

TEXDATA

INTERNATIONAL

Magazine

Issue No. 1 2018

Business // Finance // Market // Technology

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

Closing the loop is the (distant) future!

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Dear Reader,

Welcome to the textile year 2018, which promises to be another excellent year. In our annual report for 2017 we discovered a large number of satisfied companies, and the IMF's most recent growth forecast for the global economy of 3.9% should also be seen in a positive light. The benefit of this for the textile industry comes in the form of increasing demand for clothing from a growing world population, as well as innovative solutions in the production of technical textiles and non-woven fabrics.

Nevertheless, the textile industry still has some challenges to overcome. We must, for example, continue to drive forward the development towards greater sustainability. This issue has lost a little of its impetus recently, and one gets the impression that, since the adoption of the Paris Agreement, climate objectives are no longer quite the hot topic they once were. What is the situation with the USA in this regard? Have they backed out? Are they still abiding by the agreement? Or have they already returned? In our articles focussing on sustainability we will answer this question and others, and as usual look back on the changes and milestones in sustainability all along the supply chain in order to bring you up to date with the state of affairs as concisely as possible. We have moreover given more weight to the subject of transparency, since credibility is still the deciding factor in the success of sustainability, and transparency is the highest grade of credibility.

Added to this are the ongoing challenges of boosting productivity, increasing efficiency and the associated modernisation of the means of production. In this respect, it will be possible to take a close look at the latest generation of machines at this year's large trade fairs.



One such trade fair is the up-coming ITM 2018 in Istanbul, which is of major significance for both Turkey and the whole of Europe. As usual, we will provide a preview of the fairs and the machines that will be exhibited there by the major manufacturers.

We hope you continue to enjoy a successful year!

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

Best regards
Oliver Schmidt

ITM

2018

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"This Fair is organized with the audit of TOBB (The Union of Chambers and Commodity Exchanges of Turkey) in accordance with the Law No.5174"

***ITM 2018 is the
place to set the course
for the future***

Already for the seventh time the ITM International Textile Machinery Exhibition and concurrent HIGHTEX 2018 International Technical Textile & Nonwoven Trade Fair are taking place from April 14-17, 2018 at TÜYAP Fair Convention and Congress Center in Istanbul, Turkey.

As in the years before ITM 2018 is organized by Tüyap Fairs and Exhibitions Organization Inc & Teknik Fairs Ltd partnership with the Cooperation of TEMSAD (Turkish Textile & Machinery Industrialists Association).



Let's take a look at a few facts about the ITM. More than 1000 exhibitors from 30 countries will be presenting their machines and services in 12 halls and over an exhibition area of 120,000 square metres. Not surprisingly, the host country, Turkey, accounts for the largest number of exhibitors - an impressive 303 - followed by Italy (145), China (141), Germany (107), India (43) and Switzerland (31). Necip Güney, Chairman of the board of TEKNİK Fair, stated in an ITM preview news that the 2018 ITM exhibition attracted a great attention of the world technology producers and makes a splash with the increase in participants and also booth spaces. As in the case of the last ITM held in 2016, almost 50,000 visitors are expected to attend.

Strong economic growth in Turkey

The general indicators for ITM 2018 couldn't be much better. On the one hand according to latest OECD forecasts, the global economy is still growing at a high rate, and on the other hand Turkey itself has excellent growth results in 2017 and also a very positive outlook for the coming years. In 2017 Turkey has been the fastest growing economy among the G20 members and will be at least the 4th fastest the next years! OECD Economic forecast summary from November 2017 states: „Economic growth is estimated to have exceeded 6% in 2017, driven by strong fiscal stimulus and an export market recovery, and is projected to edge down but to stay between 4½ and 5% in 2018 and 2019.

Consumer price inflation remains far above the target and disinflation is projected to be slow.”

Also the European Commission has revised up Turkey’s growth forecasts for 2018 and 2019 in its Autumn 2017 Economic Forecast. The commission predicted Turkey to grow by 4.0 percent this year and by 4.1 in 2018, 1.0 and 0.8 percentage points higher than forecasts released in previous research. The report says:” Economic growth in Turkey was surprisingly strong in the first half of 2017, accelerating to 5.3% (y-o-y) from 3.2% in 2016, supported by stronger exports, a significantly depreciated Turkish Lira in comparison with last year and a strong boost from public finances and other policy incentives”. To round it up there is also a good outlook for the most important trading partner of Turkey, the European Union. According to its Autumn Forecast, the European Commission expects growth to continue in both the Euro area and in the EU at 2.1% in 2018 and at 1.9% in 2019 (Spring Forecast: 2018: 1.8% in the euro area, 1.9% in the EU). With its forecasted 4.0 percent performance, Turkey will grow more than most EU countries except Romania and Malta according to the report.

The Turkish textile industry surely is very much looking forward to the ITM 2018. And not only this country will be enjoying the show, because the ITM has truly become an international event since its first happening in 2004, whose attraction reaches from Europe over Asia all the way to Africa.

1200 firms exhibited their latest technologies ITM 2016 Exhibition and 49.730 visitors from 77 countries showed that it is the first and most important event in Turkey and the region. These figures make the ITM one of the most important textile machinery fairs in the world and the organisers again are expecting an increase this current year.

Great support for ITM

And there are a lot of reasons why this projection will become true. For example within the scope of promotion an ITM team visited Iran and Uzbekistan. At 23rd Irantex 2017 they have conducted highly productive negotiations with the official and commercial delegations planned to come from Iran. In this context; talks were held with the officials of the Iranian government, directors of the Chamber of Commerce and Industry, and Presidents of Associations. In addition, information on the process was shared with Cengiz Gürsel, Principal Trade Consultant of the Turkish Embassy of the Republic of Turkey in Tehran. Necip Güneş, the Chairman of the Executive Board of the Technical Fairs, who evaluated the visitor activities and promotions in Iran, emphasized that ITM was highly prestigious and attracted a great deal of interest in Iran underlining that the most intense foreign visitor participation to ITM 2016 with the rate of 19 % was from Iran. Following Irantex, promotional activities for the visitors also continued at the CAITME 2017 held in Tashkent, capital city of Uzbekistan.

Another reason is the ITM 2018 Exhibition has taken its place on the list of the procurement committee programs by the Turkish Ministry of Economy. In this context, ITM 2018 is preparing to host procurement committees from many countries, especially from Iran, Uzbekistan, India, Pakistan, Bangladesh, Russia, Egypt, Turkmenistan, Morocco, Algeria, Indonesia, Tunisia, Vietnam, Ethiopia, and Kenya. The procurement committees from these countries will be able to meet with producers of all kinds of yarn, woven and knitted fabrics, with integrated facilities that make dyeing, printing and finishing on woven and knitted fabrics and with technical textile and nonwoven fabric producers.

Furthermore, the Commercial Attaché of the Consulate General of the Czech Republic in Istanbul and Teknik Fairs cooperated to organize a conference in the field of Nanotechnology and Nonwoven at HIGHTEX 2018 Exhibition. At the bilateral talks, the Czech Republic Commercial Attaché Mr. Jan Ondrejka gave a good news that a procurement committee composed of at least 20 people would visit the HIGHTEX and ITM 2018 Exhibitions. A major contribution to ITM 2018 was made by ATOK (Textile, Clothing, Leather and Industry Association), the largest textile association in the Czech Republic. The association, which has 57 members in total, will introduce the ITM 2018 in the ATOK Newspaper published by the association.

And surprisingly, also The Panama Colon Free Trade Zone, the world's second largest free trade zone, will take part at ITM.

Mr. Manuel Grimaldo, Director General of the Panama Free Trade Zone, expressed a special interest in the ITM and requested a location from the exhibition space and will visit the fair together with a team, among whom there are members of the Panama Free Zone Board of Directors. This makes Panama one of the countries taking place at the ITM for the first time.

Turkish textile industry ranks on a top place

The Turkish textile industry ranks very highly in the world and is also very important for Turkey itself, particularly in terms of the country's exports. According to WTO statistics, in 2016, Turkey exported goods amounting to a value of 142,557 million US\$. 106,204million US\$ of this pertained to the "manufactures" sector, which in turn amounted to 74.5%. On the other hand, textiles, with a value of 10,913 million US\$ and clothing, with a value of 15,047 million US\$ together made up a share of about 24%.

Overall the share of textiles and clothing in world total merchandise exports was 5% for 2016. Turkey's share in world exports was stated as 0.89% for 2016 by the WTO. In contrast, their share in world exports for textiles and garments is significantly higher, as Turkey is a textile country.

Turkey raked in 10,913 million US\$ for 2016 with a share of 3.8% for textiles and 15,047 million US\$ with a share of 3.4% for clothing. Therefore, it follows China (37.2%), the European Union (23.0%), India (5.7%) and the USA (4.6%) in fifth place for textiles and China, the EU, Bangladesh, Vietnam and India in sixth place for garments. In textiles this means a growth of more than 50% in world textile export shares since 2010.

All in all the given WTO figures for the year 2016 are showing Turkey has a very strong position in textiles as well as in garments. However, there are some additional information which are of high interest for each textile country: Although China still stayed in top position, representing 36 per cent of world exports of clothing and 37 percent of world exports of textiles in 2016 the country's exports of clothing fell by 7 percent and textiles declined by 3 percent. China goes High-Tec and probably textiles and clothing are losing importance for the industry as they did in many other countries before like for example Japan and Korea. If this outlook will become true, there are big chances for other top textile countries to grow strongly in both sectors. Maybe it is a once in a lifetime opportunity.

Currently, it is Vietnam, which has risen significantly over the last few years and grew by 88% in the clothing sector between 2010 and 2014. Moreover, in 2016 Vietnam entered the top ten in textile exports for the first time (2 per cent share; +9 per cent) while Pakistan rose from ninth to seventh position.

In 2016 in clothing exports the highest increases were recorded by Cambodia and Bangladesh (+6 per cent for both countries). These countries are the chief competitors that Turkey must hold out against to increase the leading positions in exports.

Huge investments are announced

Therefore, it will become even more important to prioritize efficiency and productivity through investments and modernisation and to potentially even increase the production capacity as well as the quality of the goods to be able to tap into new market segments in the face of Asian competitors. And this postulation meets exactly what Turkey has yet started. The organizer announced in a press release: "The technology investments in Turkey, that were left in limbo due to global uncertainties in the second half of the year of 2016, started to revive by 2017. Especially in 2018, it is estimated that textile producers, who are attracting attention with the increase in exports, will purchase a large number of machines in order to increase their capacities and to renew their technology circuits. İsmail Gülle, President of Istanbul Textile and Raw Materials Exporters Union, underlines the fact that 3 Billion Dollars will be invested in the sector until the end of 2018."

Of course, it would not be a bad strategy to give the "Made in Turkey" label a premium profile. This would in turn increase the level of trust that global consumers have for Turkish-made products, so that they would have a similar reputation to "Made in Italy" garments.

A couple of textile companies, for example the well-known brands from the denim sector, are doing this way and have become world market leaders.

The textile and garment industry could also win major plus points if they invested in sustainability, as in terms of European sales markets, they already have a clear advantage over Asian competitors with shorter and therefore more sustainable transport routes. When it comes to sustainable production, the most modern machines that they will need were presented at the ITMA under the motto of “Master the art of sustainable innovation.”

This brings us back to ITM and technology and thereby to the most important aspect of the fair: the exhibitors and their machines.

Spinning

In the spinning sector the acknowledged technical leaders like **Trützschler** (Hall 3 / Booth 310B), **Savio** (Hall 3 / Booth 311A), **Saurer** (Hall 3 / Booth 311B & 303B), **Rieter** (Hall 3 / Booth 313A) and **Oerlikon** (Hall 3 / Booth 312) will present their latest innovations which help spinners to improve productivity and flexibility as well as to save space and energy. **Loepfe** (Hall 2 / Booth 220) for sure will show how spinners and weavers can improve their product quality to fulfil highest demands.

The Swiss based **SSM** Schärer Schweiter Mettler (Hall 3 / Booth 301A and 313A), the inventor of the electronic yarn traverse system, will continue their tradition of trend-setting with the presentation of breakthrough technologies which will help the customers to get their goals. Although markets, technologies and fashion are subject to continuous change, the endeavor of SSM is to deliver state-of-the-art products and best solutions for any new demand. Keeping this in mind, SSM is introducing several new applications in Istanbul.

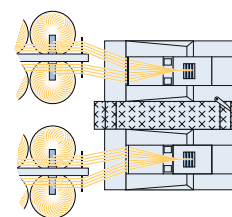


TG30-ETC © 2018 SSM

First innovation is the **TG30-ETC** which is offering the combination of false-twist texturing and air-texturing in one process step. Next one is the **PWX-MTC** with online tension controlled, positively driven unrolling system precitens™. This machine is offering the highest flexibility and productivity. SSM will also present the wide range of fancyflex™ options for creating slubs and neps with **DP5-T** and visitors of the booth will be demonstrated the success of **DIGICONE® 2** which is enabling higher dyeable package density with same package volume.

In addition, SSM presents further innovative solutions in Dye Package/Rewinding, Assembly Winding, Technical Yarns, Air Texturing, False Twist Texturing, Air Covering and Sewing Thread Finish Winding. Besides the displayed applications, SSM provides a wide range of renowned textile machines.

Graf + Cie (Hall 3 / Booth 313A+B) will present together with the Turkish partner, **Sarteks Makina Sanayi ve Ticaret A.Ş** the wide portfolio of solutions for clothings for short staple cards, roller cards and combs for combing machines as well as its wide portfolio of solutions for the spinning and preparation process. Graf's new products and product systems have one goal: to strengthen the customers' position in their markets. In particular Graf will show the wide range of clothing's available for any type of card and especially designed for excellent carding quality to produce high-grade yarns. Another highlight is the Ri-Q-Comb flex, the new circular comb series with height adjustable geometry for up to 20% lower imperfections.



Due to its intelligent concept, the TWIN version is compact and requires little space.

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For the first time in short staple spinning, it also features a new can format: JUMBO CANS with 1,200 mm diameter reduce the number of can transports and significantly improve the efficiency of the downstream machines.

Getting fibers into shape – since 1888.

