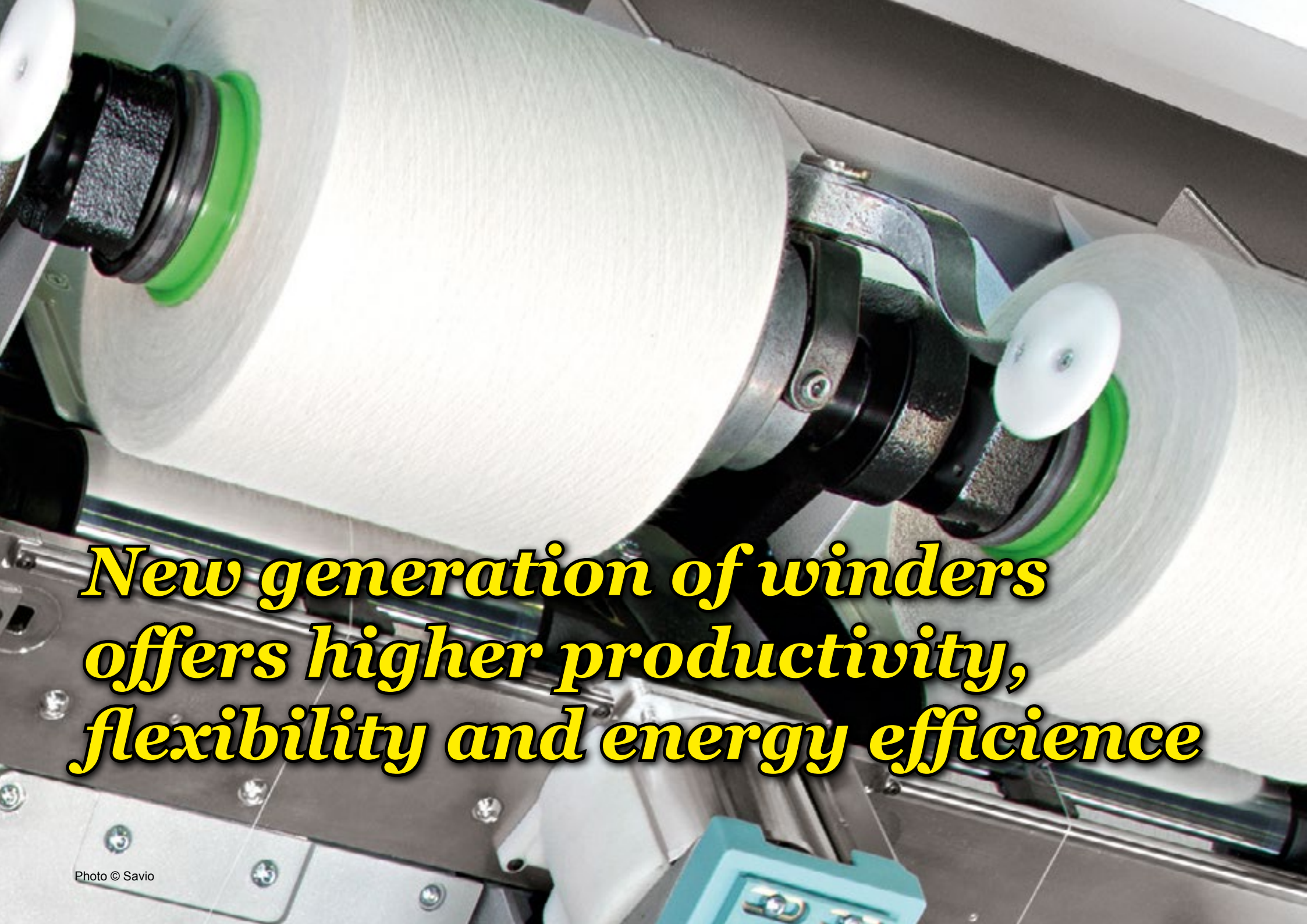
Elmatex joint booth © TexData International

Trevira booth © TexData International

Archroma booth © TexData International

Jakob Müller booth © TexData International

Techtextil Innovation Award exibits & ceremony © Messe Frankfurt / TexData International



New generation of winders offers higher productivity, flexibility and energy efficience

Photo © Savio

According to “The Fiber Year” report, global fibre consumption and fibre production in 2016 exceeded the 100-million-tonne mark for the first time ever. This is all the more remarkable when you consider that in 2010 the figure was a mere 80 million tonnes. The 4% annual growth rate may sound quite modest, but in absolute terms an additional 20 million tonnes of fibres have to be produced and processed compared with 2010. Growth on this scale calls for a corresponding increase in capacity, which in turn can be achieved via process optimisation and modernisation or new investment. In many stages of the yarn manufacturing process, new machinery has made decisive improvements to productivity while also lowering energy consumption. This has prompted us to take a look at an important stage of the process that, like spinning, is of immense importance for processing fibres to produce yarn: **winding**.

We intend to focus on the latest developments of the market leaders because, given their high level of innovativeness, these companies are most likely to represent the state of the art for the most important winding segments or have the most advanced technology at their disposal.

Savio

Savio from Italy is a leader in the yarn finishing machine sector, operating worldwide in the manufacturing and marketing of automatic winders, continuous shrinkage and bulking winders, two-for-one twisters, and rotor spinning frames with factories in Italy, China and India. Today as much as yesterday, global dimension, extreme flexibility and productive excellence are Savio’s principal strategic assets, continuously renovating and consolidating its leadership through time.

Eco PulsarS winding machine

Savio’ s latest innovation in the winding segment is the Eco PulsarS winding machine. After the world premiere at ITMA Milan 2015, attracting a lot of attention from customers, Eco PulsarS has been showcased at ITMA Asia 2016 and at India ITME 2016.

PulsarS represents the fifth generation of Savio winding machines after the iconic models Ras, Espero, Orion and Polar.

PulsarS proposes a revolutionary concept of the winding process, introducing an entirely innovative solution, which removes the existing structural limitation of the conventional machines. The machine, with its sustainable eco-green advantage, replies to the markets demand of energy saving including also room air conditioning, together with improved production performances, high quality packages and utmost flexibility. EcoPulsarS, with its innovative platform can save up to 30% power bill, reduce yarn waste, air conditioning costs & noise inside the spinning room. Energy is a major cost component in the textile industry. The rising energy prices, affecting fuel and electricity, have caused soaring costs in the process, thus reduced the competiveness of textile products in some domestic markets, where imported products may be cheaper.

Savio EcoPulsarS © Savio

Suction represents 75% of the total energy of a winding machine. EcoPulsarS's solution of the "individual and independent suction unit per spindle" represents a real break-through versus the conventional system. Each unit operates at optimum suction values without influencing the rest of the spindles. In addition, independent suction systems are provided to the auxiliary devices for fully automatic machines. This means no more compromises in balancing the suction as in conventional centralized systems, in which the fan is permanently in operation. Since suction is generated only when needed, customer can save up to 30% power bill costs, while a better efficiency, a smoother winding process and overall superior package and yarn quality are achieved too.

EcoPulsarS combining all new features and design has created an environment in which each part of the machine can operate at its optimum level. Spindles and bobbins feeding systems set independently the level of suction required. Suction is generated as needed and used without losses. The new Controlled Cut System, Yarn Tension Control System, Waste Collection&Separation System and Upgraded Splicing Solutions, each contributing to the overall reduction of process downtimes.

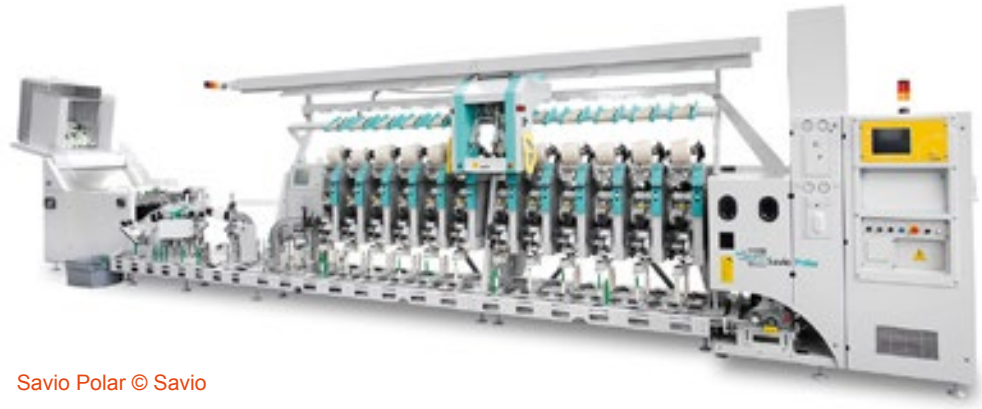
Eco PulsarS, with its sustainable eco-green advantage, replies to the market demand of energy saving, together with improved production performances, high quality packages and utmost flexibility.

Polar winding machine

The Polar winder is absolutely the Savio bestseller in the traditional standard winding platform. It is Savio's well proven and the bestselling automatic winder, still the #1 winder in many world markets. All Polar models (manual feeding, stand-alone autofeeding, automatic link feeding) represent the utmost technology available. The model pioneered the use of efficient and reliable electronic servo controls to boost performance.

This state- of-the-art machine has been designed keeping in mind the demands of the customers in terms of increased productivity, reduced energy consumption, reduced waste and production of yarn package of top high quality. Further emphasis has been given to realize machines friendly use and almost maintenance free for any type of working environments. All POLAR models (manual feeding, automatic feeding free standing, and automatic link) represent the utmost technology available: the previous success of the mechanical models has been followed by the last generation of the fully controlled electronic one.

Savio's Multicone digital yarn layering technology (drumless) is available for Polar range.

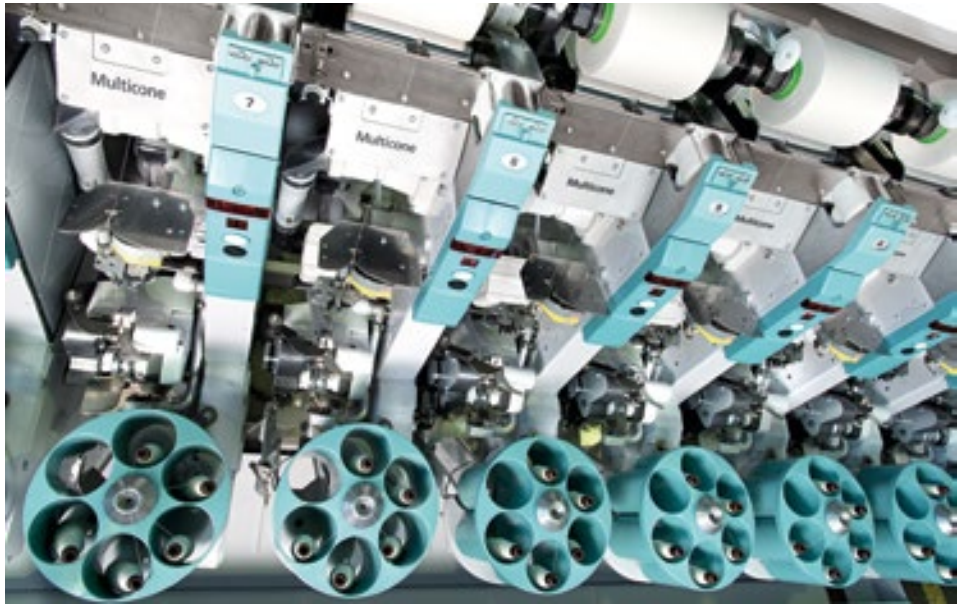


Savio Polar © Savio

Multicone technology

Multicone is a new thread-guide technology in Savio product portfolio, first presented at Shanghaitex 2014 exhibition in China. This new digital yarn layering technology (drumless) is especially addressed to customers producing packages for dyeing and very fine counts.

