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Techtextil & Texprocess Preview

- The non-woven industry is growing faster
- Interview with Michael Jänecke, Director Brand Management Technical Textiles / Techtextil
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Comparison of the weight of bumper beams made from steel and CFRP © 2015 BMW AG

Content

Dear Reader,

are you as excited as we are about the simultaneous staging of the Techtextil and the Texprocess in Frankfurt next week? We can hardly wait for the curtain to rise and the show to begin. This year, as always, the organisers and exhibitors, with their countless innovations, appear to be particularly well placed to provide us with sufficient inspiration for the next two years, prompting us to make successful use of the solutions and products in our own companies.

The 2013 motto of Techtextil, “Innovations for life”, is followed this year by “Your centre of innovation”, and there is undoubtedly good reason for using the word “innovation” in the motto as a matter of course. In terms of innovativeness, no textile cluster seems capable of matching the field of technical textiles including non-wovens, and it is difficult to predict whether the industry’s growth curve, which has shown a consistent annual growth rate of 3-5% over the past decade, will prove to be a linear one or merely the start of a parabola. We believe in the first scenario and explain why in our article entitled “Will the Techtextil become the most important exhibition in the world?”.

And even though exponential growth may still be a distant prospect, the trade fairs in Frankfurt, at the heart of Europe, are already attracting tremendous interest from all around the globe. They are a source of inspiration and an engine of progress for the textile industry as a whole, as well as for other industries which use textiles in the manufacture of their products.

We therefore considered it appropriate to give wide coverage to both trade fairs in this issue of our magazine.

We would particularly recommend reading our exclusive interviews. Michael Jänecke replies to questions not often asked, so we are told. And in the second interview, we had the honour and pleasure of talking to Mr. Peter D. Dornier about issues important to him and the industry as a whole: sustainability, recruitment of young talent, and innovation.

Another item not to be missed is our Country Focus, which has also been inspired by the two Frankfurt trade fairs. This time it is dedicated to the host country, Germany.

As always, we look forward to receiving your comments and suggestions. Please write to us at **redaktion@texdata.com**.

We wish you a very successful trade fair and an enjoyable time!

Best regards
Oliver Schmidt

Will Techtextil become the most important trade fair of the world?

Why demand for technical textiles could explode and Techtextil is always worth visiting.

The trade fair city of Frankfurt, Germany is once again to become the global capital of textiles from the 4th to the 7th of May as Techtextil sets up shop as the original fair for technical textiles and nonwovens in the industry. The fair which was first established in 1986 has developed over the years into the most important industry event worldwide and together with its 4 offshoots in North America, China, India and Russia presents innovations relating to all textiles that at first glance at least have nothing at all or very little to do with clothing in their scope of application.

Production of the BMW i at the BMW factory in Leipzig (Germany): CFRP production (09/13) © 2015 BMW AG

As a still young industry, the technical textiles sector launches much more innovations than the apparel sector. And the two year cycle of the international trade fair which as ever enjoys the highest renown in the industry provides exhibiting companies with sufficient time to develop an interesting and varied bundle of new products and solutions. It is precisely this innovative power of the industry combined with the excellent organization provided by the Messe Frankfurt hosts that makes Techtextil an event that offers both tangible solutions while igniting the fervor of taking part in a fun spectacle looking purposefully to the future. This is not going to be any different in 2015 with the motto 'Innovations for life' as details published by the Messe Frankfurt on the one hand and the announcements by the companies on the other are stoking the coals to maintain the chosen theme of fire.

This brief report is intended to set the mood a little for the regular visitors to Techtextil a few days before it commences. For those in the textile industry including all the outposts who have not yet found their way to Frankfurt we would like to highlight a few facts, conclusions and examples as to which opportunities a visit would more than likely provide.

Lets have a look at some of the trade fair figures. 1,322 exhibitors from 48 countries presented their services and products in 3 halls at the last Techtextil in 2013 (2011: 1,199). It was already clear in January 2015 that the number of exhibitors and the exhibition space had grown by 10% making the provision of an additional hall necessary.

All that is now required is for the visitors to be affected by this enthusiasm. The Messe Frankfurt has registered new visitor records for years. In 2013 there were 27,500 visitors (+10%) from 97 countries for the three trade fair days. The extension of the trade fair to 4 days should once again provide a basis for a significant increase. The regular cycle of expansion is not the only reason for the expected surge of visitors as there is an even more powerful cause: the market for technical textiles represents a big growth market in addition to being the market where European textile manufacturers are considered global leaders, even though China and India are leading in quantity by producing enormous sales volumes in individual areas such as packaging textiles.

The reasons for the growth are multi-faceted prompting us to investigate in more detail as to why and in which segments technical textiles and non-wovens are in high demand. Answers to this question are found for example in the report entitled 'A view on the drivers for growth in technical textiles' published by the EU (CCMI/105 Technical textiles) which announced the adoption of a corresponding promotion program at the same time. This states: 'Textile materials and technologies are key innovations that may provide an answer to a wide range of challenges faced by society. Technical textiles are pioneers in other industries and may stimulate and promote the following: alternative materials (light, flexible, soft, (multi) functional and durable) new technologies (flexible, uniform and versatile) and functional components (reliable, multi-functional, reasonable cost and user-friendly components of larger technical systems and solutions).'

Simply put checks are being made in many areas as to whether technical textiles really do offer the better solution than the materials used to date.

The number of possible areas of use seem initially to be unlimited as textiles are capable of replacing almost any material including steel and aluminium in specific applications. An often quoted classic example of this is textile reinforced concrete that offers greater durability and less vulnerability at the same or greater compression resistance.

Consequently as a result certain industries faced with the problems associated with their customary materials are searching for new solutions from the textile industry. The automobile industry is an example as a toughening of the EU regulation 2000/53/EG requires vehicles to be designed by the year 2015 in such a way that 95% of materials used are recyclable.

Currently the production of vehicles or at least as far as the design and final assembly is concerned is an industry consisting of a few very large companies. Labour intensive research and development departments very quickly discovered that by substituting certain materials with nonwovens, preferably natural fibers such as flax or hemp allow both environmentally friendly manufacture as well as being biologically degradable at a later stage.

Environmentally friendly production is a further aspect that could be incorporated in passing. ‘We want not only to be the largest car manufacturer of the world by 2018 but also the most sustainable’ is how VW head Martin Winterkorn expressed the company objectives to the Handelsblatt as early as July 2013.

The longest textile-reinforced concrete bridge in the World in Albstadt (Germany) build the help of Groz-Beckert

Where large companies lead becomes increasingly interesting also for medium sized companies known for their innovative power and inventiveness and here is precisely where a lot of growth is likely to be generated in the coming years. Especially as the huge spectrum of applications offered by technical textiles and nonwovens becomes clearer.

This topic was also addressed by Eric Schöller, member of the management board at Groz-Beckert in the current edition of their company magazine. He says: ‘Hardly any industry offers such broad diversity as the world of textiles. From different production technologies and versatile materials all the way to the almost infinite application possibilities for textiles, the bandwidth is almost inexhaustible.’

Taking it a stage further and taking into account the fact that textiles also form the basis for fibrous composite materials, also known as fiber reinforced synthetic materials or composites, there seems to be no further limits to growth. The question is no longer whether the market takes off one day but only when.