TRÜTZSCHLER SPINNING



Ri-Q-Comb flex © 2018 Graf + Cie

And last but not least they will present the innovative Hipro clothing, suitable for all standard man-made fibers in the nonwoven sector and also for wool, standing for increased production compared to conventional clothing and reduced fiber fly. As a complete system provider, the Swiss company from Rapperswil offers a comprehensive package from product and technical advice to service and service equipment. In addition, Graf supports its customers by developing custom-made solutions for all their application needs.

Novibra Boskovic (Hall 3 / Booth 313A), will exhibit the latest innovations for the reduction of spindle energy consumption and maintenance costs. Spindles with modern ring spinning machines can reach speed up to 25 000 rpm. In these high-speed applications energy consumption is an important issue. Novibra displays LENA (Low Energy consumption and Noise Absorption) high-speed spindle at ITM Istanbul. LENA design has been developed from well-proven Novibra Noise Absorbing System Assembly (NASA), which ensures minimum neck bearing load, minimum vibration and significantly lower noise level at high speed. Furthermore the new generation of clamping crowns, CROCOdoff and CROCOdoff Forte, introduce genuine doffing without underwinding. Customer may benefit from lower after doff end-down rate, and reduced fiber fly. As a consequence, Novibra components bring reduction of maintenance costs, less waste and due to reduced air friction also significant energy saving. CROCOdoff can be supplied with a new machine or as an upgrade for an existing machine.



Spindle with CROCOdoff © 2018 Novibra

"Our customers benefit from our sustainable e-save solutions for the production of manmade fibers within growth markets like textile and apparel, infrastructure, transportation, food, energy and electronics."

Georg Stausberg,
CEO Oerlikon Manmade Fibers Segment

From Melt to Yarn, Fibers and Nonwovens

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The Switzerland based **Bräcker** (*Hall 3 / Booth 313A*) will exhibit the high quality products and present the latest innovations. Bräcker's products enable spinning mills to increase the production output at an efficient price-performance ratio. With this ambitious goal, new traveller treatment and ring/travellers systems are launched. The surface treatment of the **ONYX travellers** facilitates a higher efficiency. The improved gliding characteristic allows for an increase of the spindle speed by up to +1000 rpm and prolongs the life of the traveller by up to +50%. On top of that the running-in period is considerably reduced. The large contact surface between **SFB traveller** and **ORBIT ring** enables higher spindle speeds even with fibers like viscose or with fibers, tending to thermal damage, e.g. polyester.



ORBIT Rings © 2018 Bräcker

Higher traveller speeds of 10 to 20% are achieved compared to the T-flange ring/C-shaped traveller system. To cover the new demands, the SFB traveller portfolio was substantially expanded in regards of traveller profiles and weights. In addition, Bräcker introduces the new **BERKOL® multigrinder** to the market.

The entire range of top rollers and long cots used in a spinning mill can be processed on only one single machine.

Suessen (*Hall 3 / Booth 313A*) will demonstrate the competence in handling and processing natural and man-made-fibers within the ring and rotor spinning process. **EliTe®CompactSet Advanced** is the world's most in demand compact spinning system. New innovative components and devices as the EliTop Advanced increase lifetime of cots up to 100% and reduce handling in buffing and workshop up to 50%. This system can be fitted on any type of ring spinning machine and process all types of fiber materials with no yarn count limitations. The optional **EliTwist®** spinning method combines compact spinning and twisting of a two-ply yarn in one single step of production, and therefore is the most economical way to produce two-ply yarn.



TwinDisc-Rotor © 2018 Suessen

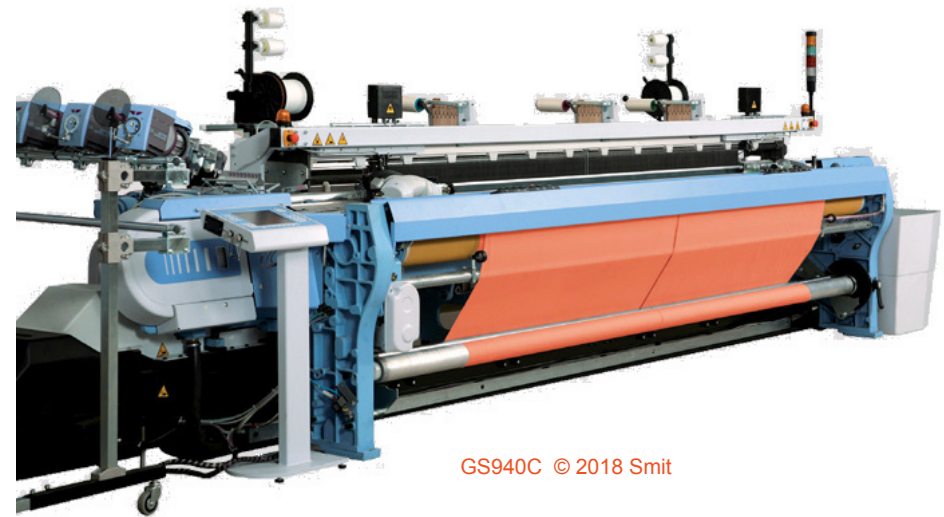
The **family of HP-GX Top Weighting Arms** for short staple, roving and worsted spinning machines are equipped with finely tuned heavy-duty plate springs without friction in the load transmission.

The HP-GX 3010, for short staple, in combination with ACP Quality Package (Active Cradle with PINSpacer NT) reduces IPIs in cotton spinning up to 60 % and Uster CV% up to 15 %. **Premium Parts** spinning components, spare parts and modernization packages for rotor spinning machines such as **ProFiL®** Rotors, **ProFiL®** Navels, SOLIDRINGS, PS7 TwinDiscs are most precisely manufactured to guarantee homogeneous yarn quality throughout the complete machine in order to ensure flawless textile fabrics.

Weaving

In the **weaving sector** there have been developed exciting improvements and innovations during the last years.

One of the most interesting places for weavers will be the **SANTEXRIMAR** booth (*Hall 2 / Booth 215A*) where they will get latest information about spare parts and new installations of the famous **SMIT** weaving machines. Since 2016 SMIT belongs to the SANTEXRIMAR and the group will draw upon and further expand the prior SMIT successes.



DORNIER (Hall 2 / Booth 215B) will demonstrate weaving machine solutions for clothing, home and technical textiles aimed at the Turkish and Central Asian market at the ITM. Besides denim, wool and carpets, in Turkey the machine builder's weaving machines are also used to produce technical textiles. "Clothing and home textiles are produced in Turkey on weaving machines from DORNIER by tradition", says Wolfgang Schöffl, Head of Business Unit Weaving Machines at Lindauer DORNIER GmbH (LiDO). The machines are used to make fabrics for furnishings, curtains and hand towels, for example. But recently technical textiles have also begun to make an appearance in the product portfolios of Turkish weaving houses. The volume is still modest, but it is growing. Technical textiles as a market of the future for Turkish weavers? "It will happen", Schöffl is convinced, as he sees the classic local textile industry responding to cheaper competition from India and China.

DORNIER says technical textiles are generally considered to be growth market with enormous potential. Powerful industries such as aerospace, the automobile industry, wind energy and medicine all drive a steadily increasing demand. And they underline this has also been confirmed in a study conducted by the Swiss business consultancy Gherzi and commissioned by Euratex at the request of the EU Commission: The study found that the global market for technical textiles (including non-wovens) will experience annual growth rates of 5 - 6 percent and will reach a volume of almost 200 billion dollars US by 2020 (2014: 147 billion dollars).

But the initial obstacles for weavers who want to break into the technical textiles market – often while still producing home and garment fabrics – are formidable. The standards of design and aesthetics are replaced almost entirely by function and quality. Companies intending to manufacture airbags, parachutes, filters or tirecord must have weaving machines that satisfy the highest quality standards. “Either the material is flawless – or it is useless; there is no second-quality category in technical weaving”, says Schöffl. And this is precisely why every weaving machine built by the technology leader DORNIER conforms to all major manufacturing criteria such as lowest warp and filling thread breakage rates, processing of various materials, high machine speeds and reproducible machine settings with consistent weaving quality. “With our rapier and air-jet weaving machines, we intend to make it possible for the weaver to achieve the highest possible production reliability for technical weaving as well”, explains Schöffl.



A1 ServoTerry © 2018 Lindauer DORNIER GmbH

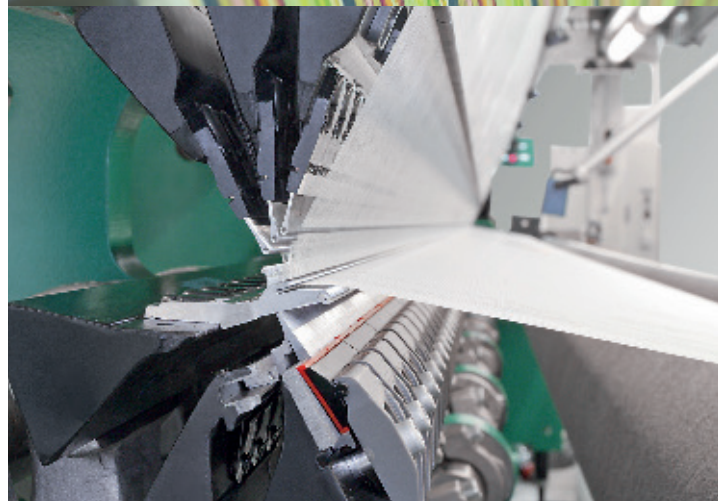
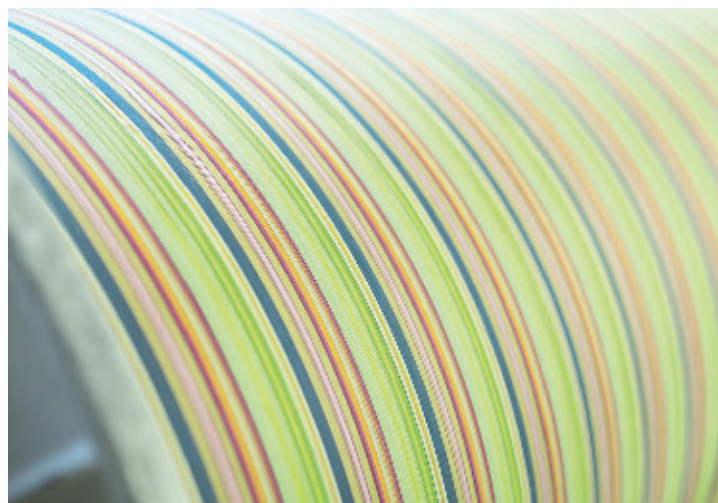
For example, with the positively controlled filling insertion function, the versatile rapier weaving machines from DORNIER can be used to process not only delicate effect yarns for women’s jackets, for example, but also coarse yarns for conveyor belt fabrics and the like. The LiDO head of business unit explains that the purpose of this is to enable weavers to produce for the promising technical textiles market as reliably and safely as they do the household and clothing textiles in the face of increasing market volatility. “An investment in flexibility is an investment in the future.”

Furthermore, DORNIER suggests European companies might also benefit from technical fabrics produced in Turkey.



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The country astride the Bosphorus is already a well-established textile manufacturing partner for the EU, and offers the further advantages of duty-free exchange of goods and short trade routes. Goods sent from Turkey are delivered to any destination in Europe in a few days by truck, not after weeks aboard a container ship. DORNIER has been represented in Turkey by DORNIER Makina Ltd. Sti. located in Istanbul for over ten years. This is the business hub for commissioning, repairs and shipping of original spare parts for the whole of this Euroasian country.

In the largest booth in the weaving hall, **Itema** (Hall 2, Booth 214) will display four weaving machines including an absolute new launch in the market featuring innovative and breakthrough devices. Furthermore, the company will highlight benefits and latest developments in its OEM spare parts in a dedicated corner. Visitors will also have the chance to learn more about Itema successful case histories through the interviews made with 8 among the top Turkish weaving mills active in multiple fabric segments (Berteks Tekstil, Ipeker Tekstil, Koton Tekstil, Osman Canlı Tekstil, Ozanteks Tekstil, RB Karesi, Sürü Tekstil, Yedeks Tekstil).

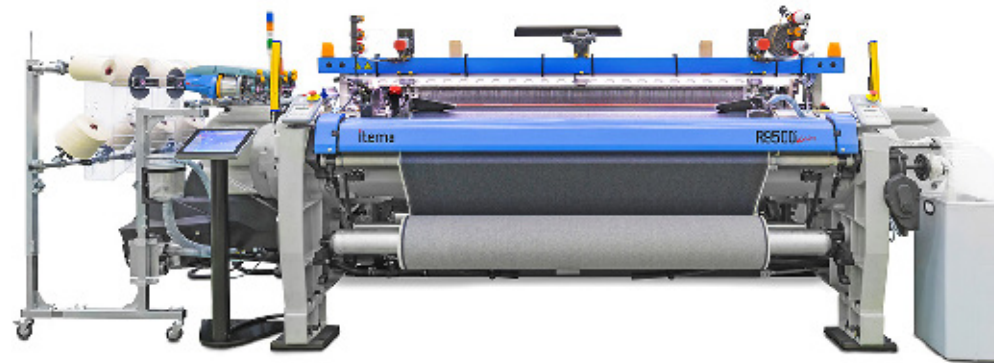
Itema chose ITM as the official stage to introduce in the market the second generation of the Company's denim-dedicated rapier weaving machine, the R95002denim.

The R95002denim is set to define a new benchmark in denim weaving guaranteeing unparalleled cost savings, superior fabric quality and outstanding user-experience. Featuring breakthrough devices and enhanced skills, the R95002denim is guaranteeing an unrivalled competitive advantage in the market to denim mills. The weft insertion system achieves here the highest performance levels in terms of fabric quality and components wear resistance. The new SK UltraLight Rapiers, specially designed to meet specific indigo fabric needs, feature a revolutionary design which ensure their reduced dimensions and maximum lightness.

Streamlined and lightweight, the SK UltraLight rapiers further enhance the Itema Shed Geometry allowing an even smaller shed opening leading to unsurpassed fabric quality. Redesigned and optimized, the tape-hook system provides the remarkable benefit of significantly extending components' lifetime.

The new Itema tapes developed by Lamiflex, an Itema Group company specializing in composite materials, feature an innovative configuration with a triple layer of carbon fiber leading to maximum reliability and represent the first result of the research and development cooperation between the two companies after the acquisition of Lamiflex by Itema.