Multicone represents the proper solution to achieve flexibility in package formation, for an easy and fast change in the winding process to prepare all formats. The different downstream processes require a wide flexibility in the wound package building, in order to optimize the specific efficiency. Packages for dyeing, warping, weft, knitting, double twisting, require a different and flexible package formation in terms of geometry, edges shape and density. "Multicone" system represents today the proper solution to achieve this kind of flexibility in the package formation.



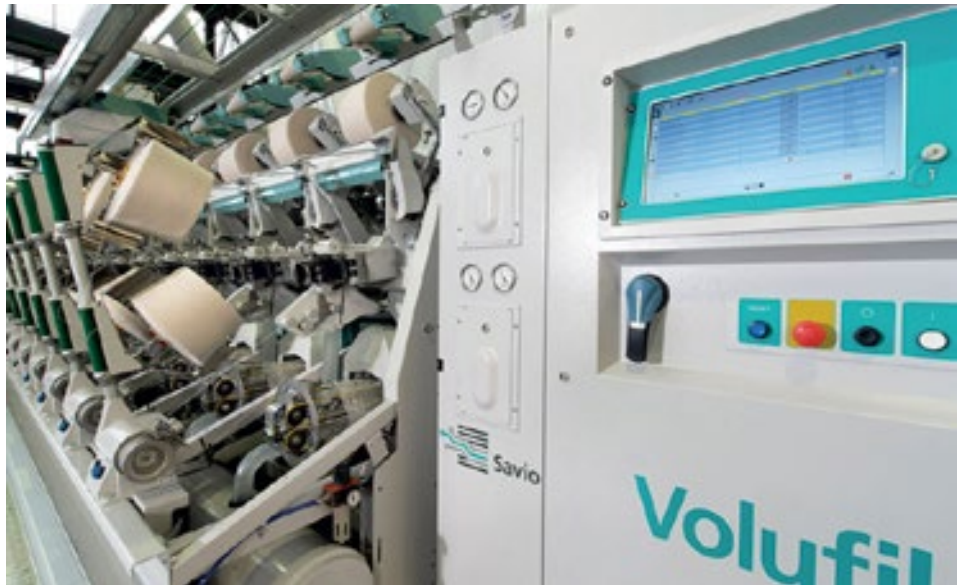
Savio Polar Multicone © Savio

Savio's thread guide electronic control allows to set winding angle, traverse stroke, position on the package tube and the yarn distribution over the package. All above improves design and formation of the package, optimizing all the downstream processes, thus allowing customers to obtain the best results. The user can interact with a visual interface on the PC screen for drawing the final package, by setting the stroke mode variations along the package diameters. The user is able to customize and tailor the package design, according to his requirements for the downstream process.

All these advantages make the new winding system "Multicone" a solution to achieve the best result for any yarn type and package format with different traverse take-up. It allows the tailoring of package for different end use with simple settings on PC.

Volufil Multicone

Volufil Multicone combines thermic treatment and winding process on a single machine. The consolidated success of the "Volufil technology" and the new demand of different yarns for diversified fabric applications, has requested several new developments on the machine technology. The new Volufil Multicone represents the proper reply to the new markets requirements. Savio has extended the technological process on acrylic heat set yarns, on special yarns (chenille) and on traditional HB Acrylic fibers, also blended with wool and elastomeric filaments.



Savio Volufil Multicone © Savio

SSM

The Swiss based SSM Schärer Schweiter Mettler AG, the inventor of the electronic yarn traverse system, today is a modern, global mechanical engineering company and by now market leaders in winding technologies for textile machinery. Since 30th June 2017 SSM belongs to the Rieter Group. SSM offers renowned machines for Dye Package Winding/ Rewinding (including Technical Textiles), Assembly Winding (doubling), Air Texturing, Sewing Thread Finish Winding, False Twist Texturing, Air Covering, Draw Winding, Yarn Singeing and Conventional Covering. At ITMA 2015 in Milan SSM continued their tradition of trend-setting with the presentation of breakthrough technologies and demonstrated their lead in the market with the introduction of the new XENO-platform. In total six new product have been launched in the Winding & Doubling segments and two in False-Twist & Air-Texturing are showed for the first time.

SSM XENO

The new SSM modular winding machine platform XENO combines dye package winding, rewinding and doubling applications with three different winding technologies. The XENO is available with counter rotating blades (XENO-BW), with friction drive system (XENO-FW) and with high quality SSM yarn guide system (XENO-YW). With the new platform, SSM is able to offer the three winding technologies for assembly winding as well (XENO-BD, XENO-FD and XENO-YD).

SSM Xeno © SSM

The XENO-YW is a precision winding machine for all kind of staple and filament yarns suitable for dye package winding, warping preparation and rewinding with or without lubrication or waxing. Yarn count is between Ne 1.5 and 240 respectively 10 to 4000 dtex. The mechanical speed of the SSM XENO-YW is up to 2500 m/min (process speed depending on process parameters) and the package shape is freely programmable. The supply package diameter is up to 320 mm and the take-up package diameter up to 300 mm. Package weight is up to 10 kg. The layout of the machine is single or double sided with 5 (single sided) or 10 (double sided) spindles per section.

The XENO-FW is a precision winding machine for all kind of staple and textured filament yarns suitable for dye package winding, warping preparation and rewinding with or without lubrication or waxing.

And the SSM XENO-BW is a precision winding machine for all kind of staple fibre yarns. Complying to the growing automation demand (due to increasing labor costs) all the XENO machines could be equipped with an automatic doffer system. Another advantage and benefit of the XENO platforms is the enhanced DIGICONE® 2 winding algorithm, enabling a 10-20% increase on dye package density with same dyeing recipe. The SSM XENO platform is manufactured 100% in Switzerland for highest demands and quality.

SSM X-Series

For the first time ever, SSM presented their X-Series. SSM says the machines (TWX-W/D, PWX-W and PSX-W/D) are the most economized winding solution, reduced to the max yet maintaining highest flexibility for any cost efficient winding application.

The SSM TWX-W is a precision package winder for dye-packages and rewinding applications for staple yarns and textured filament yarns. The electronic fastflex™ yarn laying technology allows a high flexibility to produce a made-to-measure crosswound packages.

The well-proven technology cuts maintenance and service costs to a minimum. digitens™, the established technology for online tension control during winding enhance the winding performance and package quality.

The PWX-W offers clear benefits to dye package winding and rewinding of filament yarns, with or without lubrication. This is because only a quick response to market trends in combination with high cost-efficiency enables yarn dyers to be successful with competitive advantages. The PWX-W is for textured or flat filaments, elastic yarns, silk, fine technical yarns. It also comes with electronic fastflex™ yarn laying technology and digitens™ online tension control system for reproducible package density and best dyeing results.

SSM TWX-W © SSM

Other key features are the mechanical backpressure system for low and high package densities and a direct package drive for precise package build-up and best unwinding properties. Furthermore it stands for a space saving concept reducing the machine footprint and building costs.

The SSM PSX-W is a precision package winder for dye package winding and rewinding. The PSX-W is suitable for all kinds of spun yarn. The high productivity and reproducibility resulting in a minimum off-shade dyeing are the significant advantages for any dyer. The decisive success factor of the PSX-W winder is its unique thread laying system by means of counter-rotating blades, which has established itself as the system, gentlest to the yarn. The rotating motion of the blades is practically wear-free and ensures highest production speeds at lowest possible operation costs.

SSM DURO

Latest SSM innovations concerning winding machine for technical yarns are the SSM DURO-TW precision winder and the SSM DURO-TD precision assembly winder which both have been presented at the last Techtextil 2017 in Frankfurt.

The SSM DURO-TW precision winder for all technical yarns up to 50'000 dtex offers a new level of flexibility and winding quality in one machine; thereby ensuring the fulfilment of all customer requirements.

It was introduced at ITMA Asia 2014 as a surprise and attracted the largest attention. The DURO-TW is intended for finish winding of yarns from ring twisting bobbins (single and double flanges), for splitting packages for subsequent processes, e.g. cabling or warping and for piece winding of rests and short packages.

The unique characteristics of tailor-made high performance yarns is helping such yarns to substitute other classical materials in large range of applications; thereby continually increasing the usage of technical textiles and consequently their consumption. Despite this overall positive scenario production lot sizes can vary greatly; from large ones for standard yarns to small ones for specialties, managing such variances poses a challenge for any producer. Hereby the SSM DURO-TW is ensuring the fulfilment of all customer requirements.

The mechanical speed of SSM DURO-TW is up to 1500 m/min (winding speed depending on winding parameters, yarn quality and supply packages) and the package shape is freely programmable. The supply package diameter is up to 380 mm, the height up to 600 mm, and the package weight up to 24 kg.

The SSM DURO-TD precision assembly winder for coarse technical yarns up to 50000 dtex offers a new level of flexibility and package quality in one machine; thereby ensuring optimal unwinding and running performance in all twisting processes.

SSM DURO-TW © SSM

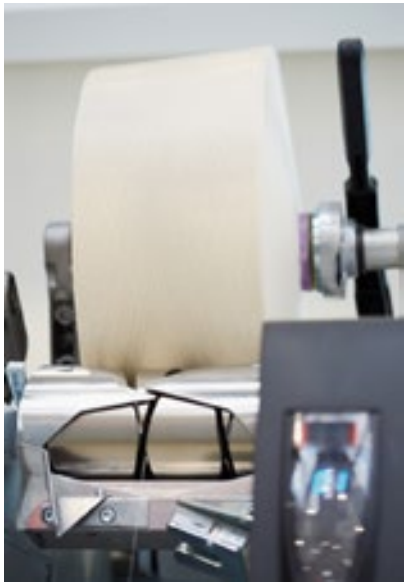
The DURO-TD is intended for assembly winding of all types of yarns, for rewinding of deformed packages and for piece winding of rests and short packages. The assembly winder DURO-TD allows the plying of multiple ends/yarns; independent of them being of the same type or completely different. Optional intermingling guarantees loop-free twists as well as optimal unwinding during twisting. The ability to run closed precision winding enables higher package densities, thereby increasing the knot-free length. Key features of the SSM DURO-TD are also the fastflex™ electronic yarn laying system for flexibility for all types of yarns and tube dimensions and the precision and DIGICONE® winding for guaranteed unwinding performance. The SSM DURO-TD stands for fast style-change time for yarn to yarn and tube to tube, a simple operation, a large range of options for a wide range of applications including intermingling and a low noise emission compared to established solutions.