Should the one or other reader still be doubtful then a current example substantiates the forecast. The Karl Mayer company from Obertshausen is renowned as the global leader in warp knitting looms. In order to improve the energy efficiency of their machines the company replaced some of the metal components with highly heat conductive synthetic material made of Carbon Fiber-Reinforced Polymer (CFRP).

Karl Mayer wrote in this regard: The mechanical characteristics clearly set CFRP apart from other synthetic materials and metals. High tensile strength and rigidity as well as an extremely low thermal expansion together with a density of only 1.55kg/dm_ are outstanding features that qualify this material for many applications.

We care about your future

Strength and success go hand in hand – and demand the right equipment. Whatever your work involves, we are at your side – with the right technology to turn your goals, plans and visions into reality. We can supply warp knitting machines for producing every type of product, from lace, net curtains, clothing and functional textiles to technical textiles, as well as a full range of warp preparation systems for weaving and warp knitting. We have the expertise to support you in developing your own specific solutions. Let us put your ideas in motion!

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Shanghaitex 2015
15 – 18 June 2015, Shanghai
Booth W1 C01

ITMA 2015
12 – 19 November 2015, Milan
Booth H5 C01

MAYER

KARL MAYER

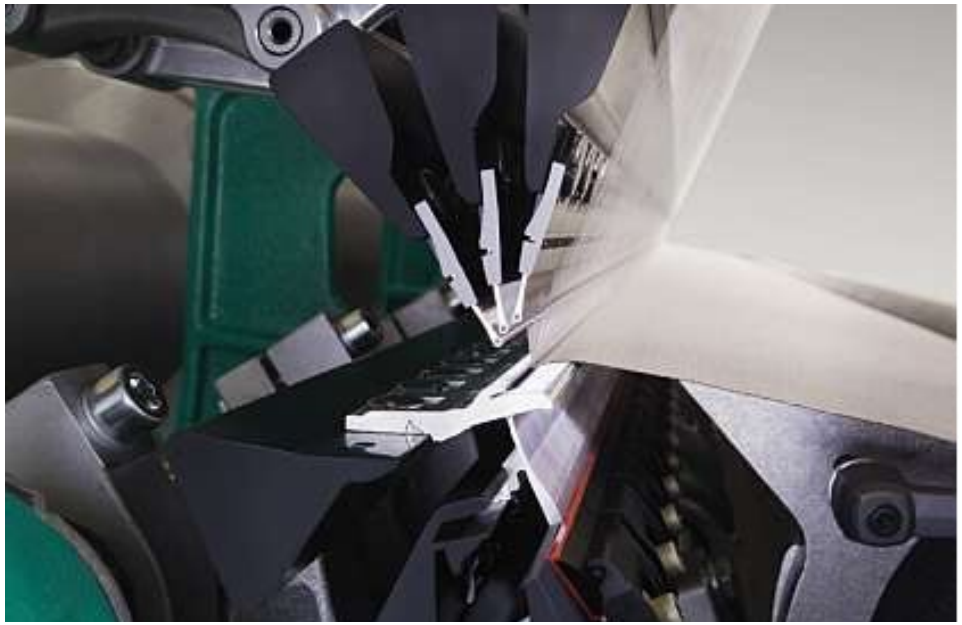
Components made of CFRP have 6 times more rigidity and up to 8 times more tensile strength than aluminium for the same weight. This allows the weight of the component to be reduced leading to higher material rigidity and tensile strength.'

In conclusion revolutions are increased by 30% and the temperature tolerance is extended to 14°C purely through the specific material characteristics of CFRP. Furthermore investment costs reduce by 16% and energy consumption of the air conditioning plant is 26% less.

What applies for Karl Mayer warp knitting looms should apply to a range of machines and theoretically apply to the entire industry of machine construction.

Current market volumes and growth figures show however that we are still a long way from mass market demand in most of the industries today. One of the reasons for this may be that many potential target groups for technical textiles still have too few or no points of contact and the individual industries need to become much more familiar with the vast range of solutions. Initially there is tough cutthroat competition.

Consultant Gherzi forecasts the market for technical textiles in 2013 at around 26 million tons and at a value of 135 billion US $. He forecasts growth rising to 30 million tons and 160 billion US$ in 2018. That would be a moderate annual increase of 3.5%.



Karl Mayer warp knitting machine with components from CFRP

More growth is predicted in the area of nonwovens according to the industry association edana and a recently published study by Commerzbank. This states that the global market in 2013 is to produce around 8.5 million tons with a value of 33.3 billion US$. The forecast for 2018 is 10 millions tons and 42.1 billion US$. This is in terms of value an average annual growth of almost 5%.

The forecast for an increase in demand for existing products emanates from clusters defined by the Messe Frankfurt.

These are: Agrotech; Buildtech , Clothtech, Geotech, Hometech, Indutech, Medtech, Mobiltech, Oekotech, Packtech, Protech and Sporttech. The expansion into new areas of use included in the forecast is in contrast rather conservative as both time to market and mass market demand of relevant units is hardly possible to forecast.

The few examples we provide should though be sufficient in principle to share the view that technical textiles and nonwovens are considered the most interesting products of our time and clearly have the potential to sustainably change industry and economy.
This brings us back to Techtextil. There is an exhibitor for (almost) every industry and problem capable of discussing and optimally providing a textile solution. There are another 11 product groups spread across the 12 areas of application which concentrate on the processing of textiles from development through production and fibers to the weaves, nonwovens and their finishing process. Table 1 shows the product groups.

The spectrum of product groups is another key to the great success of Techtextil as it allows experts from the many product categories to add their contribution to the product in question - ideally even working hand in hand and together. Visitor questions relating to fibers, machines, chemicals and coatings are clarified both with regard to the technical implementation as well as regarding the cost of production with relatively little effort.

Organization, innovation and dialogue makes Techtextil 2015 once again an event that satisfies nearly all exhibitors and visitors. Techtextil also earns top reviews in this area. The years 2011 and 2013 recorded that 96% of visitors were satisfied with their visit to the trade fair according to the Messe Frankfurt survey. To top it all this year Texprocess is once again to take place in parallel to Techtextil. The double event concept as in 2011 has proved successful as it offers visitors an even greater variety and an optimal opportunity of clarifying as many issues as possible in a short period of time. It is therefore worth a visit. We for our part are already very much looking forward to Techtextil with its many innovations and events , while keeping you fully informed by TexData Infoletter and the Techtextil impressions on our website.

Techtextil product groups	
01	Research, development, planning, consulting
02	Technology, processes, accessories
03	Fibres and yarns
04	Woven fabrics, laid webs, braidings, knitted fabrics
05	Nonwovens
06	Coated textiles
07	Composites
08	Bondtec
09	Functional Apparel Textiles
10	Associations
11	Publishers

Techtextil 2015 Preview: Your Center of Innovation

The Techtextil 2015 has been designated “Your Centre of Innovation”, but what exactly can we expect to see at the trade fair in terms of innovation? What is going to be showcased and what is likely to attract most interest? New materials? Additional applications? Or perhaps increases in manufacturing productivity? These are the questions many prospective visitors are asking themselves a week before the start of the event.

This is hardly surprising given that the Techtextil, scheduled to take place in Frankfurt from 4 to 7 May, is the leading international trade fair for technical textiles and, as such, is seen by all manner of companies - from start-up enterprises to market leaders - as a prestigious platform for presenting their innovations.