Great strides have also been made to guarantee an outstanding user-experience, such as the optimized machine ergonomics with a lowered front frame to facilitate loom accessibility, the new ergonomic rapier opener and, last but not least, the new IteMa Textile Help dedicated to denim fabrics, a troubleshooting software that - loaded directly on the machine console - provides real-time support to the weaver. Saving is the crucial point of the R9500denim. Not only the optimization of the main mechanical components allows a considerable energy consumption reduction but the machine is equipped – in world premiere – with a revolutionary, never-before-seen in the industry device that eliminates the waste selvage on the left-hand side of the fabric thus leading to unparalleled savings. Working up to 4 weft colors and ensuring maximum user-friendliness, the device can be admired during ITM.



R9500 Denim © 2018 IteMa

The R9500terry – at ITM in dobby version – represents an absolute best-seller carrying on the rich heritage and reputation in terry weaving of historic Sulzer, Vamatex and now IteMa brands. 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. Furthermore, the R9500terry on show feature a 380cm weaving width which is an undeniable unique proposition of IteMa being the only weaving machine supplier to provide this version in the market.

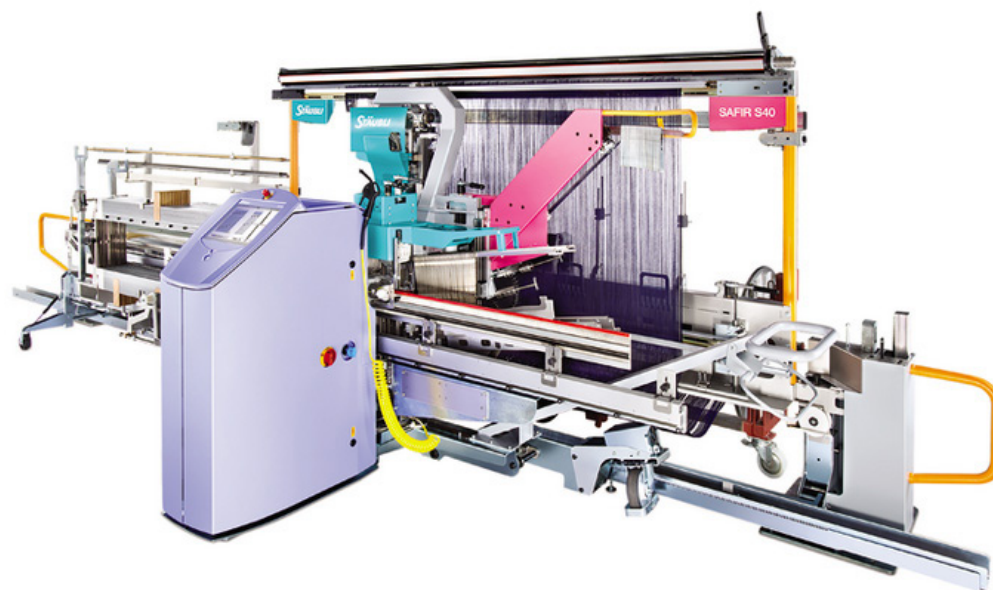
The A9500 on display at ITM is enjoying a worldwide boom in demand due to growing number of enlightened customers. It is designed for high productivity, whilst ensuring reduced levels of energy consumption and guaranteeing air savings, as well as top machine reliability. A popular recent trend to weave stretch and super stretch fabrics with dedicated weft yarns inspired IteMa to create and patent the innovative BLC – Brush Lycra Clamp® – nozzle to weave elastic weft yarns.

Thanks to the BLC nozzle, the weft is held without movable parts to ensure superior fabric quality and reliability. Another IteMa patented feature – the ELD Electronic Leno Device – with its innovative design, self-cleaning and no need to wind the leno spools, provides a perfect leno binding even at highest speeds, whilst reducing significantly operational costs. Thanks to the electronic NCP New Common Platform the A9500 provides immediate, easy and perfect control of the weft insertion parameters. Courtesy of the IteMa customer OZ-Eli, the A9500 will run a typical Turkish apparel style demonstrating real production speed and performance just as experienced in Customer's mill.

The last machine on show at ITM is the wide version of the IteMa R9500. Traditionally renowned as the preferred supplier for furnishing and upholstery fabrics weaving machines, IteMa does not miss the opportunity to demonstrate the superior versatility of the R9500 by weaving sophisticated curtain fabrics. The R9500 fully loaded with best-in-class IteMa devices comes directly from Berteks Tekstil, leading producer of high- quality curtain fabrics.

The Motorized Weft Cutter, an IteMa innovation designed more than 15 years ago ahead of any other textile machinery supplier, ensures superior textile efficiency due to the possibility to set independent cutting times for each weft, leading to utmost versatility and reduced fabric waste. The IteMa SK Rapiers coupled with the Motorized Weft Cutter make the R9500 an extremely versatile and flexible rapier machine.

Stäubli (Hall 2 / Booth 217) is looking forward meeting with customers and all other interested parties. As an industry partner, Stäubli constantly analyses customers' most important needs and integrates solutions to them in the development of its new products. Working in this way, Stäubli offers an extensive machinery range that perfectly meets weavers' expectations and offers mills increased advantages in terms of reliability, long service life and versatility in application.



SAFIR S40 © 2018 Stäubli

In the field of automatic weaving preparation solutions (drawing in and warp tying) the Stäubli SAFIR S40 drawing in machine is the compact solution for denim and shirting warps. Weavers can see live for the first time in Turkey this machine dedicated to coarse and middle yarn types for denim, bed linen, and shirting fabrics, as well as fabrics for leisure wear. Built of a mobile drawing in machine serving one or more stationary drawing in stations the machine offers compact space requirements and versatile layout possibilities, thus it fits in any mill. Concerning high-speed Jacquard machines with customer-specific harnesses Stäubli will show the LX Jacquard machine for exquisite flat fabrics, terry cloth and technical fabrics.

This successful machine is shown in combination with a Stäubli harness. Built with uncompromising high-quality materials and designed to perform with utmost precision at very high speeds, the LX Jacquard machine allows mills to weave sophisticated fabrics for virtually any application – from colourful African damask to OPW (one piece woven-) airbags, to terry towel. Stäubli also offers a Jacquard machinery Series for ribbons and labels. At the fair the model LX12 can be seen. Easy to adapt and versatile, it is suitable for all types of needle looms and allows a straightforward access for making machine adjustments. It supports excellent results when weaving labels, decorative ribbons, trimmings or elastic ribbons for lingerie.

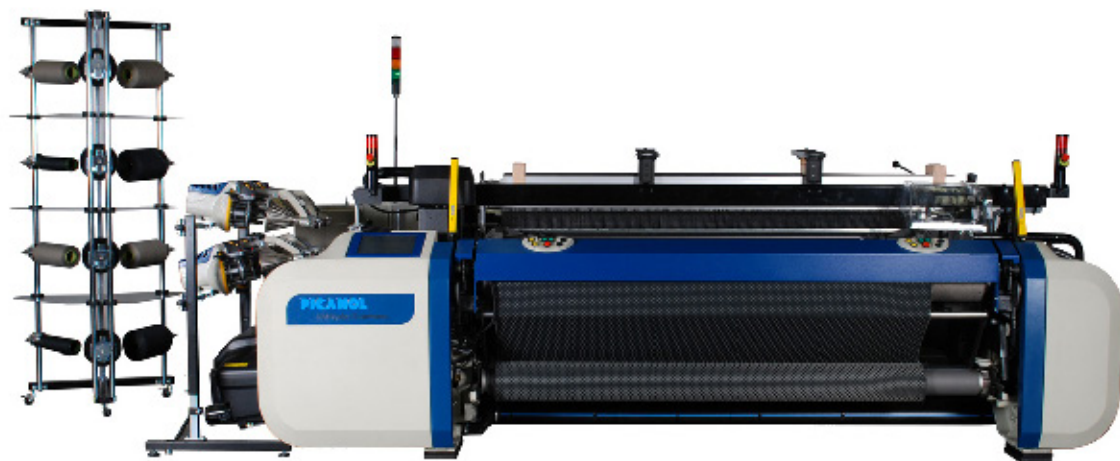
Of course, Stäubli will present latest innovations in the field of dobbies and cam motions for any application.

The third generation of Stäubli's rotary dobbies, the S3060/3260 series, can be seen at the Stäubli stand and the booths of many other weaving machine manufacturers with different applications. This new generation of rotary dobbies offers new heights of performance and reliability.

Another highlight will be carpet samples demonstrating illustrating technological advancements. This includes high density applications, weft effects and light carpets. The D4S automatic toe-closing device will be presented on a circular sock knitting machine. Visitors can experience how the time consumption in the sock knitting process can significantly be reduced.

Last but not least Stäubli will demonstrate technical textiles weaving systems and automation solutions for the knitting process.

Underlining the importance of the Turkish market, the **Picanol** team (Hall 2 / Booth 216) will be exhibiting two rapier and two airjet weaving machines. With industrial speeds of up to 750 rpm, the OptiMax-i is unquestionably one of the world's fastest rapier weaving machines in industrial production. Highlights of the new rapier include increased performance, more rigid construction, new applications, smart energy efficiency, improved ergonomics and user-friendliness.



OMNIplus Summum © 2018 Picanol

The OptiMax-i is available in reed widths ranging from 190 to 540 centimeters. Furthermore, with its Guided Gripper system (GC) and Free Flight system (FF) it is also a very versatile. Picanol will present an OptiMax-i 4-R 190, fancy denim. The machine is configured to show the top speeds achievable with the OptiMax-i. Picanol will also present its TerryMax-i rapier weaving machine, which has been developed for terry towel production.

The direct electronic drive of the cloth fell mechanism guarantees a perfect pile formation and enables weavers not only to program the pile height loop by loop, but also to program the pre-beat-up distance of every single filling yarn, which in turn permits endless design possibilities. Special features include OptiSpeed, pile height monitoring and needle roller control. The machine on the show will be the TerryMax-i 8-R 260, terry.

The OMNIplus Summum is Picanol's high performing airjet weaving machine. Built on the reliable BlueBox electronic platform, the OMNIplus Summum is packed with new features that enhance weaving performance and facilitate future improvements.

The OMNIplus Summum is equipped with fully electronic pressure regulators, a separate built-in air tank for each weaving channel and a unique triple air tank configuration for the relay nozzles. This improves the user-friendliness and flexibility of the machine and significantly reduces energy consumption. The machine on the show will be the OMNIplus Summum-4-P-280, sheeting to demonstrate maximum speeds become possible without compromising on flexibility. And there will be also an **OMNIplus Summum- 4 - P - 190, bottom weight** that brings an answer to the needs of bottom weight as well as denim weavers.

Van de Wiele is proud to present as a world's first the 3 meter execution of the Velvet Smart Innovator VSi for plain and jacquard velvets. The main specs of the machine include parallel reed motion, reinforced cross members, single beams over the full width and up to 24 servo driven smart frames. The VSi „345“-type is now available for plain velvets as well as jacquard velvets including light viscose carpets and prayer rugs. The new showpiece in carpet weaving is the „HCiX2“ in reed 1500 dents per meter, 8 colour frames (1500/8).

This high density carpet weaving machine, available in 3 and 4 meters width, is able to weave carpets with up to 5 million points per square meter, creating niche high end products. The same machine is able to weave carpets in reed 750 dents per meter, with 16 colour frames. The HCiX2 is perfectly suited for picture weaving: instead of the traditional labor-intensive designing of woven carpet, a photo-realistic picture is processed in real time and converted to a design that fits the weaving machine. The HCiX2 is also available in the common configurations 1200/8, 1000/10, 1000/8...



An important development for the Cobble tufting machines is the Individual Pile Delivery (IPD) on Colortec, giving a better pile surface of the tufted carpet, resulting in less yarn consumption.

The Colortec, in combination with the in-house developed software TuftLink, is able to produce carpet with multiple density and color gradients. Also, it is perfectly suitable for imitation hand-tuft qualities up to 4.2 kg/m², even with combinations of different yarns. With the Myriad, designs of 240 m² without repeat are possible for wall-to-wall side matching. The Myriad is available up to 1/12" gauge and can be equipped with double sliding needlebar. All Cobble tufting machines are available up to 5 meters width.

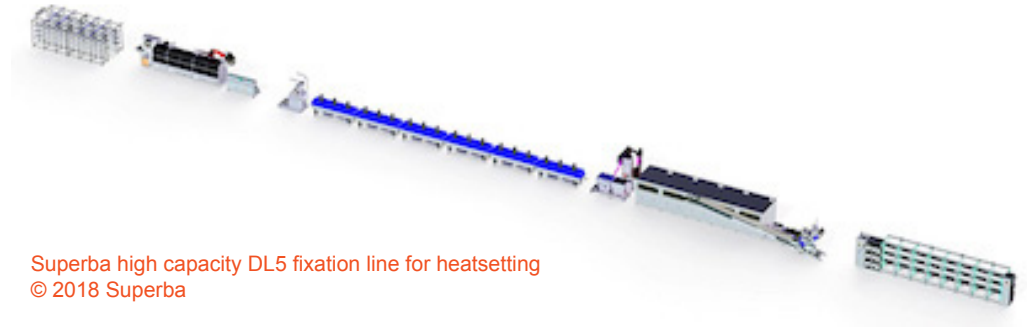
BONAS highlights the Si range, known as trailblazer in jacquard weaving due to the most compact design, lightweight, low energy consumption and high efficiency, which is now available up to 31.104 hooks in a single jacquard machine. The Ji range, already nested in many countries worldwide, is the ideal jacquard technology for the Turkish market. Based on the micro-selection technology and enriched with a state-of-the-art, maintenance-free drive mechanism with integrated dwell, the Ji is the reference for double width weaving. The Linux based BONAS Ci controller and software offers solutions for every weaving application. To improve the service to the important Turkish market, BONAS sales and service is now included in the Van de Wiele office in Istanbul.