Saurer

The Saurer Group Business Unit Spinning brands Schlafhorst and Zinser, have been pioneers in the production of staple fibre yarns for over 100 years. The ring spinning specialist Zinser is leading the market with the widest range of ring spinning applications. The market and innovation leader Schlafhorst with the product brands Autocoro, BD and Autoconer completes the entire spinning line right up to the quality package.

With production in Germany, India and China as well as an international service and consultancy team, Schlafhorst & Zinser fulfill the mission: to make spinning mills across the globe more efficient, productive and economical.

Since 1962 Schlafhorst offers the automatic package winding machine Autoconer to the market. The history of this machine is characterised by a long list of ground-breaking inventions that have always increased customer benefits. Every product generation of the Autoconer exceeded the industry's expectations regarding efficiency and technology. Revolutionary splicing technology, innovative sensor technology and control systems, the unique FX technologies and intelligent automation systems became state of the art, thanks to Schlafhorst. In June 2017 the 2.5-millionth Autoconer winding unit was put into operation.



Saurer Schlafhorst Autoconer 6 © Saurer Schlafhorst

Saurer Schlafhorst Autoconer 6

Saurer Schlafhorst has introduced the Autoconer 6 – in a brand-new version geared to E³ – to the general public at ITMA 2015. E³ is synonymous with triple added value in the energy, economics and ergonomics categories.

Schlafhorst has cut the energy consumption of the Autoconer 6 by up to 20 % compared with its predecessor model. The most important factors contributing to this perceptible reduction in resource consumption are the new, particularly energy-efficient Eco-Drum-Drive System, suction motor and frequency inverter with improved power efficiency, SmartCycle in combination with the new intelligent vacuum control system “Power on demand” and the flow-optimised suction tube. MultiJet also plays an additional part in reducing resource consumption costs by cutting the compressed air consumption.

Even the basic model of the new Autoconer 6 is 6 % more productive than its predecessor model. With state-of-the-art process intelligence and productivity-optimised functions (LaunchControl, Eco-Drum-Drive System, SmartCycle, TensionControl, etc.) the Autoconer 6 operates with enhanced efficiency and more productivity directly from the start. Unproductive cycle times and downtimes are minimised. Up to 6 % more productivity can be optionally achieved with Speedster FX and the new SmartJet function, yielding up to 12 % more productivity in all – a unique leap forward.

With intelligent sensor technology and smart process control, the Autoconer 6 pushes the textile technological limits by itself, winds always at the most productive settings virtually without the need for operators. Smart electronics, functional mechanical innovations, autocalibration of aggregates along with autonomous elimination of malfunctions make manual intervention and adjustments by staff superfluous.

The various machine types (RM, D, T and V) allow individual process automations in every spinning mill. With the most intelligent material flow system around, the Autoconer 6 offers the world's best solution for increasing process reliability and independence from operating staff. The unique new circular magazine and its 9 + 1 bobbin feed concept create a new standard for the Autoconer 6, type RM machine too. The XChange doffer tops off the new automation solutions with its excellent package handling and innovative functions.

The Autoconer package is the benchmark for quality and added value in downstream processing. This is true both for commodity applications and for the very sophisticated demands of high-end applications. Yarn tension control is now available to all with TensionControl. With the new gate tensioner, new yarn trap, modified waxing unit and new LaunchControl even the basic version offers quality functions that are thought out down to the last detail. The innovative FX high-performance components Autotense FX, Variotense FX, Propack FX, Variopack FX, Ecopack FX, Speedster FX and PreciFX hugely boost production performance and raise quality, productivity and cost-efficiency to the most advanced level.

The splicer geometry of the SmartSplicer model family has been completely revised to ensure the best splice quality in every application with the simplest handling. The system guarantees spliced joints that are identical with the yarn, maximum strength, outstanding dyeing results and full added value in downstream processing.

Depending on the application, customers can choose between the SmartSplicer, SmartSplicer Injection, SmartSplicer Thermo or SmartSplicer Elasto. The splicers are supplied ready for operation and now as standard with ceramic shears.

Uster

At the end we would like to have a quick look on a tool which is more than important for achieving the highest quality in yarn.

Uster Technologies is the global market leader in textile quality control, from 'fiber to fabric'. USTER® systems and services help to ensure optimum quality and competitive products. The company's pedigree is unrivalled – more than 60 years' expertise in testing and monitoring solutions dedicated to the production of the finest fibers, yarns and fabrics.

The USTER® QUANTUM 3 is a yarn clearing and monitoring system for winding machines consisting of the Central Clearing Unit 6 (CCU6) with one control unit per winder where all settings and operational check of each position are made from the Central Clearing Unit, intelligent clearer measuring heads (iMH) for each winding position and an interface to the winding positions and connecting cables. The world-leading yarn clearer is set to reach a notable milestone in the 2017 autumn months, when the one millionth unit will be produced at USTER headquarters in Switzerland.

The market success of the clearer has been accelerated by the launch of the latest version of the USTER® QUANTUM 3, which offers new features targeting intelligent quality management at specific fashion-oriented applications.

This latest edition of the successful USTER® QUANTUM 3 yarn clearer allow spinners to deliver yarns which are on-trend and also on-quality. Core Yarn Clearing and Color/Shade Variation are unique innovations which put spinners in control of quality and avoid claims and complaints in important applications such as stretch denim and sportswear, and in the newly-fashionable market for mélange and subtly-colored yarns.

USTER® QUANTUM 3 © Uster

USTER® TESTER 6-C800 – The Yarn Inspection System © Uster

The Core Yarn Clearing feature with USTER® QUANTUM 3 is the first-ever automated solution to monitoring and assuring the quality of yarns with an elastane center encased by a cotton or synthetic outer. Fabrics with stretch and fancy slub effects created in this way continue to be extremely popular in both fashion items such as denim jeans and in functional garments and sports clothing. The latest USTER® QUANTUM EXPERT 3 builds the link between USTER® QUANTUM 3 Anniversary Edition and the Total Testing Center of USTER® TESTER 6. This combination provides a total mill overview. Quality exceptions can be traced, based on integrated data from the clearer and all other processes. For example, USTER® QUANTUM 3 information can be combined with laboratory test data to predict the weaving performance of a yarn.

Oerlikon Barmag

Oerlikon Barmag is the world market leader in development and production of spinning systems and equipment for manmade fibers such as polyester, nylon and polypropylene and for texturing machines. Oerlikon Barmag has also established itself as a successful niche-market supplier: winders for special yarns, special applications and tape and monofilament systems are developed and manufactured at the Chemnitz site. I the sector “winders for special applications” the Oerlikon Barmag winder portfolio offers a range of versatile high-speed winders with the ASW, the babyASW and the WinTens. They make modernizing of the take-up system particularly promising.

The winders of the Chemnitz-based specialty product expert are diverse, both in terms of processes and materials and in terms of yarn applications: POY, FDY or industrial yarn, polyamide, polyester or polypropylene, textile microfilament yarns or industrial yarns with thicker titers – these multi-talented products are perfect for virtually any challenge. The first-class package build – achieved by winder settings precisely adjusted to each polymer and each titer range as standard – guarantees ideal further processing of the yarn, while ensuring energy and efficiency increases. Oerlikon says that the machine availability of the winders proves that high-tech does not have to be delicate: their extremely low maintenance requirements and costs and their durability make Oerlikon Barmag winders a prudent investment.

In October 2016 Oerlikon Barmag has once again expanded the process window of its **WINGS family**, covering an ever-wider range of applications. Latest member is the **WINGS POY HD** available for processing high titers. With its expanded godet system, the new winder has been designed especially for the requirements of high yarn titers of up to 500den polyester POY. In conjunction with the EvoQuench radial quenching system, microfilament yarns with high titer ranges can now also be manufactured with outstanding properties. Combined with the **eAFK** texturing machine – also designed for high titers – Oerlikon Barmag therefore now offers a total ‘From Melt to Draw Textured Yarn’ concept that produces polyester DTY with up to 450den in the accustomed Oerlikon Barmag DTY quality. The **WINGS XS model**, only unveiled in 2015, marked the market launch of a solution for modernizing older POY systems based on WINGS technology. In addition to processing polyester, the **WINGS POY/HOY** concept also offers special variants for processing polyamide POY and HOY.

Oerlikon Barmag eAFK © Oerlikon Barmag

Oerlikon Barmag WINGS Family
© Oerlikon Barmag

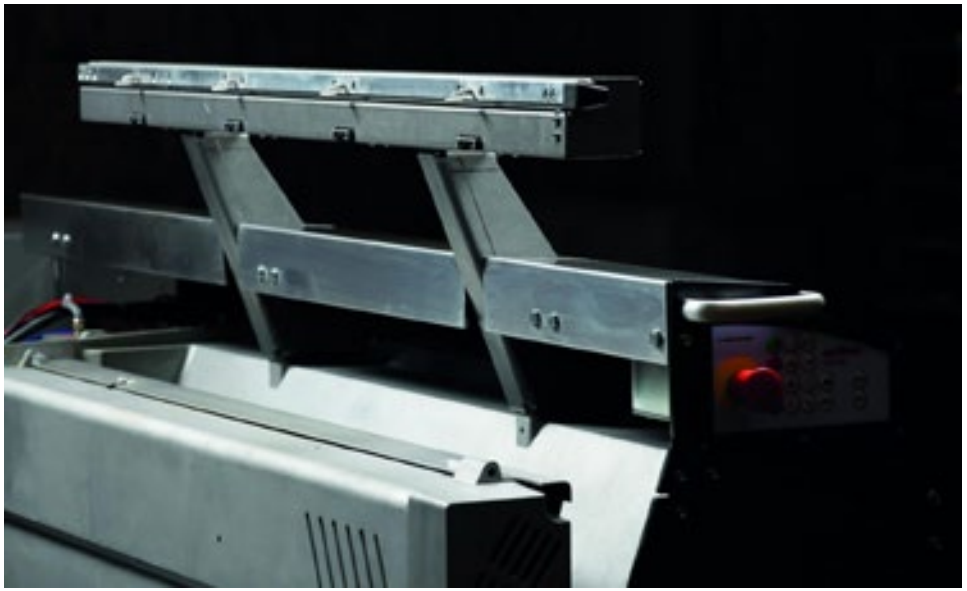
Since its market launch in 2010, the WINGS concept for FDY processing has successfully established itself on the market with a total of more than 4,000 installed spinning positions across the globe. Also being unveiled at ITMA Asia 2016 are 'specialists' for semi-dull and trilobal bright **(WINGS FDY SD / WINGS FDY BR)** tailored to the specific requirements of customers. Other interesting variants are the flexible **WINGS FDY PLUS** and **WINGS FDY PLUS eco**.

The ASW is the successful automatic successor to the globally-deployed SW winder. Its specialty lies in the modernization of old POY systems. But this master of adaptation also caters to FDY and industrial yarn systems with its reliable and proven technology.

Its most important features: perfect package build for higher downstream speeds and an optimum success rate for automatic yarn transfer, ensuring a high level of production efficiency.

Special features are the groove roll-cam shaft traverse system, the individual inverter system and the counter-current string-up. There are no godets for the POY process needed and a doffer connection for further production automation is possible.