Filter – Nonwovens Meltblown © 2015 Oerlikon Man Made Fibers

Many people visit the fair with the intention of discovering new products which can be successfully deployed in their own companies. But browsing is time-consuming, and this is no doubt one of the reasons why the organisers have extended the forthcoming Techtextil event by one day, which means that it will now run for four days.

Techtextil has an enormous amount to offer, and the extra day will make it easier for visitors to pursue their goals. You will also want to find time, of course, to maintain business contacts, attend lectures, take a look at what the winners of the Techtextil Innovation Award have developed, try out the framework programme, initiate new business and, last but not least, take a tour of the Texprocess, which will be running in parallel.

With all these opportunities available, it can only help to get a condensed preview of what to expect, as a guide to finding your way around the exhibition. This has inspired us to take a look in this article at some of the exhibitors and their programmes, and to outline new developments generated by market leaders during the past year. We will be considering the product groups represented at the Techtextil and will be focusing on the manufacturers of machinery for the production of technical textiles and non-wovens, as, according to Wikipedia, anything new has to be suitable for profitable production if it is to be classed as an innovation.

Associations

VDMA Textile Machinery Association and **Forum Composite Technology** (Hall 3.0 / Stand D25) will offer comprehensive branch information and useful publications. A visit at the VDMA booth will be a good starting point for visiting afterwards the VDMA member companies exhibiting at this fair.

Those who are particularly interested in sustainable and energy-efficient production of textiles can ask for the “Energy-efficiency Guide, the Blue Competence Flyer or also the most illustrative success stories of the exhibiting Blue Competence partners.

The Forum Composite Technology covering all sectors of Germany’s mechanical engineering industry and interconnecting all technological know-how along the value chain also makes available similar information.

ACIMIT, the **Association of Italian Textile Machinery Manufacturers**, has organized an Italian Pavillion (Hall 3.0 / Stand A03) together with Italian Trade Agency. In fact there are about 50 Italian textile machinery companies in Germany. 23 of these companies will exhibit at the Italian Pavillion.

They are: 4M Plants, Biancalani, Bombi, Bonino, Canalair, Comoexport, Consorzio Italian Texstyle, Corino, Crosta, Cutlite, Dell'orco & Villani, Mecatex, Monti-Mac, Noseda, Omr, Pmt, Ramina, Ratti, Rollmac Div. Gemata, Saspe, Srs, Toscana Spazzole, Unitech.

A proof of the dynamism that characterizes the Italian textile machinery in the sector of technical textiles comes from this Italian manufacturers. Italian textile machinery manufacturers meet the full spectrum of industry needs (spinning, weaving, knitting, finishing and laundry machines). A lot of them produce machines for technical and innovative textiles too, maximizing the flexibility and versatility that characterize Italian supply.

Yarns & Fibers

Asota from Austria will present a broad range of products for many different applications like textiles reinforcement for concrete and other precipitation hardening masses, clothing, subsoil reinforcement, carpets, sunscreen textiles, Filters / filtration, landfill textiles, interior cladding, textile drainage systems and fibres and yarns in general.

The member of the **International Fibres Group (IFG)** is a leading supplier of PO staple fibers. Asota develops, manufactures and markets PP, PE and PA6 staple fibers for use in carpets, automobiles, technical applications, sun shades, sport coverings and textiles.

In 2014 IFG announced that they will invest in the production capability in the site of Asota in Linz, Austria. And, maybe much more interesting, was the news that the high performance fibre product range of IFG will be available for the market in the second half of 2015. The strategic move into high performance fibres, and the investment in state of the art machinery at the site of Asota, gives IFG the possibility to further strengthen the market position of IFG and to remain at the front-end of R&D in polypropylene staple fibre. IFG will through this investment continue increase its extensive production and R&D capability for automotive-, technical- and industrial applications as well as advanced geotextiles.

Fiberpartner (Hall 4.1 / Stand E48) will introduce a a new low melt bonding fiber, which is partly produced from recycled PET. Available in 4 den this fiber is composed of a recycled core, and a virgin sheath, with a meltingpoint of 110C. In this way the critical part, the sheath, is a prime material, and for cost saving and environmental concerns - the core is recycled.

The **Lenzing Group** (Hall 4.1 / Stand E21)will show latest innovations of high-quality man-made cellulose fibers. For the first time TENCEL® will be used in the automotive sector. The cellulose fiber is available in various fiber variants thus offering a wide range of applications in cars: in powder form for compounds for injection molding or as a special fiber type for seat covers and headliners.

The flame-resistant fiber Lenzing FR® is now also available in color. The advantages are clear: the color remains in the textile even if it is washed. Thus the highest possible protection and color and light fastness are combined in the fabric – an absolute must for uniforms and clothing for the armed forces/emergency forces.

And, again for the first time, using a specially tailored TENCEL® fiber, natural cellulose fibers can be processed in carpets allowing the unique characteristics of TENCEL® to add valuable new properties to carpeting.

In February 2015 Lenzing presented another TENCEL® fiber innovation: A new micro version of the A100™ fiber type is now available. The new TENCEL® micro fiber complements the range of fibers offered for knitwear applications.

PHP Fibers (Hall 4.1 / Stand D 02) will show its broad portfolio of industrial Polyamide and Polyester filament yarns. Various highlights and new products will be presented, e.g. PHP Fibers will release a solution for for food packaging applications: Diolen® (PET) and Enka® Nylon (PA6.6) yarn types. Plastic materials intended to come into contact with food have to comply with EU Regulation No. 10/2011.

PHP Fibers has now developed special technical yarn types that are produced only with components listed in this regulation. In addition and to meet all demands of conformity, procedures of good manufacturing practice (GMP) and traceability are applied during yarn production.

These yarn types are currently being assessed for compliance in accordance with FDA regulations.

And there will be the market introduction of adhesive-activated low shrinkage PET yarn Diolen® 162S with excellent adhesion properties. It is the solution for all reinforcement applications, e.g. rubber or thermoset materials that are requesting further reduced yarn shrinkage for dimensional stability. This yarn type combines the traditional good adhesion properties of Diolen 164S with the low shrinkage of Diolen 174S yarn.

For less adhesive demanding rubber applications PHP Fibers has developed PET yarn Diolen® 165ST. The increased breaking force and the safeguarded application of adhesive activation make this yarn type to a reliable and economic component in many fiber reinforced products.

Enka® TecTape is another innovation of PHP Fibers which is designed for special uses in technical applications that require light-weight and thin, but high-tenacity textile structures with excellent build-in functionalities.

It combines the well-known high-tenacity multifilament yarn profile with a new yarn dimension: untwisted and spread endless filaments form a flat tape fixed with binders. In comparison to standard technical yarns, the broader width of Enka® TecTape makes fabric formation more efficient for the customer.

SWU Special Yarns (Halle 3.1 / Stand D62) offers carded and combed high-performance cotton yarns and twists as well as a large range of fancy twists and elastic yarns. Beyond that, they also spin yarns from polyester- or modal fibres or produce blends of them.

SWU will present some natural yarns, blends and man-made fibers which fit best the high demands of techical textiles. Furthermore they will show a selection of fabrics for Medtech, heat protection clothing and protective clothing, in particular textiles for use in corrosive media.

Teijin Aramid (Hall 4.1 / Stand E 09) will introduce Teijinconex® neo, a new type of meta-aramid fiber to the European market.