BONAS high capacity Si Jacquard with 31.104 hooks © 2018 Bonas

SUPERBA, world leader in heat-setting and space-dyeing for carpet yarn, and member of the VANDEWIELE family of companies, is well established in Turkey with their agent SAMOTEKS in Istanbul, a permanent team of technicians in the field, and BILGE, their partner in Gaziantep, acting as the official distributor for spare parts with a large inventory immediately available. With more than 150 TVP3 lines to heat-set carpet yarn and over 60 LV3 lines for Acrylic running in Turkey, SUPERBA have established themselves as the benchmark in terms of quality for carpet yarn processing for all types of yarns (PET, PP, PA, PAN, Wool & blends). Recent developments have focused on Space-dyeing with the latest version of the MCD/3 machine capable to handle a layer of 72 ends with exclusive dyeing effects such as the bi-color printing or the tone-on-tone effect.

The MCD/3 can space-dye with up to 6 colors, polyester or polyamide in combination with the TVP3 heatsetting line, but also acrylic fibers with the new high capacity DL/5 fixation line. The synergy and co-working with VANDEWIELE weaving or tufting machines offers now to the customers the possibility of new creations with a very efficient time-to-market.



Superba high capacity DL5 fixation line for heatsetting © 2018 Superba

Knitting

In the **knitting sector** it is always a good idea to start the walk around at the **Groz-Beckert** booth (*Hall 7 / Booth 710B*) to examine some remarkable new products. This company is the unbeatable benchmark for innovation in knitting components and of course especially in needles. One example: the “litespeed® plus” needle. Its optimized needle geometry reduces the machine temperature and leads to significant energy savings in the knitting process. In the flat knitting segment booths to visit are of course **Stoll** (*Hall 8 / Booth 805A*) and **ShimaSeiki** (*Hall 7 / Booth 710C*).

Karl Mayer (Hall 7 / Stand 709) is an innovative partner in the warp knitting and warp preparation sectors, and one which can offer leading brands many new ideas and concepts. KARL MAYER is specifically targeting producers of home textiles and stylish, functional clothing by exhibiting products for the warp knitting sector. For its visitors, this company is presenting a performance show of the HKS 3-M, with a working width of 218“, and has prepared a number of decorative islands to illustrate a variety of applications.



WEFTTRONIC® II HKS © 2018 KARL MAYER

The focus of these platforms, which are designed to provide inspiration, are lace fabrics for creating stylish apparel, terry goods made from polyester and cotton, and double-bar raschel technology with its many different possibilities for designing sports shoes, rucksacks and plush articles – products that are currently a hot trend in Turkey – which means that expectations are high.

Net curtains are the focus of KARL MAYER's machine presentation and this is proving to be a great success. The HKS 3-M on show at the ITM fair is producing a new, lightweight voile fabric with striking shimmering effects in the ground and a striped design in a gauge of E 28.

The patterns produced on the HKS 4-M EL, equipped with one more guide bar and EL control, are illustrating the types of designs can be produced for the outerwear market. The lightweight, semi-transparent designs have a striking lace-like appearance.

Symmetrical patterns are placed on filigree, tulle-like grounds having a subtle shimmer, which is highlighted effectively by the textured effects of the yarns used. The EL control facility enables a wide variety of motif shapes and virtually unlimited repeat lengths to be worked.

Another focal point for the fashion sector is the stylish lace designs produced by the LACE. EXPRESS. Here, Karl Mayer is opening up new market opportunities for lace producers with the OJ 83/1 B especially - a machine that has a particularly advantageous cost:benefit ratio. The TM 4 TS can also be used to generate new market potential.

This high-performance terry warp knitting machine scores points over its counterparts in the weaving sector for processing staple-fibre yarns to produce fabrics with firmly anchored loops at an unbeatable production rate. These latest new developments are also demonstrating a real spirit of inventiveness.

For example, a split terry fabric, consisting of a cotton side having a high absorbency and a side made from polyester with a fluffy feel, is being shown at the ITM exhibition.

As an expert in warp preparation for the denim sector, KARL MAYER is showcasing a LONG CHAIN BEAMER and a BALL WAPER for use in the production of jeans. A PRODYE indigo dyeing machine and DOUBLE VARIO dyeing unit are also on show. Together with slasher dyeing, the PRODYE S indigo dyeing machine has been widely used by Turkish producers for some time now. The new PRODYE R rope dyeing machine has already found its first new buyers.

Together with warp knitting and warp preparation, technical textiles are the third focal point of KARL MAYER's show. The company is exhibiting as an experienced partner to the composites sector, and is offering machines for producing concrete reinforcement – textile concrete being the buzzword here – and the construction sector. And the company is also bringing fashion into the mix. Lightweight, stylish, weft-inserted warp knits can be produced on the WEFTTRONIC® II HKS and used in remarkable clothing collections.

The Albstadt-based circular knitting machine manufacturer **Mayer & Cie.** (Hall 8 / Booth 805A) is featuring three machines, the Relanit 3.2 HS and the D4 2.2 II, both of which are established machines, while the OVJA 2.4 EM is a new addition to the MCT product range in the mattress ticking segment. The Relanit 3.2 HS that Mayer & Cie. is exhibiting in Istanbul is one of the company's most popular models. It is the latest member of the Relanit family of machines that use relative technology. This technology, 30 years old this year, is characterised by gentle yarn processing and high productivity. Knitting pure cotton, the Relanit 3.2 HS with a 30-inch diameter reaches a speed of up to 50 rpm, i.e. speedfactor 1,500. Thanks to its many fields of application and exceptional fabric quality, D4 2.2 II enjoys wide international popularity, too. It offers highest quality for rib, interlock and 8-lock-structures. Using an especially developed conversion kit, D4 2.2 II produces spacer fabric of a unique quality.

The OVJA 2.4 EM is a new machine designed especially for the mattress ticking market's changing demands. It focusses on maximising output of standard mattress cover fabrics. The machine achieves this goal by combining a higher number of feeders (2.4 per inch) and a higher speed (up to 25 rpm with 38 "). Furthermore an info stand will present the latest innovation, spinitystems spinning and knitting technology.



D4-2.2 II © 2018 Mayer & Cie

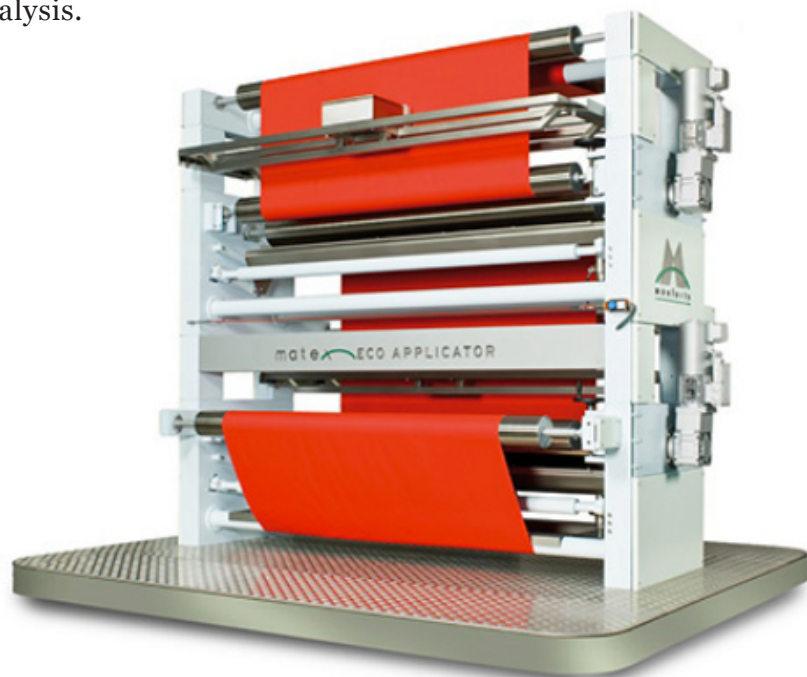
Drying, dyeing & finishing

In the **drying, dyeing & finishing** traditionally a lot of companies from Turkey are showing their equipment on huge booths to the visitors. Some of them like **HAS Group** (Hall 12 / Booth 1206) have become international players during the last years. Visitors who are looking for extraordinary quality for premium textiles should take the opportunity and also talk to the world market leaders exhibiting on the fair. **Brückner** (Hall 14 / Booth 1405A) for example offers a wide range of different machines and has built a brandnew facility last year in Germany to offer never seen possibilities to the market. The ITM is a chance to get some first-hand information. **Thies** (Hall 12 / Booth 1207B) dyeing machines are not only a benchmark in energy savings but also in quality, flexibility and reliability.

Mahlo (Hall 12 / Booth 1209B) lays stress on straightening technologies with the weftstraightener Orthopac RVMC as well as on energy saving concepts such as the stenter process control system Optipac VMC or the drum dryer control system Atmoset SMT. The highlights of **Benninger** (Hall 12 / Booth 1207B) probably will be the TRIKOFLEX washing compartment and of course the original Küsters DyePad. And the **SANTEXRIMAR Group** (Hall 12 Booth 1206) with its brands Santex, Sperotto Rimar, Cavitec, Isotex and Solwa will for sure present its advanced technology and can inform about their activities in the FUTURE TEXTILE ROAD.

Monforts (Hall 12 / Booth 1207A in) from Germany will provide information on the latest developments for its advanced Montex stenters, which have already proved highly successful with Turkey's leading textile manufacturers. Integrated heat recovery and exhaust air cleaning systems are two of the latest innovations allowing manufacturers to maximize productivity and keep energy consumption down, by containing and recycling both process heat and exhaust fumes. These devices can now be integrated into the design of complete finishing lines without needing additional floor space. Intuitive, fingertip control of all parameters is provided with the latest Qualitex 800 PLC-controlled visualization system and its accompanying 24-inch monitor system. With Qualitex 800, all parameters for setting up a machine can be pre-selected to a comprehensive range of stored and well-proven recipes specific to the weight, construction and fibre content of the individual fabric being processed.

The machine can then be set to 'Monformatic Mode' to allow it to operate automatically, based on maximized pre-set values in respect of parameters such as machine speed, fabric dwell time and the fixation temperature for specific finishing operations. A series of checks and balances has been built in for both the machine and the operator, with actual performance constantly compared to the pre-set values and compensatory measures introduced either automatically or by simple manual intervention. All machine parameters are stored for further evaluation and the creation of historic trend charts and any potential problems are flagged up by instant alarms for later performance analysis.



Eco Applicator © 2018 Monforts

In addition to Montex stenters, Qualitex 800 is now also available for Thermex hot flues and condensation units, as well as the Monfortex and Toptex compressive shrinking units for woven and knitted fabrics respectively. A further development is the new Web-UI app, allowing remote visualization via smart phones and tablet devices.

Other industry-leading Monforts systems now finding rapid acceptance with manufacturers include the texCoat modular coating unit, offering an unprecedented range of coating options, and the Eco Applicator – an alternative to the traditional wet padder for significantly reducing energy and raw material costs. The Eco Applicator has been highly successful since its introduction in 2011, both integrated into new finishing lines and retro-fitted to existing ones. In many of Turkey's textile mills, the cost of running integrated manufacturing lines – especially those for fabric finishing that can involve numerous sequences of heating and subsequent drying – is now eclipsing the cost of paying people to operate them. The ability of the Eco Applicator to significantly reduce energy costs is the key reason for its rapid acceptance on the market. The soft coating unit eliminates the need for a padder, instead employing trough and roller techniques to apply the required amount of liquid/coating to the fabric. The unit itself does not actually save the energy, but by applying only the precise amount of functional finish, ensures the subsequent drying time is shorter – in some cases dramatically so.

Full details of all of the latest Monforts developments will be provided at ITM by the team from **Neotek** – the authorized Monforts representative in Turkey.

The German automation and inspection specialist **Erhardt+Leimer** (Hall 14 / Booth05A) will present a new camera application for recognition of the front and back side of a textile web. The system named “**ELSIDE**” detects the structure of the material even at high production speeds and irrespective of the material distortion; in this way it is able to differentiate between the front and back side. ELSIDE is suitable for use in all textile manufacturing processes in which incorrectly sewn sections can have a negative influence on the downstream process. Before starting production, only a short teaching procedure is required during which the matrix CCD camera captures the structure of the textile web. Afterwards, an alarm signal is issued in the event of incorrectly sewn sections.

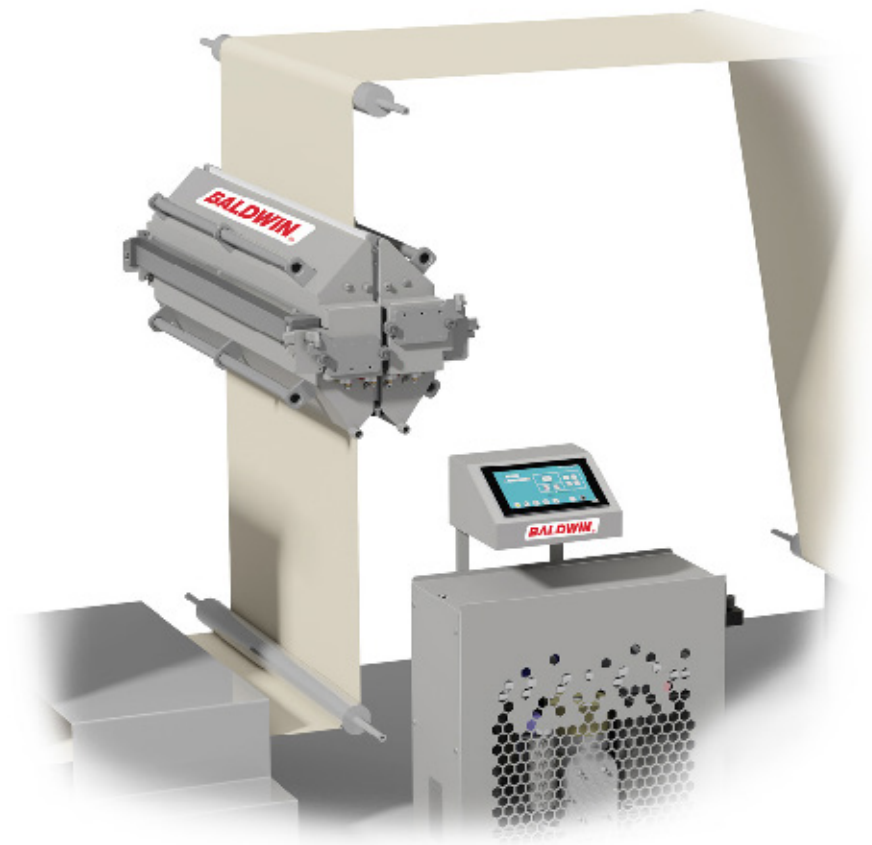


ELSIDE camera © 2018 Erhardt+Leimer

Apart from this new solution E+L will present two **ELCUT** cutting systems from its large range of products for the textile industry: the highly successful BTA80 edge cutting system, sold 1800 times (in pairs) since it was launched in 2013, and the BT 2535 tube slitter with its FE 5204 matrix drop stitch sensor, which reliably detects a very wide range of different drop stitch forms. In addition, the **ELSMART** web guiding and spreading system, the **ELSTRAIGHT** weft straightener and the camera-based **ELCOUNT** pick and course counter system will be on exhibition.