In May 2017, Jochen Adler, Vice-President and Chief Technology Officer at Oerlikon Textile GmbH & Co. KG, presented a new Oerlikon Barmag ASW602 take-up winder as a partial gift to Prof. Dr Thomas Gries, head of the Institut für Textiltechnik (ITA) at RWTH Aachen University. Due to this modernisation, ITA has access to a latest generation take-up winder which is used for various research projects. The new winder is applied at ITA's two pilot melt spinning plants and ensures the transfer of new research and development insights into the pilot scale. Furthermore, this winder has two winding positions and operates with winding speeds between 2500 m/min and 5500 m/min. The new winder is suitable for all kinds of polymers, from polypropylene to polyethylene, polyester, polyamide etc. as well as for the production of several types of yarn, such as industrial yarn, pre-oriented yarn and fully-drawn yarn. Yarn producers looking for a more compact solution to upgrade their industrial yarn plant should go for the **babyASW** or **WinTens**. These are the perfect choice when replacing manual or automatic winders within existing spinning plants.



Oerlikon Barmag WinFors © Oerlikon Barmag

The Oerlikon Barmag **WinFors** winder has been developed specifically for sensitive yarns. Its cam shaft guarantees excellent package build and stable edges for packages even in the case of the critical, high single dpf in mother yarn filaments. The precise and gentle yarn displacement of the cam shaft concept in conjunction with the tried-and-tested Oerlikon Barmag ribbon breaking process ensures that the downstream splitting process is carried out efficiently and without any loss of yarn quality.

The Oerlikon Barmag FDY mother yarn concept has been optimized for the typical monofilament thicknesses of 15, 20 and 30 dpf and the associated mother yarn types such as 180 den F12, 240 den F12 and 360 den F12.

Proven components are deployed: from the extrusion unit, the type SP8 spinning system with its special design and long quenching unit for high single filament titers all the way through to the FDY draw unit with 4 godets (PET) or with 5 godets (PA). At this year's 'K' plastics trade fair in Düsseldorf, Oerlikon Baarmag presented its new automatic **WinTape XXL** tape yarn winder for the very first time. This special winder for manufacturing baler twine supports the full potential of the EvoTape system. Its maximum speed for the baler twine process is 400 m/min, with an output of 1,000 kg/h.

The WinTape XXL fully-automatically winds packages with weights of up to 300 kg, with winding times of between one and two hours. In addition to this, the WinTape XXL comes with an innovative cutting concept for titers of up to 100,000 dtex. Furthermore, the fully-automatic operation and covers guarantee a high safety standard.

With this, the WinTape XXL tape yarn winder has created a new benchmark with regards to productivity and occupational safety when manufacturing baler twines. For texturing Oerlikon Barmag offers the **eAFK HQ** and names it a new dimension as well as the the world's most productive autodoff DTY machine for the high-end commodity market with a broad denier range (30 - 300den). The eAFK HQ is designed with 12 sections, each with 48 positions.

Compared to the eAFK machine an additional fourth level in the winding unit and extended sections increase the capacity of the machine to 576 positions – a world record! Furthermore, the new eAFK HQ simultaneously excels as a result of its extremely space-saving construction. With this, customers are able to texture their products on a machine with very small space requirements per position in the DTY market. At the same time, they benefit from the increase in productivity.

Conclusion

The solutions presented here clearly demonstrate the numerous advantages of the new generation of winding machines. In addition to increased productivity and energy savings, they offer countless minor improvements that enhance the quality of yarn and packages.

A crucial argument for investing in these machines is undoubtedly the high flexibility provided by the new solutions, enabling yarn producers to respond to changing trends in a swift, cost-efficient manner and offer products that are in line with market requirements at all times. Just as the volume of fibres is increasing, so is the demand for ever-changing combinations of fibres and for textiles that offer consumers added value based purely on the fibres from which they are made.

New technologies are changing the growing market for terry towel textiles

Photo © svittlana

Terry towelling is not just an extremely interesting textile used by every human being several times a day, but also a market segment featuring stable growth rates due to the fact that it accounts for a significant proportion of home textiles. Terry towelling products are becoming increasingly complex and are subject to ever-changing market trends and consumer expectations with respect to the quality and design of the fabrics. In recent years, new technologies such as electronic control and stepper motors have enabled weavers to produce countless new designs – a trend that is still going strong. With the help of the most innovative weavers, the manufacturers of weaving machines have optimised and further developed the technologies and offer numerous specialised weaving machines for terry towelling. Now it's up to the weavers and designers to make profitable use of these new technologies and produce terry towelling products that motivate customers across the globe to renew or supplement their bathroom textiles for a more up-to-date look. The aim is to make bathrooms that bit more special in future.

This has prompted us to take a closer look at the latest machines and possibilities. But first, let's take a brief look at the market.

BizVibe, a B2B marketplace, has published in an analyses that the home textiles sector is becoming one of the most lucrative business segments in the global textiles industry, thanks to the soaring demand for household textiles products across the world. Furthermore they say according to the Indian Texpreneurs Federation (ITF), the market size of global home textiles was valued at approximately USD 96 billion in 2016. The total retail value of the global home textiles sector is expected to reach USD 131.5 billion by 2020, registering a CAGR of 3.5%. A Textile Market Analyses done by GrandViewResearch in January 2017 offers slightly lower results. It estimates the global textiles market size was valued at USD 830.0 billion and household applications accounted for 9.6% (~ USD 80 billion) of the total volume in 2015.

Following the BizVibe analyses and some more sources, China, the US, and Europe are dominating the global home textiles market as the largest consumers, while Asian countries such as China, India, and Pakistan are some of the largest suppliers for the global home textiles market. India's home textiles industry was estimated at USD 4.9 billion in 2017 and is expected to expand at a CAGR of 8% to reach USD 5.29 billion by the end of 2018. Apart from being the top supplier for the US, the world's biggest home textile consuming market, India is also responsible for over 21% of the towels and 19% of bed linen in the global home textile market.

Growth drivers should be the soaring demand for home textile products from Asian markets such as China, India, South Korea and Indonesia, thanks to the boom in the housing market and a rapidly growing middle class. Furthermore market growth is expected cause of the increasing number of single family houses.

This brings us back to production. It is common knowledge that terry towelling can be produced on both weaving and warp-knitting machines. We have selected a few of these machines, restricting ourselves to the innovations and further developments of the market leaders since the ITMA 2015 in Milan.

Itema rapier weaving machines R9500terry

By launching the new the **R9500terry** the **ItemaGroup** demonstrated their credo of being faster than ever at churning out technological innovations. The time-to-market of new Itema weaving machines has dropped significantly from more than 24 months for previous models to less than 12 months. The new loom was presented in a series of events in July and September 2015 entitled “Weaving Terry Like Never Before” to a select panel of worldwide customers. Following this Itema presented the R9500terry first to a public audience at ITMA in Milan and the machine was also on stage – and was a real star of the show - at ITM 2016 and at ITMA Asia + CITME 2016.

Shortly before ITM 2016 Itema anoounced the new R9500terry has become an instant best-seller carrying on the rich heritage and reputation in terry weaving of historic Sulzer, Vamatex and now Itema brands.

The new Itema R9500terry has been developed to set a new benchmark in weaving terry, with the aim to provide the market with a weaving machine which finally combines utmost quality and versatility with efficiency and usability of the machine. What makes R9500terry an extraordinary weaving machine for terry weavers are three exclusive key factors.

R9500terry builds on the success of its predecessor Silver DT, the most popular rapier terry loom in recent years with more than 5.000 weaving machines running around the globe.

The machine’s sturdy structure and the advanced technology come from the Itema absolute best-seller, the rapier R9500, a market phenomenon now also for the benefit of terry weaving. And Itema’s cutting-edge R&D worked with the final goal to meet and exceed the exact requirements of Customers, both when it comes to current needs and future desires.

The beating heart of the R9500terry lies in its technological prowess. R9500’s unique features have been implemented on R9500terry to maximize efficiency, speed and reliability, such as the Turboprop—the exclusive rapier drive system, the Direct Drive Motor—a unique motor for easy operations and settings, and the innovative SK rapiers.

Itema rapier weaving machines R9500terry © Itema

The new Itema Rapier R9500 2.0 (available both for guided and free-flight applications) represents an ultimate solution in terms of weaving flexibility and covers the full range of weft types. Furthermore, it dramatically reduces weft stops, increase efficiency and boost productivity.

The textile quality is enhanced due to a winning trio of innovative devices: the new positive pile back-rest roller, the new pile formation unit and the new ground back-rest roller.

The Itema positive pile back rest roller, unique in the market, guarantees a significant optimization of the pile warp tension, drastically reducing the friction during cloth displacement. Driven by a single motor, the new pile formation unit ensures an easy pile height setting directly from the user interface, guaranteeing superior fabric quality due to the pick-per-pick loop adjustment and cloth displacement up to 28mm, leading to endless creative possibilities. The new ground back-rest roller, equipped with light weight cylinders and a load cell to control the tension, perfectly drives the yarn movement facilitating the shed formation. This innovative winning trio of advanced devices featured on the R9500terry provides unparalleled textile quality and utmost versatility.

As for R9500, the main drive of the R9500terry is based on an electronic drive and brushless motor technology which provides easy touch-screen adjustment of the machine speed. Traditional gearing and mechanical parts have been minimized, providing added value by fewer spare parts and maintenance. Simple, reliable, maintenance-free, with no cooling system required, the Direct Drive Motor ensures top performances over time and low cost operations.

New Weft Selector © Itema

New Temples Position © Itema

The innovative SK Weft Transfer © Itema

R9500terry inherits from R9500 also the powerful NCP – New Common Platform, the electronic system which allows easy control of all technical parameters of the weaving machine. The fully interactive color touch-screen console acts as an one-stop terminal to manage the full spectrum of the loom's functionalities. Standard on the terry weaving machine are the mechanical weft cutter or the ROTOCUT. Available as an option, the motorized weft cutter enables to produce the most refined and elegant terry cloth, allowing to weave a mix of different types of wefts and counts and enabling imagination and creativity. The New Weft Selector, available up to 12 colors, stands out for its compactness, ensuring an ideal position and a precise cutting of the weft.

Carlo Rogora, CEO of Itema Group, presented the R9500terry loom for the first time at a special event in July 2015 entitled "Weaving Terry Like Never Before" © TexData International

For shedding weavers can choose between Electronic Jacquard and Stäubli electronic dobby (up to 20 frames). The machine is available in 10 different sizes between a nominal width of 190 cm and 380 cm.

If your target is an advanced, innovative, highly reliable terry weaving machine ready to unleash your designers' talent and creativity, the R9500terry is the right choice for your weaving mill.

Karl Mayer terry warp knitting machine TM 4 TS EL

Following a gap in what was available in its portfolio, **KARL MAYER** has launched onto the market a terry warp knitting machine for processing cotton at Shanghaitex 2015. This new machine, known as the **TM 4 TS EL**, can produce a wide variety of terry goods and offers a unique level of productivity. More especially, by using a modern EL drive system instead of the old mechanical system, the speed of the TM 4 TS EL has been increased by about 30% compared to the old KS 4 FBZ when producing hand towels with borders. Furthermore, increasing the working width of 136" to 186" has increased output by up to 36%.