The new fiber is offering unsurpassed heat resistance, as well as excellent dyeability. This will provide customers with highly diversified solutions for the design and manufacturing of protective apparel, a feature that is not yet available or offered in the market.

In addition, Teijin's new production technologies ensure a compliance with for example REACH and other environmental regulations directly out of the factory and without additional treatment. This technology is also new and unique in this market.

Teijin Aramid experts from differnt application areas like protective clothing (bullet, fire and cut-resistant clothing) and automotive (tires, hoses) will be present to share recent industry and market developments.

They will be glad to discuss how innovative and sustainable solutions by using the high performance aramid fibers Twaron, Teijinconex, Technora and Sulfron or UHMWPE (Ultra High Molecular Weight Polyethylene) Endumax can be developped together with the customer.

Trevira (Hall 4.1 / Stand F25) is making a joint presentation with its owner Indorama Ventures and sister companies FiberVisions and Wellman. Their stand offers a wide portfolio of man-made fibres, displaying the strengths of the individual partners.

In the fibre sector the focus for Trevira lies in customised special solutions in polyester, PLA and bico fibres. Fibres from biopolymers (PLA / IngeoTM) for a variety of non-wovens make up an essential element in the product programme.

Trevira is the most important partner in staple fibres for NatureWorks, its supplier of raw materials. Initially used principally in hygiene products, bico fibres are appearing more and more in developments for customer projects aimed at technical applications, like filtration or insulation.

Trevira filaments cover a steadily growing spectrum of applications in technical textiles. Technical applications for Trevira filaments are, for example, special yarns for medicinal and hygiene textiles, together with textured PBT filaments as basis for plasters and bandages containing active ingredients. Meanwhile, demand has been rising steadily for PLA multifilaments.

Flame retardant Trevira yarns (Trevira CS) have become the standard material in textiles for exhibition construction and print base.

Hybrid yarns for stiffened materials constitute a rapidly growing specialty, where a yarn from a co-polyester filament, modified at melting point, is combined with another yarn. According to demand, this latter can be either a Trevira standard or flame retardant filament.

Combinations with high tenacity filaments, possibly glass and carbon filaments, are also conceivable (and to some extent already realised by industry partners).

Nonwovens

The newly formed business group **Freudenberg Performance Materials** (Hall 3.1 / Stand F37) shows its performance and presents innovative solutions in the area of advanced wound care, batteries and fuel cell components, interlinings, sound absorption and technical packaging.

Freudenberg Performance Materials (FPM) was formed through the merger of two successful Business Groups – Freudenberg Nonwovens and Freudenberg Politex Nonwovens.

The comprehensive portfolio for advanced wound care is now complemented by hydrophilic foam solutions. The latest products from the nonwovens specialist absorb wound exudate and create an ideal environment for wound healing. They protect the wound from drying out, from cooling and ensure an unhindered exchange of gases and water vapor, thereby accelerating the wound healing process.

And FPM shows Terbond®, a polyester fiber nonwoven manufactured with spunbonded technology, which is mainly used as a reinforcement for bituminous roofing membranes in commercial buildings. This solution is available in numerous weights and capable of meeting a wide range of technical requirements.

Next innovation is SoundTex® M. It is based on an innovative microfilament technology from Freudenberg. The adjustable flow resistance offers excellent sound absorption, particularly in the frequency range from 600-6000Hz. SoundTex® M is also characterized by its ease of processing for shaping, cutting and bonding. Thanks to the outstanding strength: weight ratio, SoundTex® M offers significant potential for reducing the weight of components.

Sandler (Hall 3.1. / Stand D52) highlights „the textile building“ with its fibercomfort® nonwovens for new buildings and renovation. Sandler banks on “the textile building“: Polyester nonwovens of the fibercomfort® product line provide a textile alternative for efficient heat insulation.

In January 2015, these environmentally friendly nonwovens received the general building inspectorate approval of the German Institut für Bautechnik (Institute for Construction Technology).

Furthermore the nonwovens manufacturer wants to inspire visitors with nonwovens for construction and acoustic absorbers in the automobile or synthetic filter media. The wide product range is completed by soft, skin-friendly nonwovens for hygiene products and wipes substrates for cleaning and personal care.

Finishing

TANATEX Chemicals (Hall 3.0 / Stand F80) will present several innovative concepts during the Exhibition. One of it is the Express FR Concept developed by TANATEX Chemicals . When implementing Express FR you can simply add the special flame retardant product in the dyebath, no additional finishing process is necessary, hence reduction of water, energy and time. Express FR makes the development of flame retardant articles easier, giving you more flexibility and finally putting you in control. The main component of the concept is FLAMEGARD PX, a novel product, especially designed for polyester treatments in exhaust to obtain the - so often requested - flame retardant properties. TANASPERSE® OLG-PX, a special emulsifying/dispersing product, is incorporated for optimal distribution.

Furthermore the company offers a wide range of CosmetoTextile finishes. The BAYSCENT® and TANA®CARE ranges are based on essential ingredients which are enclosed in small shells called microcapsules, realized in a special polyurethane resin and largely impermeable to diffusion.

And TANATEX Chemicals developed a new generation of blocked aliphatic polyisocyanates. The products are completely free of catalysts, formaldehyde and co-solvents.

With TANATEX's Insect Proof concept, outdoor activities can be enjoyed without having to worry about unwanted company. The long-lasting finish protects users from insects stinging through the fabric and does not leave a negative effect on handle.

HydrECO is fluorine-free, without cutting down on quality. With this concept, it is possible to create modern state of-the-art outdoor and sportswear and technical fabrics, such as awnings, boat covers and outdoor furnishing.

Coating

ContiTech (Hall 3.0 / stand D32) showcases innovative solutions for outdoor applications and will be presenting itself as a competent development partner for coated fabrics. They will be showcasing the wide variety of possible uses for technical textiles.

A new dry suit material developed by ContiTech offers maximum protection in and under water. The coated fabric, which features a new surface structure, is extremely lightweight and elastic but also extremely dense. Another new addition to ContiTech's range is an innovative life raft material. The extraordinary properties of this exceptionally lightweight, robust, and weatherproof material make it ideal for not only floats but also flexible buoyancy tubes and other flexible constructions such as tent substructures.

One more innovation is in the field of high-quality footwear material for the outdoor and hiking segment. The elastomer-based material CeraPrene offers optimum wear comfort in any situation and is ideal for safety shoes, soccer boots, and tennis shoes. The material is made from highly resistant, water-repellent, and watertight rubber compounds, is extremely durable, and boasts minimal wear. CeraPrene also remains highly flexible even at very low temperatures.

With regard to the U.S. market, ContiTech's elastomer-coated materials for protective suits also fulfill U.S. fire safety standards (NFPA). Another key benefit of this material is that it offers reliable protection against chemicals and gases.

This brings us to the manufacturers of machinery for the production of technical textiles and nonwovens.