Baldwin Technology Company (Hall 12 / Booth 1213) is pleased to showcase the TexCoat G3 for the first time in Turkey. This groundbreaking Precision Application Technology product enables a sustainable textile and nonwoven finishing process, with low energy consumption, reduced water and chemistry waste, and substantial savings of production time and costs.

Launched in 2017, the innovative TexCoat G3 already has been installed at major textile finishing facilities worldwide, with proven positive results, including up to 50 percent reduced water and chemistry usage and up to 85 percent reduced total changeover time.



Texcoat G3 © 2018 Baldwin

Nonwovens

The **nonwovens** industry is a growing market in the short term and also in the long term and there have been introduced a really wide range of new machines and innovative solutions in the last years by leading companies. Especially buyers who are looking for more flexibility will not be disappointed in any case by visiting the booths of the market leaders. And of course also the workhorses offering outstanding productivity and an interesting price-performance ratio can be found there.

One of these companies with innovation in its DNA is for sure **Trützschler Nonwovens** (Hall 4 / Booth 408A). One short example is tuft blending with **T-BLEND**. Compared with previous Trützschler tuft feeding installations, the performance of the pans of the new tuft blending system has doubled. The filling process is automatically optimized and weighing is performed more quickly due to a vibration-free three-point suspension. All of this combined results in increased weighings per unit of time and more volume per discharge. Naturally, the evaluated information is also made available to the higher level Data Management System T-DATA. Visitors who are looking for excellent carding solutions should remember **Groz-Beckert** (Hall 7 / Booth 710B) is also active in the carding business since 2015 when they took over Bekaert Carding Solutions.

During ITM, visitors will see the economic and technical advantages of **Autefa Solutions** as a full line supplier for carded- crosslapped needlepunch lines and thermobonding lines. As a premium supplier, Autefa Solutions delivers machines for opening, blending and carding as well as ovens and dryers out of one hand. AUTEFA Solutions nonwovens lines meet customers' requirements for quality web formation, bonding, active weight regulation and minimal maintenance.

Autefa Solutions offers a wide product range including **Stylus** single- and double-board needle looms, tandem needle looms, velour-, structuring and patterning needle looms as well as needle looms for paper maker felts. Needle Looms for fabrics and needle looms for glass fibers insulation matts were requested by customers.

Customers like the extremely reliable and robust Stylus series (from 1 m up to 16 m working widths). The advantage of the design offers vibration free running, needle densities up to 30000 needles per meter and highest production due to stroke frequencies up to 3000 rpm in continuous operation.

Autefa Solutions is a full-line supplier and a market leader for top quality artificial leather lines. During the last years the company sold several complete lines to leading producer Alcantara, Italy and to Toray Group, Japan. The high-quality artificial leather products are widely appreciated by the most famous brands in automotive industry. Furthermore Autefa Solutions will show innovative solutions for the processing and recycling of carbon-, glass-, aramid- and natural fibers.

Hydroentanglement is the ideal method of producing nonwovens for the strong growing wipes or cotton pads markets. Autefa Solutions has developed and patented the **V-Jet injector**. The V-Jet injector is installed in several productions and led to significantly higher tensile strength at same entangling water pressure than a standard injector. The possible reduction of water pressure is in the range of 20 %. In addition, the water consumption is reduced by 10 % when using the same nozzle diameter and pitch. Depending on the application, this new technology leads to an energy saving of up to 30 %.

The new **Square Drum Dryer SQ-V** combines the advantages of a horizontal dryer with the lower space requirement of a conventional drum dryer. The nozzle system in the Autefa Solutions Square Drum Dryer SQ-V uniformly distributes the airflow in terms of speed and temperature throughout the whole working width, providing best spunlace web and surface quality results. The Square Drum Dryer SQ-V has different heating zones and operates each heating zone with optimal drying conditions.



Square Drum Dryer SQ-V © 2018 Autefa

For a capacity of 2,5 tons water evaporation per hour, the Square Drum Dryer SQ-V is using 4 chambers where the temperature, airflow and humidity profile is individually adjustable and controlled. Due to the small footprint the Square Drum Dryer SQ-V is the ideal solution for energy optimizing of existing lines.

Autefa Solutions high-speed oven **HiPerTherm HS** distinguishes itself by an approved accuracy airflow system with high production speeds up to 250 m/min. The HiPerTherm HS is a single belt oven for thermobonding and drying. The double nozzle system allows the creation of extremely uniform product treatment. The key strengths of the AUTEFA Solutions belt dryers are highest uniform airflow, the precisely adjustable temperature distribution and the ability to maintain loft. The machine has been especially designed for the manufacturing of top sheets and ADL what demands utmost accuracy.

DiloGroup (Hall 9, booth 905A) enjoyed above-average order influx in all important markets for its machines and installations and had record turnovers in 2015 and 2016. Due to an increase of about 20 %, the overall turnover in 2016 has reached a total of around 110 million Euros. This shows DiloGroup's strong position in the international nonwovens machinery business. Also the lines sold to Hassan Group and to further well-known Turkish companies in 2017 show the high importance of the Turkish market for the entire DiloGroup.

As the leading group in the field of staple fibre nonwoven production lines DiloGroup will inform about complete lines presenting the latest developments in all components. The strong demand for DILO production lines is partly due to the high attraction of needled nonwovens themselves with a yearly increase in consumption of about 6 – 7 %. Staple fibre production lines start with fibre preparation – opening and blending – from **DiloTemafa**, card feeding and cards from **DiloSpinnbau** and end with crosslappers and needlelooms from **DiloMachines**.

The quality of DiloGroup's four equipment components, opening and blending, carding, crosslapping and needling, is important to customers. A Dilo line stands for highest productivity with best web quality. This goes hand in hand with a high efficiency as the mentioned four machine groups are controlled by a single drive and control technique and fulfill all requirements for modern crosslinking and smart production. An example of an innovation is the “**Vector 200**”, a new crosslapper by DiloMachines which is unique with an infeed speed of more than 200 m/min.

Dilo machines may be used for the production of nonwovens used in automotives, as floor coverings, synthetic leather, geotextiles and for filtration, just to name the most important fields of application. Numerous fields of application such as filter media, geotextiles, roofing material, floor coverings, other technical textiles and composites require needled nonwovens with high lowload resistance. This is generally achieved by using reinforcing meshes / grids.

The Dilo **HyperTex** installation with the “**Turbotex**” scrim fabric machine of **Messrs. Ontec automation** produces a reinforcing scrim which is fed between two needlefelts and then needled together by a Hyperpunch needleloom. Furthermore, DiloGroup will inform about universal needling technology and carding systems of wide working width and high web speed for water entanglement lines. For this important, special branch of nonwoven production normal lines have a working width of about 3.8 m and medium web speeds of around 200 m/min, DiloGroup’s portfolio includes carding systems of wider working width and higher web speeds.



HyperTex © 2018 Dilo

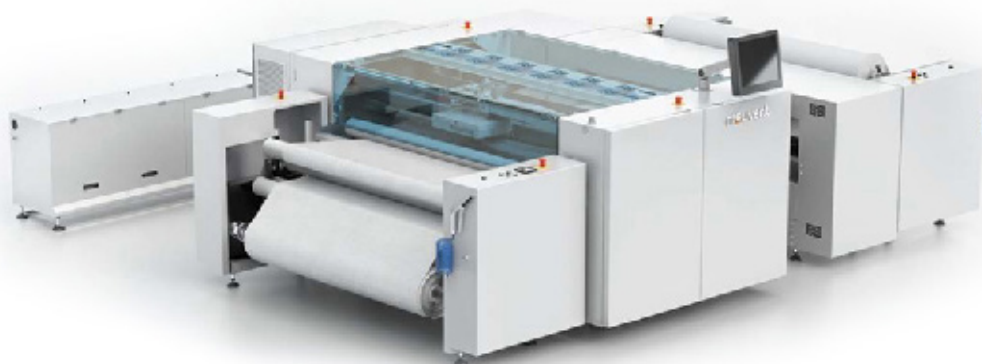
DiloTemafo offers in close cooperation with DiloSpinnbau these special carding systems with working widths exceeding 5 m and resultant web speeds of more than 400 m/min after water entanglement and drying. Reduced draft between card doffing system and winding are essential to achieve a high web uniformity and an acceptable strength ratio in machine direction to cross direction (MD:CD). DiloSpinnbau sets the standard for high productivity with the random roll technology and for best felt homogeneity by low draft. DiloGroup is very successful with these fibre preparation and carding systems in all nonwoven production lines with high productivity and quality requirements. Further important features of these special installations are the fibre preparation from DiloTemafo, the air technique for card suction, filtration and moistening which result in high line efficiency.

ANDRITZ (Hall 9 / Booth A901) will be presenting innovative non-wovens production solutions and textile finishing technologies for the Turkish market. Together with the prestigious ramisch® technologies, which are now part of the ANDRITZ portfolio, ANDRITZ has advanced to become one of the top addresses in the textile calender market. Whether for durable applications, such as geotextile, filtration, or automotive, or for disposable end-uses, such as wipes, cotton pads, medical applications or face masks, ANDRITZ offers a wide range of carding solutions to meet customers’ needs. One highlight of the ANDRITZ portfolio is the innovative TT card, which provides perfect web uniformity at very high speed.

Digital printing

Digital printing is one of the most promising future technologies within the textile industry and groundbreaking innovations have been introduced since ITMA in Milan. Market leaders like **Efi Reggiani** (Hall 6 / Booth 607), **Konica Minolta** (Hall 5 / Booth 510B), **Mimaki** (Hall 6 / Booth 604C) and **Zimmer Austria** (Hall 6 / Booth 602A) will for sure show some of their flagships.

Mouvent has announced that the TX801 – its ingenious new digital textile printer – will be demonstrated live at ITM 2018. This will be one of the company's first ever global trade shows demonstrating the TX801 – an 8-color multi-pass digital textile printer producing the highest print quality on textiles with up to 2,000 DPI optical resolution, associated with very high printing speeds.



TX 801 © 2018 Mouvent

SPGPrints (Hall 6 Stand 606B) will present its digital printing solutions using Archer® technology digital and advanced rotary screens for apparel applications. Highlights of the digital offering at the stand will be the 1850mm-wide version of the JAVELIN® printer, a programme of inks for a wide range of fabrics, and information on other digital printers using Archer technology.

The six-colour JAVELIN printer is a production scanning printer that uses SPGPrints' unique Archer technology and Fujifilm Dimatix Samba print heads to fire variable drops of ink (2-10 pL) up to 4mm to the substrate. With an output of up to 367 linear metres per hour, the JAVELIN is suited for medium output levels, and situations where more frequent changes between different fabrics and ink chemistries are required.

For higher volumes, information will be available on the stand about the SPGPrints PIKE® printer that offers high-speed, single-pass production using the same proven Archer technology. Capable of speeds up to 40 linear metres / hour, PIKE is enabling users to offer lead times of less than one week to global fast-fashion brands, for orders exceeding 100,000 linear metres. So much for the exhibitors on whom we have been able to gather information. No doubt the other well-known market leaders will also be presenting their latest technology at the ITM.



Conclusion

This is the most important machinery trade fair for the Turkish textile industry and the neighbouring region, including states as far away as the Arabian Peninsula, Asia and Africa. Following on as it does from the ITMA, the main focus of the fair will not necessarily be on familiarising visitors with the latest technology, but on providing them with more in-depth information about how to satisfy their own individual needs.

As always, the organizers have done their homework thoroughly and taken the necessary preparatory measures to ensure that the fair proves helpful to all who attend. With greatest passion Mr Güney and his team have worked hard to make the ITM 2018 a class of its own event. Everything is now in place, and slowly but surely anticipation will be growing at the textile companies in the region.

ITM 2018 is the biggest opportunity before ITMA 2019 to examine a lot of innovations in just a few hours and talk to many different manufacturers how they can give their best support to expand business and enter new markets. Individual textile companies as well as the the Turkish textile industry overall have the chance to conquer new market shares in export business.

New technology is the key to improved quality, productivity and flexibility, which in turn are the decisive factors for the ability to withstand international competition. And the ITMA as well as the ITMA Asia, which proved very successful for the machinery builders, has demonstrated just how many textile companies are up for this competitive challenge. The Turkish textile industry, which is characterised by a high level of commitment and assertiveness, will no doubt use the ITM 2018 on its own turf to establish how and what investments can help to safeguard and strengthen its own market position. For our part, we look forward to seeing some flair and innovations at the ITM in Istanbul and, as always, will be keeping you up to date with all the latest news from the event.



Sustainability divides the cotton industry

A sustainable textile industry by extension also affects the fibres from which the various textiles are made, whether they be simple items of clothing or highly complex, coated, technical fabrics. This makes it important for yarn producers and textile manufacturers to know in which direction and at what speed the relatively new factor of sustainability is changing the demand for certain fibres, and how this issue will continue to change it in the future. In the cotton industry, the internal debate surrounding sustainability has gained momentum in recent years. The sector is therefore slowly becoming concerned about its good reputation in the competition between different fibres.

As a renewable natural product, one would like to think that textiles made from cotton are particularly sustainable. Yet curiously, in the discussion surrounding sustainability cotton is viewed as an environmentally harmful fibre. The main issues are that in so-called conventional cultivation of cotton, large quantities of pesticides and water are used, and farmers are not necessarily paid an acceptable living wage. With a view to bringing about changes in regard to these issues, around 15 years ago a global non-profit called Textile Exchange was founded as an organic exchange. The aim of the initiative was then and still is to bring about a paradigm shift by convincing farmers, textile industries and fashion brands to grow eco-friendly organic cotton.