Karl Mayer terry warp knitting machine TM 4 TS EL © KARL MAYER

Equipped with an electronic pattern drive, the TM 4 TS EL can achieve its full potential when producing hand and bath towels especially, i.e. webs with long repeats, smooth ends to the borders and cutting edges. The EL system also enables the pattern to be changed quickly – offering real advantages over the previous machine in terms of flexibility and handling. A six-track pattern drive with pattern discs and a counter for working the lapping was used on the previous machine.

In September 2017 Karl Mayer announced that they are perfecting their technology for producing warp-knitted terry fabrics all the time. In order to exploit the potential of its TM 4 TS EL terry tricot machine fully, this innovative manufacturer developed a collection of bath towels featuring long repeats, hems and borders at the end of last year and is now carrying out a second series of tests.

The aim of the recent work is to produce heavyweight fabrics, especially for the hotel sector. Soft, fluffy fabrics having the typical loop strength of warp-knitted fabrics, and consequently their high wash resistance, are mainly used at the premium end of the hotel market.

The TM 4 TS EL at KARL MAYER was threaded with thick yarns in order to meet the appropriate requirements. “We used OE-spun cotton yarns having a count of Ne 12/1 in ground guide bars, GB 1 and GB 4. Cotton yarns in this count have never been processed on tricot machines before,” says Christiane Litterst, a product developer in textile technology. The lowest count recommended previously was Ne 16. Despite this, no problems were encountered during the warp knitting process. “Even at a speed of 800 min-1, fly formation was not an issue with the type of pattern and yarns selected,” Christiane Litterst confirmed. To work the ground, cotton of Ne 16/1 was used in GB 3 and polyester of 100 den was used in GB 2.

No changes had to be made to the finishing sequences either. The fabric produced weighs 600 g/m², has a fluffy handle, and is extremely absorbent. The EL pattern drive of the TM 4 TS EL enables loop-free stripes to be worked to produce the pattern, and the fabric edges are worked directly during the process.

This universal terry tricot machine also enables different loop heights to be worked in the same article, and very lightweight fabrics of the highest quality can also be produced. Even those warp-knitted terry fabrics weighing 200 g/m² have an attractive and extremely stable construction.

Picanol rapier weaving machine TerryMax-i

Picanol introduced its new **TerryMax-i rapier** weaving machine for terry cloth at an inhouse show in September 2015 and presented it to the public together with the new **TERRYplus Summum** (airjet) weaving machine at the ITMA 2015. Both of them have been developed especially for terry cloth. This makes Picanol the only provider on the market that offers both airjet and rapier terry machines.

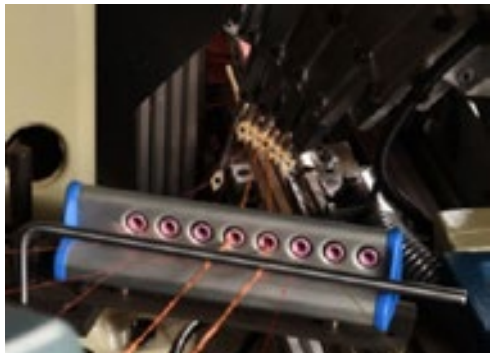
The TerryMax-i offers full flexibility in design. The pre-beat-up is independently driven by the pile height motor, and all settings are electronically set on the microprocessor. The pile height changing device makes it possible not only to change the group beat-up rate, but also to weave structured patterns such as waves. The oil-cooled Sumo main motor drives the weaving machine directly, without belt or clutch and brake. The combination of the highly energy-efficient Sumo motor with the direct drive (patented) for main shaft and shedding motion results in power savings of more than 10% in comparison with conventional clutch and brake configurations.

The fabric quality is guaranteed by the stability of the unique pile formation. The cloth movement is driven simultaneously with the backrest movement (patented) and is directly driven from both sides by a torsion-free shaft without mechanical settings or additional transmissions (patented).

The ultra-light compensation rollers in combination with the robust structure ensure that the pile is formed smoothly, with a completely even pile height (patented). The fabric quality is further ensured by the minimal distance between cloth formation and take-up and by the constant yarn tension. The pile height monitoring gives continuous feedback on the woven pile height. The tension is automatically released at stop, and automatically re-tensioned again to the required tension at start, ensuring correct pile height even after a stop.

Picanol rapier weaving machine TerryMax-i

Active Filling Tensioner © Picanol



Prewinder Switch-Off (PSO) © Picanol

Electronic Setting of Shed Crossing (AKM) © Picanol

The TerryMax-i machine is unusually low at the front. Pushbuttons with metal dome technology are conveniently located and have optical command confirmation. All main settings are carried out above the fabric line, providing perfect accessibility for weavers and operators. All machine functions are controlled by the microprocessor. Mechanical settings have wherever possible been replaced with digital ones.

Each prewinder can be equipped with a Programmable TEC Filling Tensioner (patented). Tension control makes it possible to weave weak yarns at even higher speeds. The Electronic Disc Cutter (EDC) cuts every filling yarn always at the right moment, while clamping the filling. The unique full leno selvedge motions are electronically driven by individual stepper motors. They are mounted in front of the harnesses, so that all harnesses remain available for fabric pattern formation. There are a lot of more advantages like prewinder switch-off (pso), electronic setting of shed crossing (akm), automatic full pickfinding, shed angle indicators, width adjustments in a minimum of time, optimized shed geometry and a rigid construction. Furthermore for very demanding applications a lot of options are available like the Electronic Filling Tensioner (EFT) (patented) or a mechanical filling cutter.

The TerryMax-i can be fitted with electronic positive dobby or electronically driven jacquard. The basic machine structure for dobby and jacquard versions is identical, making it possible to change the shed formation system at any time in the future.

If versatile and productive terry weaving is your objective, now you can be sure of real added value with the unique, futureoriented TerryMax-i. Based on the same high-performance weaving technology as the OptiMax-i, the TerryMax-i offers all the possibilities for growing to the top in your market.

Picanol TerryMax-i at ITM 2016 in Istanbul
© TexData International

Stäubli SX Jacquard machine

In the sector of Jacquard machines for weaving terry fabrics **Stäubli** introduced the **SX** and **LX / LXL Jacquard** machines at ITMA in Milan. The LX / LXL Jacquard machines are built with uncompromising high-quality materials and designed to perform with utmost precision at very high speeds. Furthermore they are very robust, wear-resistant, and designed for many years of daily use with a minimum of maintenance. The LX is available with 3072, 4096, 5120 and 6144 hooks. It is quick and easy to install and also suitable for very heavy fabrics. The low friction engineering reduces energy consumption. The LX offers an optimum sealing and ventilation to prevent dust penetration and for maximum lifespan, a precise kinematics with no vibration and a safe, straightforward access to make machine adjustments.

Stäubli SX Jacquard machine © Stäubli

The LX / LXL Jacquard machines produce excellent results in nearly all applications including terry cloth. Also the SX Jacquard machines are very robust, wear-resistant, and designed for many years of daily use with a minimum of maintenance. Due to their compactness these machines can easily be integrated in any weaving mill. The SX Jacquard machines are available in two formats: 1408 or 2688 hooks.

Bonas ‘Ji’ Range

After the successful introduction of the Si Jacquard machine in 2013, **Bonas** introduced the ‘Ji’ Range during ITMA Asia 2016. The ‘Ji’ is designed in Europe with the focus on the Chinese market. It is available in formats from 1920 hooks till 5760 hooks and is a very compact machine.

Bonas Ji Jacquard © Bonas

Santex Rimar SMIT brand Terry Jaquard loom GS940 F

The **SMIT GS940F** is already much longer on the market, with the F in the series stands for terry. We would like to include them, as SMIT has changed a lot in recent years and the company has had difficulties to deliver on time. Since April 2016, however, SMIT belongs to the **Santex Rimar Group** and has thus again taken a great deal of drive.

Santex Rimar presented under SMIT brand Terry Jaquard loom GS940 F for superior terry towels productions a ITMA Asia 2016.

Santex Rimar SMIT brand Terry Jaquard loom GS940 F © Santex

Smit at ITMA Asia 2016
© TexData International

GS940F rugged structure and stiff drive mechanisms ensure high productivity and operational stability also in Jacquard arrangement. The freely programmable pile height and pick ratio, with loose pick distance up to 24 mm, allow to create unique relief patterns and pile waveforms. The GS940F is equipped with Smit Dynamic Pile Control which is the distinguishing system of pile formation by sley different motion, securing the most gentle treatment of warp yarns for a superior terry fabric. The GS940F is equipped with the well-known Smit gripper system and an electronic weft selector.

Interesting features are the PTE – Pile Tension Equalizer, Lenomat, a control terminal with graphic display, the Free Flight Ribbons System, an ppen communication architecture for data import/export and Tuck-in Units. The functionality and ergonomics of the Smit GS940F are the qualities that strike you at first glance and the textile geometries of the machine create the ideal conditions for working with warps made with any type of yarn.

Conclusion

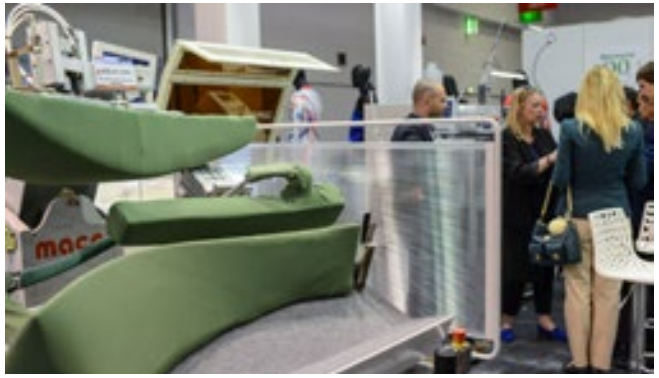
So much for our overview of present-day machines for the production of terry towelling. The machines described here feature high productivity and flexibility and above all the capacity to meet the demands of the individual markets in terms of quality and design variety. For weaving companies – particularly those seeking to maintain their market position or grow with the market in the premium segments of the lucrative European, North American and Asian markets – they offer excellent opportunities for safeguarding investments through technical advantage.

And it goes without saying that all weaving companies operating in the terry towelling segment need to look into the technical possibilities offered by these machines because, as in the case of all consumer goods, discounters and low-price vendors are increasingly seeking to entice customers with new and improved products. This can soon lead to previously popular standard goods being left on the shelves.

Digitalisation gives Texprocess new impetus

Creativity meets high-tech – a few words that perfectly sum up the atmosphere at this year's Texprocess from 9 to 12 May. 312 exhibitors from 35 countries (2015: 273 from 33 countries) presented their latest developments for processing textile and flexible materials to 13,718 visitors from 109 nations (2015: 13,335 from 94 countries). With 14 percent more exhibitors and 2.9 growth on the visitor side, this was the biggest ever Texprocess.

High Speed Tubular Embroidery Machine © Messe Frankfurt



Edge and Lapel Pressing Machine © Messe Frankfurt

Bridge Type High Speed Embroidery Machine © Messe Frankfurt

"The innovative power of the textile-processing industry is impressive. At Texprocess, trade visitors can find high-performance machines and technologies for all stages of textile production, from computer-aided design to recycling. Here, trade visitors can discover how the increasing digitalisation level has boosted the degree of interaction between people and machines, and the level on which machines are linked to each other", says so Detlef Braun, Member of the Executive Board of Messe Frankfurt.