Spinning machinery

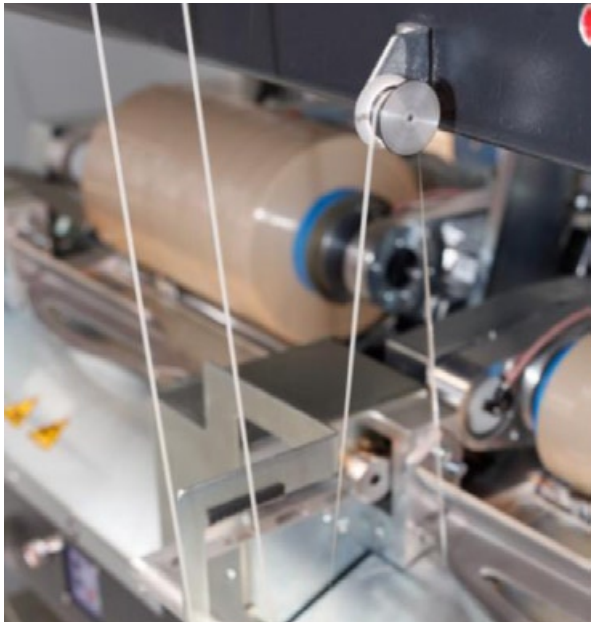
NSC Fibre (Hall 3.0, Booth E 64) to Yarn will promote spinning lines for processing long staple fibres for technical applications. Long staple yarns can be spun in various blends from any high performance fibres. NSC Fibre to Yarn proposes 3 processes to produce long staple top of technical fibres: carding, stretch breaking and crush cutting.

These 3 ways are composed of different kind of machines: cards, converters, pin drafters, blenders, defelters, combers, rubbing, roving and spinning frames. New developments at NSC Fibre to Yarn include a focus on user friendliness, energy savings, low operational and maintenance costs.

The Swiss **Oerlikon Manmade Fibers** (Hall 3 / Booth B06) will demonstrate innovative industrial solutions for technical textiles in growth markets. Oerlikon will be placing the information focus on safety and environment.

The solution provider with its two brands – Oerlikon Barmag and Oerlikon Neumag – offers numerous technologies for manufacturing industrial yarns, fibers and nonwovens. The latest developments among other things for recycling will be presented in a Virtual Showroom in 3D.

Industrial yarns are considered to be the ultimate discipline in filament manufacturing. With a production window of between 50 and 12,000 den per filament, Oerlikon Barmag industrial yarn systems cover an extremely-wide titer range. Depending on the application and the required yarn characteristics, our systems produce 'strong' yarns for all applications: from high-tenacity high-modulus yarn for safety belts, HMLS yarns for tire cord all the way through to low and ultra-low shrinkage yarns for tarpaulins. Among other things, monofilament yarns and tapes are being deployed as agricultural textiles such as baler twine yarns and wind-protection netting, as bulk goods sacks, carpet backing and geotextiles.



Oerlikon Barmag Wintape

Oerlikon Barmag supplies systems for woven, fibrillated polypropylene tapes with the highest tenacities – in excess of 7.5 grams/den – available on the market, which can also be used in road construction.

Saurer Allma (Hall 3.0 / Stand D02) is delighted to welcome experts from all over the world and will provide comprehensive information on all the latest developments. This year the focus is on the TechnoCorder TC2 with interesting developments in FlexiPly and the new 830 mm spindle gauge. Demonstrated here is a machine section with the new FlexiPly facilities and the larger spindle gauge for processing coarse titres.

FlexiPly opens up new market opportunities in the field of hybrid yarns The Allma two-for-one double twisting machine TechnoCorder TC2 for industrial yarns is characterized inparticular by its high flexibility.

Self-sufficient spindle technology enables individual settings for each spindle;the separate spindle drives are set via integrated IPC at the control cabinet. The TechnoCorder TC2 is extended by a larger spindle gauge and thus with gauge of 830 mm is more flexible for processing of coarse titers. Titer spectrum from 235 to 33,000 dtex on one machine is unique.

High end premium yarns in extremely sensitive materials or coarser items can be easily produced in top quality, economically and flexibly on TechnoCorder TC2. Some examples for material diversity are PA, PES, AR, CV and PP.

Saurer Allma TechnoCorder TC2

Nonwovens machinery

ANDRITZ (Hall 3, Booth B15) will be presenting its latest nonwovens technologies. With its companies ANDRITZ Asselin-Thibeau, ANDRITZ Küsters, and ANDRITZ Perfojet, ANDRITZ Nonwoven provides worldwide leading turnkey and individual production solutions for spunlace, wetlaid, needlepunch, technical textiles, bonding and finishing for spunbond applications.

Andritz latest development is an innovative system solution for textile producers that combines two ANDRITZ all-round calender technologies, teXcal s-roll and teXcal trike.

Thus, customers benefit from utmost flexibility and quality in textile finishing for a wide range of applications, such as technical textiles, sport or outdoor wear, linings, filters, air-bag material, or African damask.

Andritz Nonwovens neXline needlepunch aXcess

AUTEFA Solutions (Hall 3, booth number H 33) will inform about turn-key lines as well as individual machines for nonwovens manufacturing. Application fields are the production of artificial leather, filter products and paper-machine felts, automotive felts, geotextiles, floor coverings, felts for insulation and nonwovens for the hygiene industry.

AUTEFA Solutions' product range includes fiber preparation machines, nonwovens cards as well as aerodynamic web forming machines (Airlay), crosslappers and needle looms for mechanical bonding.

The field of AUTEFA Solutions' nonwovens technology was expanded by AUTEFA Solutions Switzerland which delivers equipment for thermobonding, drying as well as cutting-, winding- and festooning-technology.

Machines are the Webmaster Card, the Crosslapper Topliner and the Needle Loom Stylus. Stylus is equipped with the innovative Variliptic drive system, which enables high production speeds while also ensuring a gentle needling of the nonwoven fabric.

This is particularly important during the first process step, the preneedling. The Variliptic drive system optimizes the surface of the nonwoven fabric, while also protecting fibers and minimizing the needle wear.

Autefa Solutions Stylus

DiloGroup (Hall No. 3.0 / Booth No. H31) will provide extensive information about production lines made in Germany and machine concepts from the DiloGroup companies DiloTemafa, DiloSpinnbau and DiloMachines. A major focus of the equipment is to improve operation efficiency, web quality and uniformity with positive effects on all staple fibre bonding processes.

All these elements are part of the "Dilo – Isomation Process" and aim at an even web mass for reduced fibre consumption as raw material is the biggest cost factor in textile production.

DiloGroup is the premier builder and supplier of complete nonwovens lines made in Germany for staple fibre nonwoven production. Each line is specifically engineered to customer Needs.

Dilo complete nonwoven line

LAROCHE (Hall 3.0, Stand A 29) from France will notably introduce their latest innovations with the “Airfelt/Resinfelt”. This simple and low maintenance Airlay machine is mostly dedicated to the automotive and mattress felts industries. With the “Resinfelt” option, it allows to make resin bonded felts using phenolic or epoxy resins.

Nonwovens expert **Oerlikon Neumag** (Hall 3 / Stand B06) covers the most important applications with meltblown lines for industrial filters and spunbond lines for geotextiles, underlay roofing membranes and bitumen roofing membranes.

Oerlikon Neumag has the information that the market for industrial nonwovens is expanding at breathtaking speeds of more than 9% per annum. Increasing demand for these materials, particularly in emerging economies, is generating tremendous opportunities for manufacturers.