In the 15 years since its founding, the non-profit can only point to minimal success, since the market share of organic cotton in the total market has stagnated at a very low level of around 0.5% in recent years. In the 2016/17 financial year, the production of organic cotton fell to 107,980 tonnes, down from 112,488 tonnes in 2015/16 - a drop of 4%.

There was a similar reduction in the acreage of organic cotton, which fell from 353,303 ha in 2016 to 302,562 ha in 2017. Organic cotton therefore remains only a very small proportion of overall production. The leap into mass markets with significant crowding out is not happening.

There is nevertheless a positive development in organic cultivation areas on the whole. In its annual report, Textile Exchange states that the total acreage dedicated to organic cultivation rose by 6.6 million hectares to 50.9 million hectares in 2015 - a huge jump of 15%. It remains to be seen whether, in the years to come, organic cotton can also reap the benefits of this growth.

In the context of sustainability, however, organic cotton has established itself as an alternative concept to conventional cotton cultivation, and between these two extremes more sustainable methods of cultivation have emerged which do not have such stringent requirements. Textile Exchange defines this type of cotton as 'preferred material', as it is at least more sustainable than conventionally grown cotton. These include Cleaner Cotton, Bayer e3, Cotton made in Africa, (CmiA) and the Better Cotton Initiative (BCI).

If there is one clear winner in the race toward sustainability, it has to be BCI. The Better Cotton Standard System is a holistic approach to sustainable cotton production which covers all three pillars of sustainability: environmental, social and economic.

Better Cotton is produced by farmers who minimize the harmful impact of crop protection practices, use water efficiently and care for the availability of water, care for the health of the soil, conserve natural habitats, care for and preserve the quality of the fiber and promote decent work.



TextileExchange Founder LaRhea Pepper speaking at the 2017 conference © Textile Exchange

The system is designed to ensure the exchange of good practices, and to encourage the scaling up of collective action to establish Better Cotton as a sustainable mainstream commodity.

And yet, BCI is not actually organic cotton. The production method is much the same as the approach used in conventional cotton cultivation, but tries to optimise its methods with regard to environmental protection, yields and farmer welfare. For this reason, and because BCI also permits genetically modified plants, it is not viewed as sustainable by hardliners.

Let's take a look at the development of Better Cotton. At the start of the 2010/11 season, 73,647 tonnes of BCI cotton were produced by 28,368 licensed farmers across 94,542 hectares of land. Since then, the cultivated area and the production output has increased more than thirtyfold.

In the 2015/16 season, BCI increased the production to 2,504,613 tonnes in comparison with 1,945,699 tonnes in the season before. That equates to a growth of around 29% and constitutes a 12% proportion of the total worldwide production of cotton. The number of licensed farmers rose from 1,220,843 to 1,528,527 and the acreage increased from 2,599,356 ha to 3,491,263 ha. All of this has surely made Better Cotton one of the most important factors in improving the sustainability of cotton production.

Yet it is also a factor that is difficult to recognise, since Better Cotton is not labelled and therefore has no market presence, for example in the form of a brand or stamp. Better Cotton can be acquired as such through members of the initiative.

Surplus quantities are sold on the market, at which point the cotton loses its special classification. In 2016 54 retailers and brands sourced 461,000 metric tonnes (MT) as Better Cotton against a target of 500,000 MT. Spinners sourced 807,000 MT as Better Cotton. In the annual report BCI also gives an outlook to 2020. They write: "By 2020, our aim is that BCI Farmers will be producing 8 million metric tonnes of Better Cotton. We're working towards retailer and brand uptake of 2.4 million metric tonnes as Better Cotton."



Cotton bales in Sudan © Bremer Baumwollbörse



Cotton seed in India © Bremer Baumwollbörse



Cotton bud in Brasil © Bremer Baumwollbörse



Elke Hortmeyer, Director of Communications at the Bremen Cotton Exchange © Bremer Baumwollbörse



f.l.: Prof. Hermann, FIBRE; President Hammer, Bremen Cotton Exchange; Martin Guenther, Senator of Economics, Labor and Ports of the Federal State of Bremen at the 2018 Bremen Cotton Conference © Bremer Baumwollbörse



Alan McClay, BCI Chief Executive Officer at BCIGA2016 © BCI

The disparity between the quantity that is sold off and the quantity produced, which we made reference to in a previous edition, was criticised by PAN UK, Solidaridad and WWF in the Cotton Ranking Report 2017.

In the report they stated: „While cotton produced through sustainable practices is expected to make up 15% of global supply for the 2016/17 season and 20% in 2017/18, only just over a fifth (21%) of this is actually sourced by companies as sustainable. The rest is sold as conventional cotton with brands and retailers citing low consumer demand, complexity of supply chains and additional cost as blocks to sourcing.“ Isabelle Roger, Global Cotton Programme Manager, Solidaridad, commented in the report: “There are still too many companies doing little or nothing about sustainable cotton.

Public commitments by CEOs to sourcing are critical to sector change and making sustainable cotton the norm.”

Curiously, this critical analysis of the sourcing of BCI Cotton of all things caused the Bremen Cotton Exchange to defend itself vehemently against the assessment of the sustainability of conventional cotton. Elke Hortmeyer, Director of Communications at the Bremen Cotton Exchange, stressed in a statement: “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.” However, in the news release no new facts were mentioned regarding the use of water and pesticides in the conventional cultivation of cotton.



Textile Exchange Organic Cotton Market Report 2017

Better Cotton Growth & Innovation Fund
Annual Report 2016

Sustainable Cotton Ranking 2017

It was simply stated that, according to the most recent estimations of the ICAC, more than 200 million people are employed in the cotton industry worldwide, and that an assessment of the industry's environmental footprint based on incorrect or outdated facts could lead to a decline in demand for cotton, which in turn would threaten many livelihoods.

Having said this, it is true that the reports about the extensive usage of water and pesticides in cotton cultivation often refer to sources that are more than 10 years old. In theory, a great deal can change over the course of a decade. Now it is up to the Bremen Cotton Exchange to put newer facts on the table. One opportunity to do so would be at the International Cotton Conference, for example, taking place in Bremen from 21st to 23rd March under the motto 'Cotton Insights', or alternatively in the annual report of the Bremen Cotton Exchange.

In any case, the ICAC has already instigated significant changes on the path to improved sustainability. In August 2017 they invited Alan McClay, BCI Chief Executive Officer, to be a member of ICAC's Expert Panel on the Social, Environmental and Economic Performance of Cotton (SEEP).

In the debate surrounding sustainability in the cotton industry, the textile producer will doubtless be interested in the impacts that this change in trend will have on improving the sustainability of production outputs, prices, and the corresponding demand from the market. It should be noted that the annual production output of cotton has moved laterally in recent years, whereby the largest quantity of 26.84 million tonnes was produced in the 2012/13 season, and the smallest quantity of 21.5 million tonnes was produced in the 2015/16 season.

There are currently 18.77 million tonnes in storage and the demand, or rather the annual consumption, most recently stood at 24.52 million tonnes. The figures relating to the yield per hectare also make particularly interesting reading. The yield for organic cotton is 357kg/hectare, 717kg/hectare for BCI cotton and 789kg/ha for cotton overall according to information provided by the ICAC, which also indicates that yields vary drastically between individual growing countries.

India remains the world's largest producer with 2017/18 production expected to be 6.2 million tons with 8.7% growth. The second largest producer, China, has production currently projected at 5.2 million tons with a 7.1% increase.

Pakistan's production projections for 2017/18 show a 11.5% increase to 1.9 million tons. Production increase in Turkey is estimated to grow 18% to 829,000 tons. Other major cotton producing countries are expected to have positive growth attributed to increased area and yields.

International cotton prices have continued to move upward over the last few months as the season has been underway. From the season low of 77 cents per pound at the start of season, prices are at a season high at the end of this calendar year up to 88 cents per pound.

Examining the development and the forecasts, several things are set to improve in the coming years with regard to sustainability in the cotton industry, however without taking into account the factor of genetic modification. Since BCI is also grown by conventional means, everything in fact points towards adopting the best practises for the cultivation of all cotton. The 8 million tonnes predicted for 2020 - one third of total production - is a step in the right direction. It would be in the interest of both sustainability and cotton itself if the industry were to implement these steps as quickly as possible, so that cotton can once more focus on the values and opportunities of its textile products which could then be monetised as the demand for fibres starts to grow. To this end, it will be extremely important to raise the image of premium natural fibres back up to the highest level. And these efforts must go hand in hand with genuine sustainability, unity within the industry and maximum transparency for the consumer.

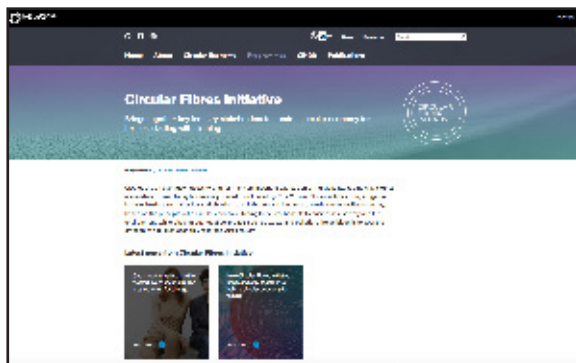


*Closing the loop is the
(distant) future!*

From time to time something is said at a conference that makes you sit up and take notice. That's exactly what happened at the Dornbirn Man-Made Fibers Congress 2017. When asked a question about the future of the European textile industry in 2030, Uday Gil (CEO of Indorama Ventures) responded: "In 15 years Europe will be very much in the textile business. But not the same way as today. It will use new tools and products, which will be sustainable: regenerated or Biopolymers." Gil's assertion about regenerated textiles, i.e. those that make use of recycled materials, shows that the vision of a "circular economy" for Europe is increasingly catching on in the textile industry too.

This is particularly noteworthy since recycling textiles is hitherto regarded as being very difficult, especially in the post-consumer sector. So if this kind of trend is to be implemented within the next 10 years, considerable technological advances will be required. For textile companies, this means assigning a permanent place to the issue of recycling on strategic agendas. This affects initiatives and research projects just as much as individual innovative recycling processes. There are several interesting developments in this regard.

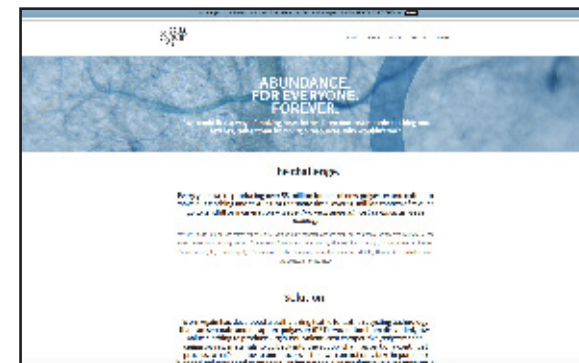
A new initiative is the **Circular Fibres Initiative**, launched in May 2017 at the Copenhagen Fashion Summit. It brings together industry leaders and other key stakeholders to collaborate and innovate towards a new textiles economy, based on the principles of a circular economy. Aiming to deliver benefits to businesses, society and the environment, while phasing out negative impacts such as waste and pollution, the ambition is to spur the creation of a textiles economy fit for the 21st century. Their latest report *A new textiles economy: Redesigning fashion's future* identifies the fashion industry's current take-make-dispose model as the root cause of its environmental problems and economic value loss. Every second, the equivalent of one garbage truck of textiles is landfilled or burned. An estimated USD 500 billion value is lost every year due to clothing that's barely worn and rarely recycled. If nothing changes, by 2050 the fashion industry will use up a quarter of the world's carbon budget.



<https://www.ellenmacarthurfoundation.org/programmes/systemic-initiatives/circular-fibres-initiative>



<http://www.resyntex.eu/the-project>



<http://wornagain.info>

The report proposes a vision for a new textiles economy aligned with the principles of a circular economy: one that is restorative and regenerative by design and provides benefits for business, society, and the environment. According to the report “realising this vision of a new global textiles system relies on four core ambitions: phasing out substances of concern and microfibre release; transforming the way clothes are designed, sold and used to break free from their increasingly disposable nature; radically improving recycling by transforming clothing design, collection, and reprocessing; and making effective use of resources and moving to renewable input.”

RESYNTEx is a is a €11 million EU-funded research project which aims to create a new circular economy concept for the textile and chemical industries which has been launched already in 2015. Using industrial symbiosis, it aims to produce secondary raw materials from unwearable textile waste. Core project aims are to design a complete value chain from textile waste collection through to the generation of new feedstock for chemicals and textiles, to improve collection approaches while increasing public awareness of textile waste and social

involvement, and to enable traceability of waste using data aggregation. The collected data will evaluate the performance of the new value chains by means of a life cycle assessment (LCA) and life cycle costing (LCC). Furthermore RESYNTEx wants to develop innovative business models for the chemical and textile industries and to demonstrate a complete reprocessing line for basic textile components, including liquid and solid waste treatment. RESYNTEx has 20 project partners from across 10 different EU member states including EURATEX.

There are numerous further initiatives that have similar scopes: they want to promote a rethink on a global scale and apply pressure, to bring project partners to the table and to develop a sustainable vision for the future. They also have the important task of stimulating and supporting research, given that the change in trend towards a circular economy in the textile industry above all requires technical innovations where processes and products are concerned. Efforts have already been made in this regard with increasing success.

Let's first take a look at a couple of fundamental elements so as to improve our understanding. The differences in recycling textiles fundamentally boil down to two methods: mechanical and chemical recycling. The mechanical process is primarily used for cotton, and essentially involves shredding the textiles until they have returned to a fibrous state.

Since recycled fibres are shorter they are somewhat lacking in strength and can therefore only be used as part of a mix of fibres or for low-quality textiles and non-wovens. Chemical recycling relates to all types of man-made fibres, in particular polyester. Because chemical recycling involves the molecular level, recycled polyester does not differ from virgin polyester. The first ever commercial recycling technology which can recycle used textile polyester fibres into new polyester has been developed by the Japanese company Teijin. There are certainly approaches in the technical processes to recycle textile products.

There were and indeed are still many challenges to be overcome, such as the market readiness of these processes, scalability, costs and availability. It should also not be forgotten that many textiles are blended fabrics made up of different materials, which moreover contain dyes and other additives. Even so, in recent years a range of very interesting new processes have been developed to address these problems, which take existing approaches and advance them.