Large increase in the number of visitors from the concurrent Techtextil

The combination of Techtextil and Texprocess has proven beneficial on both the exhibitor and visitor sides. A total of 7,091 visitors from the concurrent Texprocess (2015: 5,500) also attended Techtextil. At the same time, 11.399 Techtextil visitors (2015: 7,600) went to see the range of products and services at Texprocess. For its part, the Leading International Trade Fair for Processing Textile and Flexible Materials attracted 312 exhibitors from 35 nations and 13,718 visitors from 109 countries. Together, the two fairs welcomed 1,789 exhibitors from 66 countries (2015: 1,662 from 54 countries) and over 47,500 visitors from 114 nations (up around 14 percent, 2015: approx. 42,000 from 116 countries).

The increase in the number of visitors to Texprocess came primarily from Europe. After Germany, the best represented visitor nations were Italy, Romania, Portugal, Turkey and Poland.

There were increases in visitor numbers especially from Russia, the Ukraine, India, South Africa, Pakistan, Sweden and Japan. On average, visitors spent longer at this year's Texprocess than at the previous edition of the fair. In 2015, around 50 percent spent a day at the fair. This year, almost 65 percent of visitors remained in Frankfurt for two days or longer.

Range of products and services in line with the interests of many different users

The exhibitors at Texprocess represented all stages of the textile production chain, from IT-aided design, via cutting and joining technologies, to finishing, textile logistics and recycling, and were thus able to reach not only the garment-manufacturing industry but also the leather-goods industry, furniture manufacturers and the automobile sector. Confirming this, **Holger Labes, CEO of Vetron** said, "We had visitors from many different sectors, including the automobile and garment-manufacturing sectors."

Growth on the exhibitor side came mainly from Turkey (+10) and Italy (+9), as well as from China (+9) and Japan (+4). China, Japan and Taiwan were also represented by their own national pavilions at Texprocess. Altogether, 204 international companies (2015: 161) and 108 from Germany (2015: 112) made presentations at the fair.

Digitalisation as a driving force for innovation

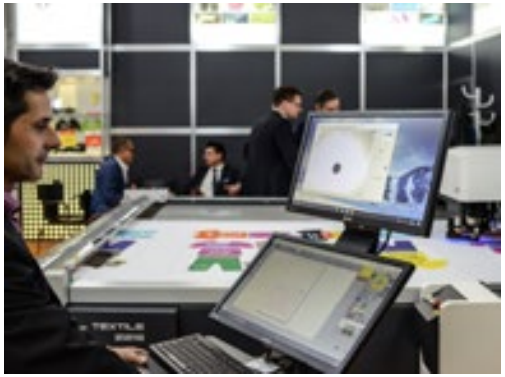
"Industry 4.0, digitalisation, digital printing and smart textiles are just some of the buzzwords currently driving the sector", said Elgar Straub, Managing Director of VDMA Textile Care, Fabric and Leather Technologies, the conceptual partner of Texprocess. "All stages along the textile processing chain are IT-controlled."

The art of the buzzword is, however, quite varied. While digital printing is an example of a market-ready solution, Industry 4.0 describes a holistic solution in the form of a new, digital and fully-automated industrial revolution, and to date achieving this vision is still a long way off. For the time being, the term digitalisation appears to describe the current state of affairs more accurately, since it captures one part of the overall process that is already being implemented today and will at any rate be integrable in terms of its design approach at a later stage.

In our article on Industry 4.0, we made particular reference to the approaching bottleneck in the realisation of Industry 4.0 solutions, and wanted to use the Texprocess trade fair in order to inspect the state of technology in research or even in market-ready solutions.

Programmable Electronic Pattern Sewer DD © Messe Frankfurt

Collarette Cutting Machine © Messe Frankfurt



Laser System for textile roll cutting and marking © Messe Frankfurt

One company offering such solutions is **Softwear Automation** from Atlanta, Georgia in the USA. It is SoftWear Automation' s vision to disrupting the $100 billion sewn products industry by creating autonomous sewn good worklines for Home Goods, Footwear & Apparel. The Atlanta-based machine vision and robotics startup spun out of Georgia Tech after 7 years of research and development working on projects with DARPA and the WALMART Foundation.

At Texprocess the company took the opportunity and informed European textile people about their solutions. Unfortunately they didn' t presented their sewbots.

Softwear Automation booth © TexData International

It would have been interesting to experience the technology, because there is still a lot of skepticism in the market. People love to see machines in a working mode and want to examine whether the fully automatic sewing of T-shirts works. On the other hand, Softwear Automation was able to close a great deal in August 2017.

The company announced their premier customer partnership with TianYuan Garments Company of Suzhou to produce T-shirts in the USA using their fully automated Sewbot workline. TianYuan Garments Company of Suzhou will make 800,000 T-shirts a day for Adidas on the new production lines.

The system is scheduled to be fully operational by the end of next year. TianYuan Garments will install 21 production lines. When fully operational, the system should make one T-shirt every 22 seconds and with complete automation, the personnel cost for each T-shirt hould be roughly 33 cents.

Moreover COO Peter Santora has joined the Gerber Technology panel discussion about digitisation and talked about his #sewbots and automation.

Another market leading company in the sector of automatic sewing robots is **KSL**. On a joint stand **PFAFF Industriesysteme und Maschinen** with **Beisler** and KSL together with **Dürkopp Adler** showcased 110 industrial sewing and welding solutions. Highlight was a joint innovation by KSL and Dürkopp Adler. They presented a robotic sewing unit which produces shirt cuffs fully automatically in a reproducible top quality for highest demands. The new sewing unit for topstitching of cuffs works without an operator. The workpiece is transported by a robot. It takes runstitched and ironed cuffs out of a magazine and feeds them into the sewing unit with precisely aligned edges via a camera programming tool. If the optical sensors indicate that a cuff is not positioned accurately, this is corrected automatically.

Thanks to a new material clamp technology design changes can be realized easily. Another shown unit has been the multi-needle sewing unit class 950 eco, also a joint development of KSL and Dürkopp Adler. It is used for the cost-effective stitching through light-weight textiles – single cuts or material on reels – with multiple sewing tools in one operation, e.g. in the production of car seats. The needle distance is variable between 6 and 600 mm, the maximum fabric clearance is 1,200 mm. Furthermore KSL presented the freely programmable CNC sewing unit class 311 with rotary head for the servo motor-controlled sewing of safety seams, functional seams and decorative seams. Due to the sewing head tangentially aligned in any sewing direction it is possible to realize demanding seams of highest quality level – with up to 2,800 stitches per minute.

The sewing head rotatable by 360° is always tangentially directed while sewing so that loop stitches are avoided.

KSL sewing robot © TexData International

It is to be expected that software companies working on the digitalisation of processes have a considerable advantage, and are thus in the position both to offer solutions and operate in an advisory role. At the fair, visitors could not only get a glimpse of the future, but were also introduced to market-ready solutions for the commercial here-and-now, which already help to shorten process times and reduce costs.

Human Solutions presented on a large booth a lot of innovations and offered Vidya work places © TexData International

The interest of trade visitors in computer-aided technologies for design, fit optimisation, pattern production, automatic cutting and labelling almost doubled in comparison to the last edition of the fair, from 14 to 26 percent. “We enlarged our stand team shortly before Texprocess began, simply to be able to cope with all the appointments made during the run-up to the fair. In addition, we welcomed numerous high-grade potential customers during the fair itself”, said Dr **Andreas Seidl**, Managing Partner of **Human Solutions**.

Human Solutions, based in Kaiserslautern, has been shaping product development in the automotive and apparel industries for 15 years now and presented their novelities under the motto “Digital is now!”. “We have developed our solutions for the Texprocess to such an extent that the entire product development process chain is now digitally possible,” said Dr. Andreas Seidl. “In our booth rooms, visitors experienced how our solutions can be integrated into a perfect interactive process and how they can reduce their time to market significantly.” Three rooms in the booth bundled the different process steps into different topics.

In the Digital Design Room, visitors saw how the ideal prototype can be completely designed, tested and approved –digitally. In the Digital Production Room they demonstrated how to create the production technology prerequisites for more individual offers. There, the VITUSbodyscan body scanner was also installed. Visitors could have themselves accurately measured and a realistic, color image of the scanned person was created in just a few seconds.

In the Digital Show Room, several product variants and sizes were available and more information could be found digitally. This scenario has been played out with real clothing. The garments were equipped with a QR code that visitors were able to hold up to the Digital Fashionboard. A Webshop with the selected product then opened on the board, also displaying variants of the garment in different colors and patterns. The Virtual Mirror enables the on-the-spot determination of the right size and the virtual try-on; the Bodyprofiler and Vidya perform these functions in the Webshop. An avatar of the exhibition visitor then tried on the garment virtually. The collection can also be staged on the Digital Fashionboard, for example, by showcasing a fashion show, matching accessoires and providing atmospheric music.

One particular highlight in the Digital Showroom was the Virtual Reality Room, where visitors saw how digitization virtually brings partners in different locations together. In this room, 'Digital is now' means 'put on your virtual reality glasses and coordinate a fully-networked, 360-degree collection with partners all over the world.'

One Human Solutions highlight was the ‚Digital Fashionboard' © TexData International

Moreover Human Solutions celebrated the Assyst Vidya Award for young designers at the fair and the winners received their awards. The task this year was to develop a design for workwear with the 3D simulation software Vidya and then to sew the real garment. First place and prize money of €1,000 went to Jana Hofmann from the Bremen Technical University of Arts.

Christina Blum from the Niederrhein University of Applied Sciences took second place with prize money of €500. There were around 52 applications for the Vidya Award 2017 – more than ever before.

"The skill level of the submitted work has increased significantly – this shows that working with 3D simulations has indeed arrived in our schools and colleges and is increasingly becoming a matter of course for the students", says jury member Prof. Dr. Michael Ernst from the Niederrhein University of Applied Sciences.

For the first time, Texprocess concentrated the joining and cutting technology product groups, CMT (Cutting, Making, Trimming), CAD/CAM and printing in a single exhibition hall and the Techtextil exhibitors from this segment presented their technologies at Texprocess. These product groups were removed from the Techtextil nomenclature. With 49 percent, design, CAD/CAM and cutting ranked among the most popular product groups.

The software packages of the CAD/CAM suppliers at Texprocess covered a broad spectrum of solutions from modular components to an all-embracing PLM solution with maintenance and repair by remote control and automated replacement and wearing-part ordering. For example, Kuris Spezialmaschinen GmbH showed a new generation of high-ply cutters and a fully automatic labelling unit, as well as an up-dated single-ply cutter series for cutting textiles, foils, leather, plastics, prepegs, glass, carbon fibre and honeycomb materials.

Gerber Technology focused on holistic and personalised concepts for customers' individual production environments and, in addition to its PLM systems, launched its consulting programme for implementing digitalisation strategies in the textile-processing industry.

Gerber came to the fair with the message, the digital revolution is here and presented cutting-edge digital design tools which will help garment manufacturers cut costs by millions of dollars, increase throughput, reduce waste, and – most importantly – stay competitive in the age of "fast fashion." In detail Gerber showcased its Digital Solutions including the newest releases of YuniquePLM® product lifecycle management software, as well as AccuMark® the industry-leading pattern design, grading, marker making and production planning software, AccuMark 3D and AccuPlan™.