Oerlikon-Neumag Spunbond line

The **Trützschler companies'** (Hall 3.0 / Booth B03), **Trützschler Nonwovens & Man-Made Fibers**, **Trützschler Card Clothing** and **Voith Paper**, participation at this year's Techtextil show is focused on efficiency and quality. Various examples of Trützschler Nonwovens' complete line concepts and technologies out of one hand combine these targets. Multimedia and interactive presentations inform on line layouts, machinery, applications and end products.

A special topic will be the cooperation with Voith Paper in the area of wet-laid and spunlaced nonwovens. Although flushable wipes being the main application, tailor-made solutions for other end products will be discussed at the booth too.

With requirements for greater energy efficiency and lower carbon emissions becoming more and more prominent, Trützschler Nonwovens' second focus is on new and efficient drying technologies. The Streamliner, introduced during the last ITMA show, is a spiral-shaped drum dryer with highest evaporation capacities. The model is best used in nonwoven lines producing extremely moist and high density nonwovens - it passed the acid test in a production line last year. Another pillar of the dryer and oven program is the re-designed multi-drum dryer.

The new, modular model is optimised in several respects which result in significant reductions in both thermal and electrical energy consumption.

Trützschler Man-Made Fibers brings the small but technologically challenging segment of short staple fibers into focus. One of the most important quality requirements of short fibers with a length of under 3 to 6 mm is absolute length uniformity - Trützschler's staple fiber technology fulfil this requirement for both standard and high-performance polymers.

Here the technologies presented come to full circle since short staple fibers are often blended with other fiber material for typical wet-laid products such as nonwovens wallpaper, high-quality tea bags and battery separators.

Truetzschler roller card EK150

In the field of technical nonwovens, Trützschler Card Clothing is offering new metallic wires for roller cards application on doffer and condenser. Especially for medium and coarse fibres, e.g. for geo-textiles needle-punched webs, new and already field-tested tooth geometries are available, providing enhanced process stability and low maintenance.

The joint competences regarding machines and card clothing guarantee an optimum set up. Our experienced service technicians are operating world-wide to ensure excellent results even for special applications.

Dyeing, Drying, Coating & Finishing machinery

A. Monforts Textilmaschinen (Hall 3.0 / booth F01) will be focussing on its recently introduced Montex Allround modular coating head and advanced solutions for coating and finishing of technical textiles and nonwovens. Monforts Technologists will also be present to discuss the latest advanced solutions for coating and finishing of technical textiles and nonwovens.

Technical textiles are extremely diverse in their end-use applications and manufacturers can be called upon to quickly produce a succession of materials with widely differing properties.

Very different materials have one thing in common – they all require expert finishing with highest accuracy. In seeking to cater to the flexibility in processing technology demanded by such wide-ranging production, Monforts has developed the new and patented Montex Allround, a modular, interchangeable coating system for technical textiles.

The modular coating heads of the system can be quickly and easily changed by a specially-designed undercarriage from the side of the unit, allowing it to be adapted for different applications, or, for easy cleaning purposes of the coating head outside the machine range. There are modules for knife and slot die coating, in addition to those suitable for flexure, gravure and rotary-screen printing.

Monforts Montex Allround

Special modules for powder scattering and spraying are also available. The unit can be enclosed with a special casing when the handling of fabrics treated with organic-, or even toxic- solvents is taking place.

The Montex Allround, which incorporates a spreading unit and a pulling device along with the selected coating head, allows for the tension-free coating of the substrate along a greatly-reduced web path and a very short period of 'open' coating prior to it entering the dryer; ensuring significantly less chance of contamination. The shortest possible distance between the coating head and the stenter infeed ensures the highest quality coating results.

Benninger Trikoflex

Swiss **Benninger** (Hall 3 / Stand D 05) will provide visitors with their comprehensive process know-how in the fields of technical textiles, in particular in the areas of washing, water removal and desizing - also for large widths of up to 5,400 mm. This is the basis for new, environmentally compatible production processes. Benninger takes responsibility for sustainability as part o f resource management; this may be in the form of investment in the development of high-quality products and ecologically worthwhile processes that also preserves resources.

With the recycling of drain water and waste heat, and the conservation of water, energy, chemicals and other valuable raw materials, Benninger is committed to creating environmentally benign solutions, accepting its responsibility towards customers, consumers and staff.

By securing the rights to KASAG's lye recovery systems, they have rounded off their product portfolio with respect to resource management.

Benninger comprises three business divisions: textile finishing, tyre cord and automation.

BRÜCKNER (Hall 3.0 / Booth F29) from Germany comes with the motto „ Quality makes the difference!" and will present as a manufacturer of intelligent textile machine systems for textiles, technical textiles and nonwovens their broad range of solutions and services in the field of finishing. Brückner will offer a flexible team of experienced engineers and technologists who are ready to analyse any requirements and to create a tailor made solution for the visitor' s needs.

The finishing specialist offers solutions in all application areas. The production program includes for example finishing lines for technical textiles and carpets, coating lines for textiles, bonding and finishing lines for nonwovens, heat recovery and air purification systems, energy saving concepts and stenters for woven and knitted fabrics.

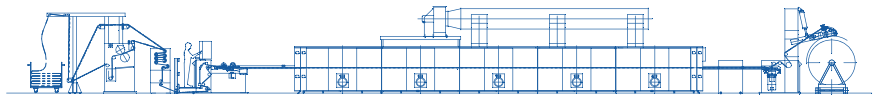
2.271.428.400

kWh were saved every year by Artos (Babcock) and Krantz dryers which are equipped with the „Econ-Air energy-saving-system“. As the first supplier of this energy-saving solution and blue competence member of the VDMA we keep on living our responsibility. Econ-Air dryers do also improve as modifications the energy budget of your Artos-finishing-range.

We would gladly like to give you more details of our well-engineered machines.
Please contact us.

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

INTERSPARE
TEXTILMASCHINEN
ARTOS Krantz



Still the peak in finishing machinery.

For example the BRÜCKNER POWER-FRAME stenter has a very high drying performance due to the well-engineered and patented SPLIT-FLOW air circulation system. Up to 35% energy can be saved thanks to economical heat recovery and energy saving concepts. POWER-FRAME stands for an absolutely homogeneous distribution of air flow and temperature due to the alternating air flow in the thermo zones.

Brückner POWER-FRAME

Erhardt + Leimer (Hall 3.0 / Stand C15) will present latest innovations in the field of guiding webs and belts on machine lines. They are expert at providing customized solutions and possess specialist know-how in process optimization systems and automation technology. E+L offers solutions for many application areas like for example woven and knitted fabrics for providing shade, textile roofings and roofing sheets, coated textiles, composites, carpets, filters and finishing technology.

Keeping in mind the type of material handled, the given application and the specific task Erhardt+Leimer will offer the right solution from a large diversity of different systems: for better quality and higher productivity for the benefit of our customers.

Innovative machines from E+L are the Web Guiding Systems ELGUIDER, the Surface inspection systems ELSIS, the Web Tension Measuring and Control systems ELTENS, the Web Cutting Systems ELCUT and the Web Guiding and Spreading systems for textiles ELSMART (to 6.000 mm Web width). The elimination of possible error inducing variables, the permanent and exact alignment of the web and the guarantee of precise reel formation is the task of the E+L web guiding systems.

Erhard&Leimer ELGUIDER

Mahlo from Germany (Hall 3.0 at Stand F04) presents innovations in the areas of process control and automatic straightening systems for technical textiles and related industrial fields. On display at the show will be the traversing control system Qualiscan QMS-12. Important process parameters such as thickness, weight, coating thickness or moisture can be measured, recorded and controlled on-line and over the entire width of the product by this system.