Already in 2015 pioneering start-up **Worn Again** joined forces with fashion retailer **H&M**, and luxury, sport & lifestyle Group, **Kering**, to bring to market their revolutionary innovation in recycling. Worn Again's textile-to-textile chemical recycling technology has been the first of its kind able to separate and extract polyester and cotton from old or end-of-use clothing and textiles. Once separated, the aim is for this unique process to enable the 'recaptured' polyester and cellulose from cotton to be spun into new fabric creating a 'circular resource model' for textiles.

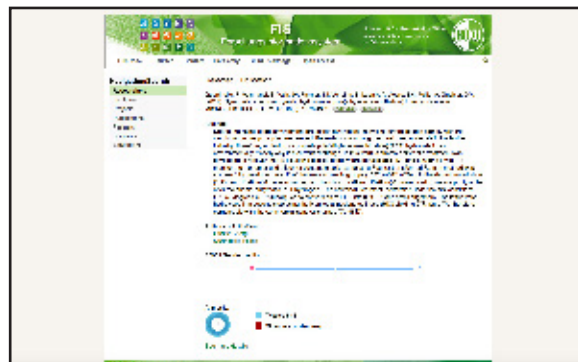
In April 2017, at the annual meeting of the **American Chemical Society**, researchers from Finland's **Aalto University** presented a new recycling method named **Ioncell-F technology** which they have developed in collaboration with the Universities of Borås and Helsinki.

Herbert Sixta, Ph.D., who heads the biorefineries research group at Aalto University, and his team found an ionic liquid — 1,5-diazabicyclo[4.3.0]non-5-ene acetate — that could dissolve cellulose from wood pulp, producing a material that could be spun into fibers.

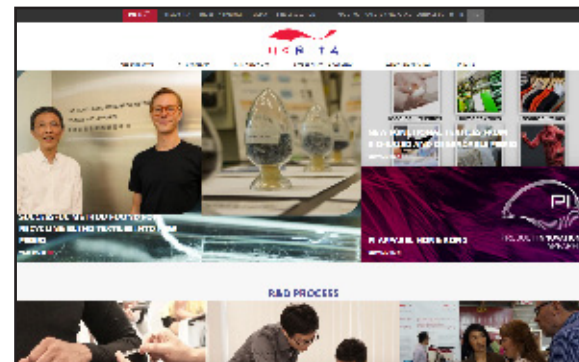
Later testing showed that these fibers are stronger than commercially available viscose and feel similar to lyocell. Ioncell-F fibers feel soft and are strong even when wet. Because of their high tenacity, Ioncell-F fibers are also promising for technical applications, e.g. for composites.



http://bio2.aalto.fi/en/research_groups/biorefineries/ioncell/



https://forschung.boku.ac.at/fis/suchen.publikationen_uni-autoren?sprache_in=en&ansicht_in=&menue_id_in=102&-publikation_id_in=111774



<http://www.hkrita.com>

Building on this process, the researchers wanted to see if they could apply the same ionic liquid to cotton-polyester blends. In this case, the different properties of polyester and cellulose worked in their favor and they were able to dissolve the cotton into a cellulose solution without affecting the polyester. The polyester could be filtered out after the cotton had dissolved and then it was possible without any more processing steps to spin fibers out of the cellulose solution, which could then be used to make clothes.

The ionic liquid used in the Ioncell-F process is an environmentally friendly and inherently safe alternative to the solvents used in current man-made cellulosic fiber production processes.

To move their method closer to commercialization, Sixta's team is testing whether the recovered polyester can also be spun back into usable fibers. In addition, the researchers are working to scale up the whole process and are investigating how to reuse dyes from discarded clothing.

In June **Quartinello et al.** from the **University of Natural Resources and Life Sciences, Vienna (BOKU)** published an scientific article 'Synergistic chemo-enzymatic hydrolysis of poly(ethylene terephthalate) from textile waste'.

The scientists wanted to achieve a complete poly(ethylene terephthalate) (PET) hydrolysis in an environmentally friendly way because recycling strategies that comply with the circular economy principles are needed and polyesters are among the most used materials in the textile industry. In this work, a chemo-enzymatic treatment was developed to recover the PET building blocks, namely terephthalic acid (TA) and ethylene glycol. To monitor the monomer and oligomer content in solid samples, a Fourier-transformed Raman method was successfully developed.

A shift of the free carboxylic groups (1632cm^{-1}) of TA into the deprotonated state (1604 and 1398cm^{-1}) was observed and bands at 1728 and 1398cm^{-1} were used to assess purity of TA after the chemo-enzymatic PET hydrolysis.

The chemical treatment, performed under neutral conditions (T=250 degrees C, P=40bar), led to conversion of PET into 85% TA and small oligomers. The latter were hydrolysed in a second step using the Humicola insolens cutinase (HiC) yielding 97% pure TA, therefore comparable with the commercial synthesis-grade TA (98%).

In September 2017 the non-profit **H&M Foundation** and **The Hong Kong Research Institute of Textiles and Apparel (HKRITA)**, which work together in a four-year innovative partnership, announced they have found groundbreaking solutions to recycle blend textiles into new fabrics and yarns – without any quality loss.

HKRITA has together with **Ehime University** and **Shinshu University in Japan**, successfully developed a hydrothermal (chemical) process to fully separate and recycle cotton and polyester blends. The recovered polyester material can be reused directly, without any quality loss. The hydrothermal process uses only heat, water and less than 5% biodegradable green chemical, to self-separate cotton and polyester blends. This fibre-to-fibre recycling method is cost effective, and there's no secondary pollution to the environment, ensuring the life of the recycled material is prolonged in a sustainable way. The technology will be licensed widely to ensure broad market access and maximum impact. The project partners name the finding a major breakthrough in the journey towards a closed loop for textiles.

In October 2017 at **Paris Fashion Week** in **Miroslava Duma's Fashion Tech Lab** the Miami-based company **Osomtex** showcased their upcycled fibers made from discarded post-consumer waste. Patricia Ermecheo CEO & Founder of Osom Brand and OSOMTEX wants to disrupting the fashion industry with her patent pending upcycled yarns.

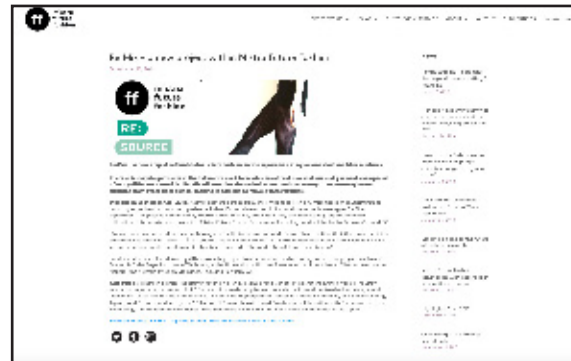
On its website the company says all of their products are made entirely of their high quality upcycled thread from discarded garments and no water or dyes are used to make their clothes.

Also in October 2017 **Åsa Östlund** et al published their work "Re:Mix – Separation and recycling of textile waste fiber blends" as a "Mistra Future Fashion Report". **Mistra Future Fashion** is a cross-disciplinary research program, initiated and primarily funded by Mistra. It holds a total budget of SEK 110 millions and stretches over 8 years, from 2011 to 2019. It is hosted by RISE in collaboration with 13 research partners, and involves more than 40 industry partners.

The goal within Re:Mix I has been to develop positive strategies for separation of different fibres from a fibre blend prior to chemical recycling, according to a circular economy. This was achieved by a sound and humble dialogue ensuring that the future research and development will be relevant, applicable and unique.



<http://www.osombrand.com>



<http://mistrafuturefashion.com/mistra-future-fashion-strengthens-remix-project/>



<http://www.stfi.de/en/stfi/news/details/article/recycling-von-smart-textiles-als-neuer-kompetenzbereich-am-stfi.html>

The project partners identified two separation methods, which might work separately or in combination, 1) a melting process of the synthetic fibres, so called Thermomechanical separation; and 2) a design of new specific enzymes that will act as biocatalysts for degradation of a specific polymer which will further facilitate the re-synthetization of the polymers.

Within the thermomechanical separation the aim was to find out the prerequisites for the recycling of poly- amide and elastane fibre blends without separating the materials first. The method gives nylon or elastane pellets, which can be used as raw material in processes such as spinning and moulding.

And in November 2017, experts in the lecture programme of the “re-4tex - recycling for textiles” colloquium, which is hosted annually by the **Sächsisches Textilforschungsinstitut e.V. (STFI)** (Saxon Textile Research Institute) provided insights into new processes and the state of technology in various task fields of activity in recycling.

David Hehenberger of **Next Generation Recycling Machines** presented a new and field-tested process for up-cycling PET fibres and non-woven fabrics called LSP - Liquid State Polycondensation.

Thierry Masi of **Laroche S.A.** and **Klaus Völker** of **NoWoTec** spoke about the latest developments in the recycling of mattresses with PU components. Lastly, **Cordula Cleff** of **Tenowo** reported on the differences between recycled carbon fibres during processing and conversion into non-woven fabrics. Furthermore, the STFI presented a new area of competence under the heading of Recycling of Smart Textiles, to which it will immediately apply itself using the existing core skills of the Centre for Textile Lightweight Engineering, precisely reflecting its future-oriented research and development work. There is another area that is important in the recycling of textiles that is also delivering good news. In November 2016, after years of development, testing and tireless innovation, the FIBERSORT consortium has received funding support from the European Commission INTER-REG NWE programme to optimise, validate and launch the FIBERSORT technology in the global market.

The FIBERSORT technology is the world's first automated sorting technology that is able to sort large volumes of mixed post-consumer textiles based on fiber composition of fabric. Commercialisation of the new technology will bring us one step closer to the closed-loop textiles industry.

These are the many interesting approaches in differing but equally important areas, and one might be inclined to state that textile recycling has taken a decisive step forward, thus substantiating **Uday Gil's** outlook for the future. For now, things are still at a very early stage.

First it remains to be seen whether the research into the market readiness and industrial applications of recycling succeeds, and then whether the new processes and products will be able to establish themselves on the market. It should not be forgotten, however, that changes often pick up speed as they progress. And, generally speaking, with this trend it is very difficult to predict when it will take off.

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Spinning

Rieter in Vietnam: Successful Symposium and Reasons to Celebrate

Shaping the future - Oerlikon Barmag at the JEC 2014

Rieter with significant increase in new orders and sales

Weaving

Schönherr and Stäubli demonstrating innovative developments at DOMOTEX Hannover.

Stäubli at ITMA 2014

Knitting & Hosiery

The MIT 2014/15 - the flagship of the new Mahle Textex Tech Line series

Mayer of KARI-MAYER and HBA on track

Others

Kelly Givens Appointed Director of Business Development, Sports/Leisure, W-SYSTEMS Performance

Lectra appoints Edouard Miasquin Member of the Executive Committee

Newsletter Info

The information service of Texdata, the Technical Database and Paper's Guide for the international textile industry.

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Symposia and Reasons to Celebrate

The 2013 symposia on 15 November in Ho Chi Minh City (Bangor) and on 19 November in Hanoi generated great interest amongst Rieter customers. In addition, during the Vietnam visit space was also found for future and past.

Shaping the future - Oerlikon Barmag at the JEC 2014

Modern solutions for modern material - different components for manufacturing compound materials will be the focus of the Oerlikon Barmag stand at this year's JEC trade fair in Paris. Between March 11 and 13, the machine and systems builder will be informing visitors about new and proven products and services in pump construction and about windows for specialty glass at the composites industry trade fair (stand number: P06 / Hall 7-2).

Rieter with significant increase in new orders and sales

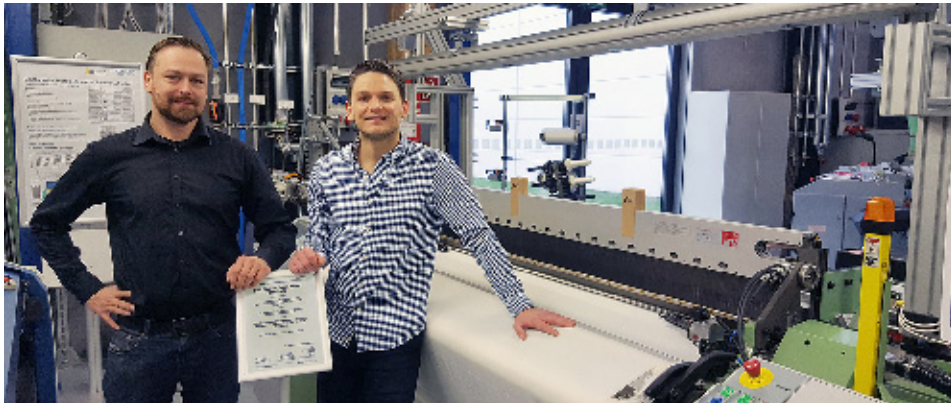
Rieter recorded a pleasing trend in business in the 2013 financial year. The improvement in its market position enabled the company to post significant growth in both order intake and sales. Order intake of 1.758.4 million CHF was 52% higher. Sales totaled 1.035.3 million CHF, equivalent to an increase of 17%. Rieter had a backlog of orders in hand of some 765 million CHF at the end of 2013. This will ensure a high capacity utilisation until well into 2014.

Schönherr and Stäubli demonstrating innovative developments at DOMOTEX Hannover.

The leading trade fair for floor coverings was held in Hannover from 11-14/01/2014. 1,350 companies from 57 different nations showcased their latest products and collections at the Hannover Exhibition Center, having attracted a total of approximately 40,000 visitors from

Weaving

Cost savings through image processing system



RWTH doctoral candidates Marcin Kopaczka (LfB) und Marco Saggiomo (ITA) with the award-winning image processing system (f.l.t.r., source: ITA)

Researcher MSc Marco Saggiomo from the Institut für Textiltechnik (ITA) and graduate engineer Marcin Kopaczka from the Institute of Imaging & Computer Vision of RWTH Aachen University (LfB) developed an image processing system for weaving machines that provides comprehensive benefits for woven fabric producers. The image processing system enables the weaving machine to detect faulty pickings autonomously. The application of the image processing system leads to cost savings of at least 2,210 euros per year for each weaving machine in comparison to manual faulty picking repairs. The researchers won the “Best Student Paper Award” within the framework of the 7th International Conference on Pattern Recognition Applications and Methods (ICPRAM).