Since Gerber's Digital Solutions architecture uses common file structures, data can easily be passed to the cut room, where smart machines, like the GERBERspreader™ XLs series and Gerber Paragon® line of multi-ply GERBERcutters®, can process the order with a simple barcode scan. A closed-loop, end-to-end Digital Solution like Gerber's, that integrates software and smart machines, allows companies to automate their entire process and streamline data and workflow necessary to provide insight, maximize throughput, minimize errors and reduce labor costs to be competitive in mass production environments.

Gerber Technology preseneted latest solutions for digitalisation including cutters and software. The new CEO Mohit Uberoi welcomend the guests © TexData International

Furthermore Gerber demonstrated to industry leaders how easy it can be to connect systems, allowing data to flow seamlessly from design and development all the way through their supply chain, leveraging software and IoT technologies to enhance visibility and efficiency. To accompany and consult individual transformation processes at the single user is Gerber's defined objective here.

One big thing to save costs for example is sampling. Annually, $6-8 b is spent on samples and 75% of those can be handled digitally at a fraction of the cost, Gerber announced.

At a press conference with panel discussion the new Gerber CEO, Mohit Uberoi, introduced himself to the adudience. „It is a great opportunity to start a new job at Texprocess. I appretiate!“ he said and pointed out the importance of digital transformation.

In the panel discussion Michel Byvoet from Bivolino, Michael Ernst from the Hochschule Niederrhein, Peter Santora and Karsten Newbury, Vice President from Gerber discussed digitalisation and industry 4.0 topics. Karsten Newbury said ‘most important thing is to create value by using the digital possibilities’.

And Michael Ernst stated: ”The solutions for the digital transformation are already around and change is for today, not tomorrow. Nobody can expect, any longer, to be successful in the long term with a traditional production line.”

Panel discussion at the Gerber Technology booth © TexData International

Texprocess Innovation Award

The winning products of the Texprocess Innovation Award also made use of digitalisation: Coloreel from Sweden won with a technology that makes it possible to dye the white base thread during the embroidery process. Japan’s Juki company presented the world’s first sewing machine for which, inter alia, thread tension and stitch length can be adjusted and stored via a touchscreen on the machine or via a special app. Industrial-sewing machine specialist Xi’an Typical Europe showed a new technology that permits pedal-less sewing. The Bielefeld-based Dürkopp Adler company presented an online monitoring system for industrial production.

Individual and customer oriented: The Digital Textile Micro Factory demonstrated a textile production chain live © Messe Frankfurt

Award ceremony of the Texprocess Award
© TexData International

Texprocess Innovation Award – new technology Vetron Trace, sensor based technology
© Messe Frankfurt

Production of the future in the Digital Textile Micro Factory

For the first time, Texprocess demonstrated integrated garment-production live with the 'Digital Textile Micro Factory'. Organised by Texprocess in cooperation with the German Institutes for Textile und Fibre Research, Denkendorf, and renowned companies from the textile sector, the micro factory presented the complete production of garments – from design, via digital printing, to automatic cutting and making up. A marked route guided trade visitors through the various stages, from CAD / design, via printing, cutting and making-up, to labelling. The micro factory was supported by VDMA Textile Care, Fabric and Leather Technologies.

Complementary programme of events and highly successful special exhibition

Besides the thematic focus on digital printing, the WTiN information service organised European Digital Textile Conference for the first time in cooperation with Texprocess and Techtextil. In addition to decorating fabrics, digital textile printing is used to functionalise textiles with dirt-repellent, anti-microbial and fire-proof properties.

European Digital Textile Conference © Messe Frankfurt

Texprocess Forum © Messe Frankfurt

Living in Space © Messe Frankfurt

A significant increase in the number of visitors was also recorded at Texprocess Forum and, in the case of the lectures on digitalisation solutions for the garment-manufacturing industry, fit optimisation in the online age and Industry 4.0, several visitors had to stand because all seats were taken.

Moreover, exhibitors and visitors profited from the 'Living in Space' exhibition at Techtextil, which was organised in cooperation with the European Space Agency (ESA) and the German Aerospace Centre (Deutsches Zentrum für Luft- und Raumfahrt – DLR) and showed the variety of applications for technical textiles and illustrated their processing by reference to space travel.

Conclusion

Overall, Texprocess was a very impressive event, especially with regard to the multitude of solutions for digitalising and automating processes. The individual digitalisation solutions that were presented are sophisticated and convincing. The principal problem has not yet been satisfactorily resolved, which is that the process of sewing clothes cannot yet be automated, with the result that the entire production chain has reached a bottleneck. Indeed, there are a number of interesting approaches and solutions to this problem, but there remains a question mark over the scope in which these solutions are available.

With the exception of small quantities, it is likely that clothes will continue to be sewn by hand. As a consequence, sewing will continue to be prevalent in low-wage countries, and fully automated manufacture as envisaged in Industry 4.0 will remain a vision rather than reality.

On the other hand, it is impossible for companies to sit out such radical upheavals and to wait for the 100% solution, as they would fail to keep up and would not be able to gain experience in their own right. What is required is systematically to dismantle the supply chain and to digitalise and automate those processes where it is already possible to do so. One such area would be in patterns. For solutions implemented by market leaders, it should be possible to initiate a successive roll-out of the solution by supporting standards.

It would also be necessary to develop scenarios that would allow the state of technology to be tested right through the marketing stage and even as far as the customer. There are intensive and exciting times ahead of the textile industry, and we are already looking forward to the next Texprocess trade fair, which will take place in Frankfurt from 14th to 17th May 2019.

Professor Chokri Cherif is awarded the Tunisian Cross of Merit

Under the patronage of the President of Tunisia, Beji Caid Essebsi, the Day of Science was celebrated in Carthage (Tunis) on 21 July 2017. In the course of the event, the distinguished scientist from Dresden, Professor Dr. Ing. habil. Dipl.-Wirt. Ing. Chokri Cherif, was presented with the Tunisian Cross of Merit by the President of Tunisia. This was the first time that the accolade had been awarded to a Tunisian citizen living overseas.

Professor Cherif originally came to RWTH Aachen University in 1985 on a government scholarship to study mechanical engineering. In 1993, he received an award from the then president, Zine El-Abidine Ben Ali, for being the best Tunisian graduate in any overseas country, beating other excellent candidates from the USA, Canada, France and elsewhere. In 1995, Chokri Cherif completed a further course in economics, graduated with a doctorate in 1998 and qualified as a professor in 2001. Between 2001 and 2005, he held management posts at the Ingolstadt site of a Swiss corporation. In 2005, Professor Cherif was appointed to the Technical University of Dresden (Technische Universität Dresden) as Professor of Textile Technology and Head of the Institute for Textile Machinery and High-Performance Material Technology (Institut für Textilmaschinen und Textile Hochleistungswerkstofftechnik – ITM). Over the past 12 years, Professor Cherif has succeeded in making the ITM an exceptionally successful institute which currently employs a staff of 240.

His responsibilities include over 1,500 publications, 230 patents and 72 national and international awards.

Professor Dr. Chokri Cherif with the President of Tunisia, Beji Caid Essebsi, after being presented with the Tunisian Cross of Merit. © ITM TU Dresden

Aachen-Dresden-Denkendorf International Textile Conference 2017 to take place in Stuttgart for the first time

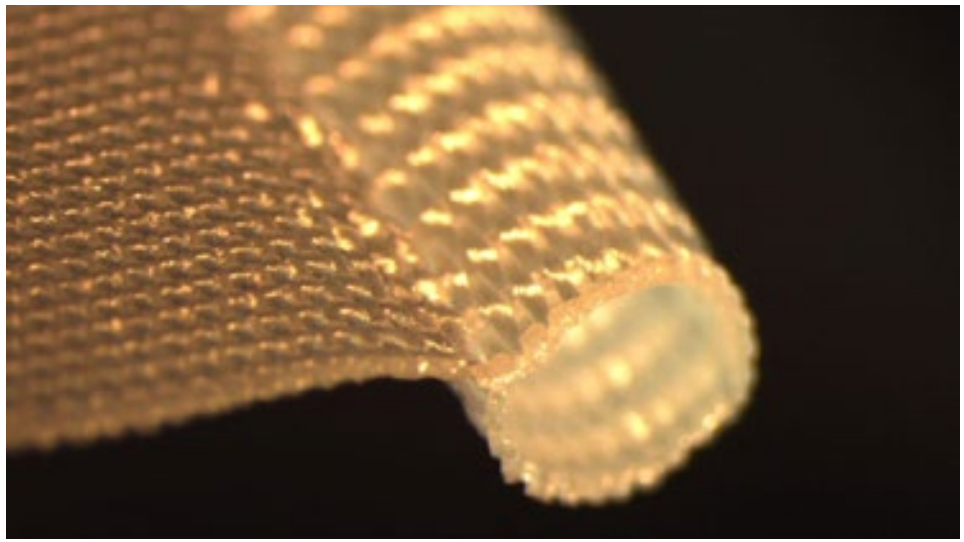
The Aachen-Dresden-Denkendorf International Textile Conference, one of the most important textile conferences in Europe, will be taking place in Stuttgart for the first time from 30 November to 1 December 2017. The conference venue is the conveniently located congress centre in Liederhalle. Since 2016, the German Institutes for Textile and Fibre Research Denkendorf (Deutsche Institute für Textil- und Faserforschung – DITF) along with the ITM in Dresden and the DWI Institute for Interactive Materials in Aachen have been among the co-organisers of the conference. This "southerly expansion" is an important step towards consolidating the German conference landscape.

The two-day programme, including talks by scientists and industrialists, is intended for professionals from the fields of material science, chemistry, finishing & functionalisation as well as machinery, processes & composites. There will be an extensive exhibition of scientific posters, and numerous companies and institutes will be hosting information stands about their activities in the foyer exhibition. All talks will be translated from English into German and vice versa. This year's partner country, the USA, will be represented by high-profile speakers and a wide range of scientific posters.

DITF and NEOS decorated with the EUREKA Innovation Award

The NEOS staff together with Professor Doser (DITF) at the award ceremony in Madrid (photo: CDTI)

MADRID: Herniated vertebral discs are usually very painful and difficult to cure. A new implant, drafted by the Spanish company NEOS Surgery and developed together with DITF Denkendorf, follows a new concept to close the fracture in the disc from inside with an 'umbrella'. For this novel medical device NEOS and DITF received on June 30th, 2017 the EUREKA Innovation Award in the category "Innovators of Tomorrow".



Woven closure device for herniated discs with mounting element (photo: DITF)

Accurate description of fibre composites for the automobile and aviation industries

Fibre composites make vehicles lighter, thus saving energy. However, they are not as widely used as they could be from a technical point of view. It is not only the price that plays an important role in achieving widespread use, but also the existence of reliable, accurate material parameters that allow components to be made to precise specifications. So far, there are no such parameters for reinforcement textiles.