Mahlo Qualiscan QMS-12

Santex AG (Hall 3.0 Stand B30), Tobel Switzerland, will present the Caviscat scatterer, which can be combined with other machines of the Cavitec brand to form complete coating and laminating solutions.
The grit is fed via a funnel shaped trough on the scatter roll underneath. An oscillating brush scatters the material through an oscillating sieve onto the moving web material.

The quantity can reach up to 4,000 g per minute and meter material width. In the next step an infrared heater melts the scattered grit, which is therewith connected to the base material web. An additional layer can be laminated onto the base layer if needed. The scatterer is suited for all kind of grit from fine powder to pellets of 2,000 µm size. Depending on the material and the scatter quantity different types of scatter rolls are used. Simultaneous scattering of two different materials at the same time is also possible. The Caviscat scatterer, which is available with working widths from 500 mm to 7,000 mm, guarantees exact and even coating of the web material. It is ideally suited for applications in the field of technical textiles. Tailored solutions can be realised, when the Caviscat is combined with other machines of the Cavitec brand.

Santex Caviscat scatterer

Thies Textilmaschinen (Hall 3 / Booth F23) will be highlighting its latest range of machines for the treatment of technical textiles. Specialists will be on hand to offer expert advice on dyeing aspects of technical textiles. The machines process a wide variety of yarns, fibres, nonwovens and fabrics suitable for various technical textile applications: for example Aramide fibres which are used for security wear and top-end, bullet-proof automobiles.

Thies iMaster H2O

The newly developed dyeing machine “iCone” treats yarns, fibres, flakes, cables, ropes and belts. The new technique enables dyeing in short fleet. Obtaining uniform dyes and the required fastness is self-evident. Due to the new energy-efficient (ee) functions the “iCone” is able to colour in a more cost effective and environmentally friendly way.

The Thies HT-Jigger is used for dyeing fabrics, nonwovens or space fabrics. The HT-Jigger offers stepless tension and material speed control with an economical dye trough. It has been designed to offer uniform dyeing in short liquor ratios.

For applications where water consumption is an important consideration, together with other possible energy savings including steam, electricity plus chemicals and dyestuffs, the recently introduced iMaster H²o dyeing machine is already proving successful with, for example, several automotive fabric producers. The noteable process times of the iMaster H2O dyeing machines facilitate higher production capacities.

Knitting, Warp Knitting, Weaving, Felting and Tufting

Groz-Beckert (Hall 3.0 / Booth F03) will show its comprehensive range and service highlights.

In the Felting area, the focus is on filtration with needle felts. Owing to a variety of needle types with different barb sizes, barb styles, gauges and cross sections, Groz-Beckert can offer the right felting needles for differently needled filter media. For a high surface quality, a combination of GEBECON® and EcoStar felting needles can be recommended.

The Weaving area will go into the variety of technical fabrics. Groz-Beckert offers all kinds of healds and heald frames, precisely meeting the requirements of the relevant materials.

At the exhibition they will present weaving accessories for different application fields – for example, the high-performance heald frame ALtop® Hybrid® characterized by its outstanding bending resistance and simple handling as well as long service life and consequently reduced demand of spare parts. In addition, they will exhibit products for special applications like the TWINtec heald that can be used for weaving carbon fiber, aramid and glass fiber.

The Knitting area will present its expanded range of warp knitting products. Step by step the needles and system parts will be complemented by modules for tricot machines. In addition, they will present the most precise needle available in the market to show the difference that circular knitting needles and cylinders can make when it comes to fine fabrics.

Groz-Beckert ALtop® Hybrid®

Itema (Hall 3.0 / Stand D05) is the only manufacturer in the world to provide the top three weft insertion technologies: rapier, air jet and projectile, with an ample product portfolio and a commitment to continuous innovation and technological advancement of its weaving machines. Itema offers the right weaving machine for most types of woven technical fabrics: from agrotech to geotech, medtech and sport tech to name just a few.

The ITEMA experts will inform about their star products and latest developments in weaving machinery: the R9500 Rapier Weaving Machine, the A9500 Air Jet Weaving Machine and the P7300HP Projectile Weaving Machine. This is a further development of the P7300HP and is targeted

towards future market needs. The low energy consumption, its versatility and the outstanding adaptability to the ever changing market make the projectile weaving machine a safe investment with excellent return on investment.

The projectile weaving machine is best suitable for technical fabrics. P7300HP is available from 220 cm up to 655 cm. This is the widest weaving width.

Itema P7300HP

KARL MAYER (Hall 3.0 / stand E18) will be exhibiting at Techtextil 2015 as an expert partner in the development of innovative solutions, which are setting new standards in many areas of everyday life and industry. On its stand there will be a meeting room in the shape of a tower with a spiral entrance. This is made entirely from warp-knitted spacer textiles and is designed to create a peaceful sanctuary. The 3D textile has a special construction to enable it to act as a sound-absorbing material.

Textiles made from carbon and glass fibres for reinforcing composite materials will also be another topic. A futuristic installation will be demonstrating the process from production on the machine to resin treatment.

A Swing rocking chair shows what attractively shaped products can be produced by combining a reinforcing textile with the right matrix material. This comfortable chair is made from concrete with a reinforcing material made from a biaxial carbon-fibre textile. Visitors will be able to learn everything there is to know about processing textile reinforcement into furniture by watching a video at the infopoint.

In addition to Paulsberg's film, another will also be shown illustrating the design features and operating sequences of multiaxial warp knitting machines. (*Please read the article about the Swing rocking chair*)

Karl Mayer Biaxtronic

With a collection of functional fabrics for the sports sector, warp-knitted textiles will be demonstrating all their special features in terms of performance enhancement, perspiration wicking and heat management – from shirts to shoes.

The products being shown on KARL MAYER's stand will give just a small insight into the wide range of applications in which textiles produced on the machines developed by this company can be used. They may also be used, among others, in the building industry, medical and health sector, agriculture, aircraft construction and the automotive industry.

Lindauer DORNIER' s (Halle 3.0 / Stand D01) actual production range comprises the product family of rapier and air-jet weaving machines for terry, EasyLeno® and TireCord as well as all applications in technical textiles, home textiles and garments. The experts from the weaving market leader will be glad to discuss the most modern weaving solutions for fabric manufacturing. For example the advantages ot the new DORNIER Air-jet Weaving Machine with EasyLeno® - 2T device in 360 cm nominal width.

Completely innovative leno fabric structures (drebfabrics) can be produced using a newly developed leno technique EasyLeno® 2T that works with two warp end systems. Switching from plain to leno weaves opens up a whole new range of varying transparency levels, higher color brilliance and filling densities, slip resistant, open fabrics, relief-type surfaces as well as up to 30% material savings. Our customers have come to recognize this new technique as a highly productive, material saving alternative to classical basic weaves and as interesting and significant enhancement to their conventional product range.