STFI begins research project titled “Batch tracking in the weaving sector”

STFI has begun a project supported by the Federal Ministry for Economic Affairs and Energy, which aims to find a solution enabling end-to-end tracking in textile companies using various wireless communication technologies and the weaving sector as an example. The principal aim is to develop software components enabling the implementation of end-to-end tracking solutions, as well as a guideline for implementing, using and expanding the end-to-end tracking solution. The project also intends to implement demonstrators for the areas of order placements, area monitoring and error flagging, as well as for internal and external information usage. The project will focus on the use of modern information and communications technology.

Fibre & Yarn

BleNaBis: Climate-neutral carpet fibres - awarded by KlimaExpo.NRW

The surfaces of carpets are generally made of wool or synthetic fibres such as polyamide. In collaboration with other European research institutes, the Institut für Textiltechnik (ITA) of RWTH Aachen University is currently develops a climate-neutral yarn based on renewable raw materials, which will not only match the quality of polyamide, but can also be produced in a more energy efficient way.

News from Textile Research Centers



BleNaBis process steps

The fibres consist of linseed fibres and a sustainable eco-polyamide fibre. The linseed fibre comes from flax fibre which is extracted from the stems of flax plants that are no longer needed.

The eco-polyamide fibre consists of 70 percent castor oil, which is obtained from the castor oil plant, a plant that does not compete with the food production sector. The combination of these two fibres will make the carpet durable and of high quality. The fibre blend is expected to cut the climate footprint of a carpet by 50 %.

New technology for finest fibers of high performance polymers



Hot gas filter bag of PPS-melt-blow membrane. Photo: DITF

Finest fibers ($< 1 \mu\text{m}$) open new applications in the areas of personal protective textiles, hot gas fine dust filtration, battery separators and fuel cell membranes. Currently production plants are limited in terms of temperature and pressure. The Federal Ministry for Economic Affairs and Energy supports a consortium for the development of an energy optimized finest fiber technology with about 600.000 €.

The process technology is designated for temperatures up to 450 °C and high pressures. The hot air stream required for the process will be optimized including energy recovery. A new high temperature resistant filter band will ensure the homogeneous lay down of the finest fibers. In the frame of a completed public funded research project (AiF 17563), the “Deutsche Institute für Textil- und Faserforschung Denkendorf” (DITF) have shown that finest fibers may be produced even from high viscous polymer melts. A nonwoven of these finest fibers can e.g. be used in hot gas filtration.

The cooperative research project focuses on the energy optimization of direct spinning plants for high temperature polymers (PEEK, PPS, PPA) to finest fiber webs. Both, the melt-blow technology and the energetic favorable Nanoval-process will be improved for temperatures up to 450 °C. Based on an existing melt-blow line the process will be fully analyzed, evaluated and simulated regarding energy consumption and its fluid dynamics with respect to melt process and fiber formation; air processing and recovery; fiber laid down and web formation. A Nanoval-spinneret with multirow concept designed for high performance polymers complement the development.

www.ditf.de

Nonwovens

Improved finishing process for non-woven materials developed at STFI

As part of a joint project with Reicofil, the Saxon Textile Research Institute e.V. has developed a process that allows for finishes to non-woven materials with a fluorocarbon resin, as opposed to full immersion, to be replaced by an energy-efficient and material-saving minimal input system. This took place against the backdrop of the ongoing replacement of fluorocarbon formulae based on C8 chemicals with shorter-chained C6 molecules. Three processes were developed, which proved to be suitable for inline wet finishes.

Technical textiles

High-tech textiles – a cross-industry inspiration

Between November 30 and December 1, one of the most important conventions for the European technical textile industry took place in Stuttgart. The Aachen-Dresden-Denkendorf-International Textile Conference brought together 600 professionals from 28 countries, across four continents from the textile, textile-machinery and various user-industries. Economy and research experts reported on research results and marketable textile innovations concerning high performance fibers, fiber composites and medical textiles.

News from Textile Research Centers

Held annually at one of the three locations, the conference recently premiered in Stuttgart. Together with this year's partner country USA, this year's conference was characterized by trend-setting developments and upheavals in textile technology. The focus was on, among other things, additive manufacturing methods such as 3D textile printing, as well as smart textiles, which are currently being brought to the forefront by IT companies from the USA as 'intelligent problem solvers'.



Opening Speakers from this year's partner country USA (David Hinks, College of Textiles, NCSU, Götz T. Gresser, DITF, James Herman, amerikanischer Generalkonsul, U.S. Konsulat Frankfurt, Michael R. Buchmeiser, DITF, Raymond G. Boeman, IACMI Institute)

Textiles for construction

ABE Innovation Group Textile Construction was founded

The AACHEN BUILDING EXPERTS e. V. promotes innovative construction in the three core areas of technical building equipment (TGA), Building Information Modeling (BIM) and innovative materials. At the AACHEN BUILDING EXPERTS event "Product innovations - with the support of universities" at the TFI Aachen GmbH, the innovation group "Textile Building" was founded in the latter area.

Responsible for the group is the Institut für Textiltechnik (ITA) of RWTH Aachen University headed by Prof. Thomas Gries and Dr. Andreas Koch. The aims of the platform and the "Textile Building" innovation group are the development and acquisition of joint research projects in the "Building & Living" application area. In general, this includes all textile-based products for building construction, civil engineering and interior design.

On November 29 - 30, 2018, the innovation group of AACHEN BUILDING EXPERTS will hold the conference part "Textile Construction" within the framework of the Aachen-Dresden-Denkendorf International Textile Conference and will provide information on the latest developments in the use of technical fibres and textiles in the construction industry.

www.aachenbuildingexperts.de

Automotive textiles

Up to 5% weight reduction in automotive applications



Prof. Malte Brettel (RWTH Aachen University), Robert Brüll (ITA) and Prof. Thomas Gries (ITA) with the RWTH Innovation Award (from left to right), Photo: Andreas Schmitter

Research assistant Robert Brüll, Institut für Textiltechnik (ITA) of RWTH Aachen University, headed by Prof. Thomas Gries, won the second price of the RWTH Innovation Award. He was honoured with the award for his project “OrganoGlas”.

OrganoGlas designates an innovative and transparent fibre-reinforced plastic. It is transparent, high strengthening, lightweight, easily malleable and recyclable.

Until now, the mobility sector (automobile, railway, aerospace) uses comparatively heavy glass parts. OrganoGlas reaches 10 times higher stabilities than laminated glass. Within automobile manufacturing it can achieve up to 5 % reduction in weight in a complete vehicle. Windows in airplanes could be enlarged by simultaneously reducing weight. Furthermore, with the application of OrganoGlas, new concepts in design and structuring, e.g. transparent A-pillars in automobiles are possible.

“überMORGEN” event provides outlook on mobility and production in the future

The research campus ARENA2036 has evolved into a beacon for the issues of production, work and future mobility in the context of the digitalisation of the automotive industry. ARENA2036 is the world’s largest and leading research campus on adaptable production including functionally integrated lightweight design.

News from Textile Research Centers



The participants of ARENA2036 with Minister President Kretschmann, Research Minister Theresia Bauer and European Commissioner Oettinger. Photo: ARENA2036

In February 2018 ARENA 2036 presented the results and visions it has achieved and conceived so far at the two-day “überMORGEN” event. Peter Froeschle, managing director of ARENA2036, led the guests into the future - represented by the four topic groups of Production2036, Work2036 and Mobility2036, using Digitalisation2036 to join the other topics together. At ARENA2036, 31 partners combine basic scientific research with industrial applications under a single roof on the University of Stuttgart’s Vaihingen campus.

They work in a 10,000 m² facility on pre-competitive solutions that each partner can later use for their own purposes. The research portfolio has made rapid progress since 2013.

During this initial funding phase, around 90 research projects were launched. As part of its work at the research campus, one of the founding members, DITF, is researching functional integrated lightweight designs (LeiFU) and the creation of digital prototypes (DigitPro).

www.arena2036.de

Assembly Innovation Award 2018 for FibreTEC3D

Mr Niklas Minsch, MSc, of Daimler AG and external doctoral student at the Institute for Textile Machinery and High Performance Material Technology (ITM) at the Technical University in Dresden, received the Assembly Engineering Innovation Award 2018 on 21st February 2018 during the “Assembly Engineering 2018” conference in Bad Nauheim for the progress he has made on the topic of “FibreTEC3D - a cost-effective approach for ultra-light operating equipment”. FibreTEC3D is an innovative modular construction set for ultra-light production equipment, which is based on a new type of manufacturing process for carbon fibre composites.

News from Textile Research Centers

A three-dimensional coreless winding method is essential for this process, which was developed at Daimler's 'TECFabrik' factory during the course of Mr Minsch's doctoral studies, in cooperation with scientists from the Department of Information Technology at the Technical University of Dresden.



Mr M. Sc. Niklas Minsch and Dr. Matthias Müller (both Daimler AG) at the Assembly Awards ceremony © Mareike Bäumlein/Vincenz Network GmbH & Co. KG

People

STFI welcomes new Executive Scientific Director

At the beginning of the year, STFI expanded its management board with an excellent scientist and recognised expert in digitalisation in the field of technical textiles. Dr Yves-Simon Gloy takes over with immediate effect the role of Executive Scientific Director. The previous sole Executive Director, Mr Andreas Berthel, continues in his role as Commercial Director.



Executive Scientific Director Dr.-Ing. Yves-Simon Gloy (left) and Commercial Director Dipl.-Ing.-Ök. Andreas Berthel.

Dr Richard Müller successfully defends his doctoral thesis

On 26th January 2018, Dr Richard Müller defended his completed doctoral thesis titled “The use of process analysis and quality control loops to prevent errors in the production of gas diffusion layers” to a board of examiners chaired by Professor Modler (Institute of Lightweight Structures and Polymer Technology). Dr Müller carried out the scientific investigations for his dissertation externally simultaneously with his role at Freudenberg Performance Materials SE & Co. KG and in close collaboration with the Professor of Textile Technology at ITM, and submitted the dissertation to the Faculty of Mechanical Engineering at TU Dresden. The scientific side of his thesis was supervised by Professor Cherif at the ITM, and by Dr Duda at Freudenberg.



Dr Richard Müller with the board of examiners © ITM/TUD

Sustainability

Recycling of smart textiles added as a new area of expertise at STFI

During the “recycling for textiles” (re4tex) colloquium, the Saxon Textile Research Institute presented a new area of competence in the form of ‘Recycling of Smart Textiles’. Using the existing unique core skills relating to the recycling of carbon fibres of the Centre for Textile Lightweight Engineering, the STFI will with immediate effect and precisely reflecting its future-oriented research and development work dedicate itself to this complex, innovative and ever expanding research field. These experts can call upon many years of experience and considerable expertise both in textile recycling and in the development and certification of special textiles.

Industry 4.0

Advantages of Industry 4.0 and increased productivity in circular knitting machines

On November 20 and 21, 2017 the Mass Customization & Personalization Conference (MCPC) took place in Aachen, Germany, on the topic “Customization 4.0”.

Professor Dr Thomas Gries from the Institut für Textiltechnik (ITA) at RWTH Aachen University held a lecture on „Smart Customization in the Textile Industry“.

News from Textile Research Centers



Lecturers at MCPC 2017 (from left to right: Prof. Dr. Thomas Gries, ITA; Daniel Bücher, ITA; Kristina Simonis, ITA), source: InTIME e. V.

Using the Digital Capability Center in Aachen, Germany, and the SPEEDFACTORY as examples, he presented the possibilities of Industry 4.0 in the field of textile technology. With the DCC, the ITA illustrates the possibilities of digital assistance systems in order to develop customer-specific benefits for textile and non-textile industrial partners in workshops. The SPEEDFACTORY symbolises a step into the future of textile production and shows the development of new decentralised production concepts in Europe. Daniel Bücher, ITA, focused in his lecture „Individual On Demand Produced Clothing“, on Industry 4.0 as well. He discussed the possibilities of Industry 4.0 to solve the problems of the previously fragmented production chain and how to face up to conventional production in Asia.

The STOREFACTORY concept shows how sports sweaters manufactured in a retail store can be produced close to the customer, on demand and economically.

Kristina Simonis, ITA, concluded the conference with her presentation „Business Model Development Regarding Mass Customization Aspects Based on the New 3D Large Circular Knitting Technology“ on a new technology that allows 3D structures to be produced on circular knitting machines instead of flat knitting machines as before. This increases productivity enormously and opens the doors to new business models.

Mittelstand 4.0 Centre of Excellence “textil vernetzt” is launched

The Mittelstand 4.0 Centre of Excellence “textil vernetzt” (meaning ‘connected through textiles’) was officially opened on 4.12.2017 in Berlin by Brigitte Zypries, the Federal Minister for Economic Affairs and Energy (BMWi). Together with research institutes in Aachen (ITA), Denkendorf (DITF) and Chemnitz (STFI), as well as the Hahn-Schickard corporation in Stuttgart, the consortium headed by the textil + mode federation had already begun its work on 1st November. In the coming months, four display windows with various focusses will be set up at the facilities of each of the project partners, which are intended to make the digitalisation process more tangible. The DITF in Denkendorf specialises in personalised products in the fields of clothing, smart textiles and lightweight design. At the ITA in Aachen you can witness and experience the interlinking of a fully integrated process chain, the economic benefits of which come about as a result of the digital transformation.

News from Textile Research Centers

The STFI in Chemnitz is demonstrating vertical integration, interlinked production systems and resource efficiency, such as the self-optimisation of complex systems. Lastly, the Hahn-Schickard corporation in Stuttgart is highlighting potential cross-sector applications using the example of smart sensor systems. In the Berlin branch of the Centre of Excellence, which is located in the premises of the textil + mode federation, a showroom will be opened in the coming year that will present a selection from each display window and clearly depict the close ties between the various project partners. The branch will moreover become the first point of contact for providing needs-based support for small and medium-sized businesses.

www.kompetenzzentrum-textil-vernetzt.digital



Brigitte Zypries, Federal Minister for Economic Affairs and Energy (BMWi), together with project partners at the opening of the Mittelstand 4.0 Centre of Excellence "Textil vernetzt" in Berlin; Photo: DITF



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News from Textile Research Centers

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Publisher

deep visions Multimedia GmbH

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