The German Institutes for Textile and Fibre Research Denkendorf (DITF) are in the process of developing material parameters for fibre composites that meet the demands of the automobile, aviation and aerospace industries. The research project is being funded by the Ministry for Economic Affairs, Labour and Housing Construction (Ministerium für Wirtschaft, Arbeit und Wohnungsbau) of the regional state of Baden-Württemberg.

Each fiber material and matrix are presented in a detailed manner by material physics and are recorded in material cards. These cards are available to trade professionals via an information portal.

Lightweight textile construction elements “3DTEX”

Fascination with textile technologies and their architectural applications provided the inspiration and starting point for the 3DTEX research project, which has generated new ideas for foam-filled textile construction elements. There seem to be almost endless possibilities when it comes to arranging and layering the fibres of various different materials and foam-filling the cavities with materials of a similar type. When combined with each other, multi-layer spacer textiles have proved suitable for all manner of building envelopes and wall elements.

In cooperation with the Frankfurt Research Institute at Frankfurt University of Applied Sciences (FFin), the German Institutes for Textile and Fibre Research (DITF) have developed construction concepts based on spacer textiles for multi-layer textile building envelopes made from lightweight wall elements.

The aim of the project, which was funded by the research initiative ZukunftBAU, was to develop additively fabricated multi-shell timber frame construction elements as an alternative to conventional single-shell lightweight wall elements such as sandwich panels. The resulting elements, produced by means of an integrated industrial process including everything from the manufacture of the textile structure to foam filling, were expected to feature maximum mechanical and physical functionality.

Initial tests show that the combination of textile fibres and foam produces better mechanical values than the individual components.

7 February 2018 – Denkendorf Innovation Day

The German Institutes for Textile and Fibre Research (DITF) intend to host an Innovation Day, aimed at providing a forum for discussion and stimulating textile product developments and new manufacturing techniques. In the course of talks about current research projects and a tour of the testing facility and laboratories, the DITF scientists will be informing visitors about a broad spectrum of topics, ranging from molecules to materials and raw materials to finished products. They will be providing an insight into their work and promoting the transfer of knowledge and research.

Opening of the test laboratory for smart textiles

On 22 September, the Institute for Special Textiles and Flexible Materials (Institut für Spezialtextilien und flexible Materialien – TITV) in Greiz opened the first test laboratory for smart textiles to mark the “TITV Innovation & Open Day” attended by over 250 trade visitors and interested private individuals. As confirmed by numerous visitors, “the new test laboratory for smart textiles was the highlight of an interesting and varied day”.

The test laboratory was officially opened for business in the presence of Dr. Ute Zopf, Head of the Institutional Research Division of the Thuringian Ministry for Economic Affairs, Science and Digital Society (Thüringer Ministerium für Wirtschaft, Wissenschaft und Digitale Gesellschaft), along with further guests of honour.

New duo at the helm of the Thuringian Institute for Textiles and Synthetics Research (Thüringisches Institut für Textil- und Kunststoff-Forschung –TITK)

New duo at the helm of the Thuringian Institute for Textiles and Synthetics Research (Thüringisches Institut für Textil- und Kunststoff-Forschung –TITK)

On 1 July 2017, Dr. Ralf-Uwe Bauer and Benjamin Redlingshöfer jointly took over the helm of the material research institute in Rudolstadt. Given the complex fields of work and new growth areas, it is hoped that this extra management manpower will help strengthen the TITK Group.

The new duo at the helm of the TITK: Benjamin Redlingshöfer (left), Dr. Ralf-Uwe Bauer (right) © TITK

Less airstream pollution in flame lamination plants

Scientists from the Textile Research Institute of Saxony (Sächsisches Textilforschungsinstitut) have succeeded in developing a technique for extracting and separating hazardous air particles in workplaces that cannot be encapsulated.

The joint project was based on the example of two problem cases. It included an investigation into emission levels in flame lamination plants (in the textile industry). Based on the emissions recorded, it was possible to derive techniques for optimising the shape of the air suction components and controlling volumetric flow and to test these techniques in practice.

Producing lyocell fibres suitable for textile processing from annual plant pulp

Within the framework of a research project, an attempt has been made to develop a continuous process line for the production of suitable bast fibre grades from controlled, organically cultivated bast plant pulp. The process line included everything from the provision of raw materials in appropriate form and quality to finished samples of clothing worn close to the skin (underwear).

The prescribed DP range and targeted alpha-cellulose content were achieved in both pulps tested. In a spinning test, it proved possible to turn the thermally stable spinning solution into fibres with acceptable physical textile properties even when scaled up by a ratio of 1:10. The fibre parameters – 1.7 dtex / 38 mm (Type B), an ultimate tensile strength of 42 cN/tex or 13% elongation – were comparable to those of standard reference materials. Following dissolution of the fibres and formation of sliver and rovings, a series of tests was carried out on the ring spinning tester. Here it proved possible to produce ring-spun yarns with yarn counts of up to 10 tex (Nm 100/1). In the subsequent production trial, two post-treated yarns with yarn counts of Nm 50/1 and Nm 100/1 were produced for use in the knitting facility. When fed into the large-diameter circular knitting machine, both yarns produced close-knit single jersey fabric, which was then finish-treated. For demonstration purposes, nightwear similar to the reference samples was produced.

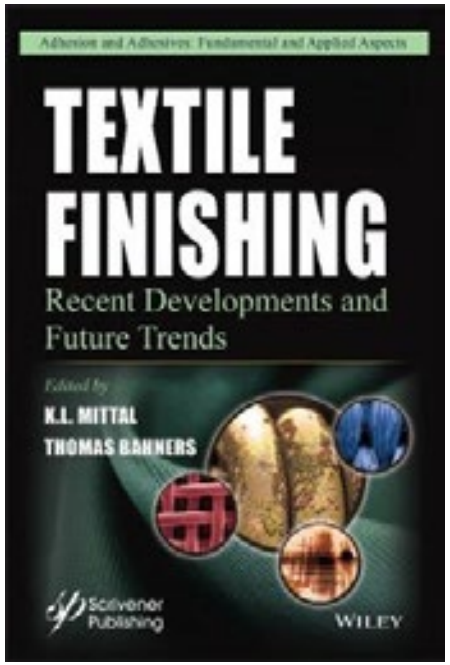
Thesis of Dr.-Ing. Mohammad Kamruzzaman successfully defended

On 25 September 2017, at a meeting chaired by Prof. Majschak from the Institute for Processing Machinery and Mobile Machinery (Institut für Verarbeitungsmaschinen und Mobile Arbeitsmaschinen), Dr.-Ing. Mohammad Kamruzzaman successfully defended his thesis „Sustainable technology for effluent treatment of reactive dyeing by simultaneous electrochemical/UV technique“ undertaken at the Institute for Textile Machinery and Textile High-Performance Material Technology (Institut für Textilmaschinen und Textile Hochleistungswerkstofftechnik) at the Technical University (TU) of Dresden.

New book published in collaboration with the German Textile Research Centre North-West (Deutsches Textilforschungszentrum Nord-West – DTNW) about future textile functionalisation trends

A recently published book entitled “Textile Finishing – Recent Developments and Future Trends”, edited by K. L. Mittal and T. Bahners, takes a detailed look at current developments aimed at producing antimicrobial, dirt-repellent or flame-retardant apparel.

ISBN Nr. 978-1-119-42676-9



Microplastic in the oceans: FTB conducts research into biodegradable sportswear

Plastic waste in the world's oceans is an ever-growing problem. The Research Institute for Textiles and Clothing (Forschungsinstitut für Textil und Bekleidung – FTB) at Niederrhein University is now participating in a joint project aimed at finding possible solutions in the field of sports and outdoor textiles. More specifically, the project focuses on pollution caused by tiny textile fibres that are released in the wash and can end up being swept into the world's oceans with waste water. They are invisible to the naked eye, damage marine life and accumulate in the food chain. The joint project entitled "TextileMission" was officially launched on 1 September 2017. It is scheduled to run for three years and receive around 1.7 million euros of funding from the Federal Ministry for Education and Research (Bundesministerium für Bildung und Forschung – BMBF) within the framework of the funding priority scheme "Plastic in the environment – sources, reduction, possible solutions".

DigiPro: the project aimed at helping businesses with digital transformation

Mönchengladbach, 13 September. Small and medium-sized businesses are to be prepared for the digital transformation, which is currently being much talked about under the banner of "Industry 4.0". Here's what DigiPro aims to achieve: "unlimited digital transformation – the realisation of Industry 4.0 for small and medium-sized businesses in Germany and the Netherlands". The project is being undertaken as part of the EU funding programme "INTERREG V A Germany-Netherlands" and assists small and medium-sized businesses on the road to digitalisation in the cross-border regions of Rhine-Waal and Rhine-Maas. Workshops and coaching sessions are offered to the companies concerned in order to raise awareness of the potential offered by new technologies. The GEMIT Institute (specialising in business process management and IT) at Niederrhein University offers the companies free consulting services, develops concepts and feasibility studies and conducts development projects.

Publication of the new Textile Research Report 2016

A research report published by the FKT and including 223 abstracts explains why we're heading for a more textile-dominated future. Technical textiles in the form of hi-tech yarns, smart textiles or textile-reinforced concrete have become a stimulus for new (composite) materials and hence for innovative product developments in countless industries. The 15 textile institutes engaged in research under the umbrella of the Textile Research Advisory Committee (Forschungskuratorium Textil – FKT) play a vital role in this process, as seen once again from the recently published Textile Research Report (Textilforschungsbericht) 2016.

Download-Link (German language only)
http://www.textilforschung.de/uploads/Forschungsbericht-2016.pdf

Topics of the next issue 4 /2017

TOP STORY:

Going digital

Industry 4.0

Interview
Preview Shanghaitex 2017

Preview Shanghaitex 2017

Textile Industry review 2017 and outlook 2018

Special: Digital Printing Machines

Textile Machinery focus:
“Dyeing and Drying of knitware”

News from Textile Research Centers

TexData is the smart and inexpensive way to reach your customers.

Hard facts:

Founded:
1997

Website:
free of charge & registration

Unique Visitors:
97.323 /month (April 2015)

Visits:
>297.824 /month (April 2015)

Page Impressions:
>1.960.133 /month (May 2015)

Infoletter & Magazine:
no fee, registration required

Best magazine downloads:
85.862 (issue 4/2015)

New Subscribers in 2016:
557 new subscribers in 2016

Estimated readers:
75.000 (accumulated according to analyses: some companies put the Infoletter in their Intranet and a couple of readers forward it to colleagues)

Publisher

deep visions Multimedia GmbH
In der Masch 6
D-22453 Hamburg
Germany

Tel. +49 (0)40 57 00 4 - 800
Fax +49 (0)40 57 00 4 - 888
E-Mail: info@deepvisions.de

Editorial

TexData International GBR
In der Masch 6
D-22453 Hamburg
Germany

Tel. +49 (0)40 57 00 4 - 900
Fax: +49 (0)40 57 00 4 - 888
E-Mail: redaktion@texdata.com
editorial@texdata.com

Technology and Typesetting

deep visions Multimedia GmbH
In der Masch 6
D-22453 Hamburg
Germany

Tel. +49 (0)40 57 00 4 - 800
Fax +49 (0)40 57 00 4 - 888
E-Mail: info@deepvisions.de