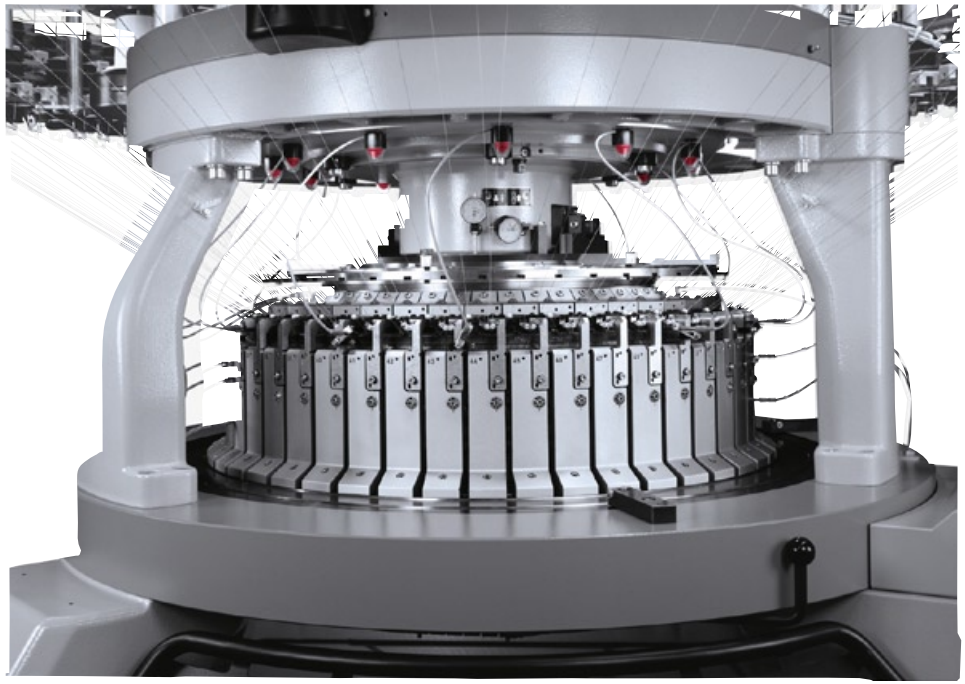
Another interesting topic will be the DORNIER Air-jet Terry Weaving Machine ServoTerry® with Jacquard Combination. With the new ServoTerry® air-jet weaving machine DORNIER provides quality terry weavers a high value, flexible and extremely economical tool. The machine guarantees in Jacquard or dobby version fewer ground warp end breaks and ensures exact loop creation with it´s patented soft reed impact at a speed of 700 rpm.

Terry movement runs directly over a servomotor that controls different pile weaves and infinitely variable pile heights during running. Selvedge formation can be offered with patented leno selvedge devices, type MotoLeno®, or with the patented pneumatic tuckers, PneumaTucker®, on the outside and in the center.

Dornier P1 PTS 8/S20 C

Mayer & Cie (Halle 3.0 / Stand A06) offers a product range which covers all possibilities to produce any kind of today's fabric styles of circular knitted fabrics with a broad range of machines, for example high productive Double Jersey machines for Double Knit structures such as Interlock, Eight-Lock structures, Rib and Rib Structures, Double face fabrics with and without Lay-in Yarn and Double Jersey Striper fabrics.

A very interesting machine is the Technit D3 which knits 3 threads on the cylinder side. Two of them can be used as functional threads. The first plated thread is 50% visible on the face side (depending on the yarn used and machine setting), while the second plated thread is concealed in the centre of the fabric. This technology opens up totally new application possibilities for circular knitting factories. The Technit D3 can be supplied optionally for fine rib or spacer fabrics.



Mayer & Cie Technit D3

This allows fabrics for functional clothing as well as technical textiles with extremely high abrasion resistance values to be produced on one and the same machine.

Up to 4 needle tracks in the cylinder cam box and 2 needle tracks in the dial cam box offer outstanding flexibility as well as broad scope for patterning. The extremely varied fields of application range from work apparel to heatable outdoor clothing or car seats, lining fabrics for shoes, medical technology, interior linings and upholstery in the automotive sector, seating and upholstered furniture and much more.

Picanol will be at the Belgian Lounge (Hall 3 / Booth B28), organized by Symatex, the Belgian Textile Machinery Association. As a global leader in the industry of weaving machines , Picanol NV enjoys growing success in the market for technical textiles. Picanol offers technical weavers highly customized solutions for very specific applications, based on machine platforms that are also applied in mainstream applications. During Techtextil, Picanol will be presenting break-through solutions in different fields like Wide weaving (up to 540 cm) , Heavy weaving , OPW-airbags, Agro-textiles, Carpet-backing etc. Picanol has the strong ambition to further grow together with its technical customers – enhancing their market success.

Picanol OptiMax-4-P 540

Stäubli (Hall 3, booth B02) will showcase two machines that fit especially well in the production process of technical textiles. Furthermore a selection of technical fabrics that have been produced in conjunction with Stäubli products such as dobbies, Jacquard machines, warp drawing-in, or tying equipment, will be shown. Unival 100 – single-end control Jacquard machine offers more benefits for sophisticated technical textiles such as automotive and aeronautic textiles, technical textiles in the sports, industrial, medical sectors, and new fabric constructions, even with glass fibre, carbon, and Kevlar. The versatile UNIVAL 100 will be demonstrated at the Stäubli booth.

The MAGMA T12 warp tying machine for technical yarn ties monofilaments, coarse multi-filaments, PP ribbons, bast fibres, coarse staple fibres, and many other fibre types. It has been developed for universal application ranging from coarse technical yarns to medium yarn-count range. Its rigid design includes an optical double-end detection system. MAGMA is being demonstrated at the booth tying a monofilament, ø 0.4 mm, at a density of 7 threads / cm.

Weavers who count on Stäubli high-performance machinery benefit from features like high reliability and flexibility will be able to take the lead on the market of technical textiles with innovative and creative products for countless applications.

Stäubli UNIVAL 100

Stoll (Hall 3.0 / Stand C19) offers solutions in the application areas clothtech, upholstery fabrics, medtech, sports equipment and production processes.

Stoll-flat knitting machines offer an enormous application and productivity potential when it comes to technical textiles: They permit the fast and flexible production of articles with complex shapes using the absolute minimum materials without producing waste and eliminating the need for subsequent making-up processes. For example The CMS ADF-3 from Stoll represents another milestone in the company's history.

Stoll CMS ADF-3

With 32 independent yarn carriers, 16 tracks each with two yarn carriers, a single yarn carrier type for all knitting applications, a gauge range from E 10 to E 18 (and E 6.2 to E 8.2) including Stoll-multi gauges®, a working width of 50"/127 cm and three knitting systems, this machine is one of the most versatile in the world.

Furthermore the Stoll experts will explain why Stoll-flat knitting machines offer a number of productivity benefits concerning the production of composite fabrics and industrial textiles.

Other suppliers

DOLLFUS & MULLER (Hall 3.0, Stand E 66) produces technical textiles for technical textile manufacturers and will present their technical woven fabrics such as exclusive dryer belts for textile dryers and non-woven dryers. Dollfus & Muller manufactures special belt joints to avoid web marking. Furthermore, the company will present at Techtextil other specialized woven fabrics such as fluidization fabrics for the transport of powders (alumina, cement, plaster) and fruit filters.

DOLLFUS & MULLER weave fabrics up to 5.15 meters width in different materials such as aramid, polyester, polypropylene, PPS, polyamide.

We have now come to the end of our brief preview of the exhibitors, products and innovations. We hope to have provided you with some interesting suggestions and profiles even though, despite the length of the text, the individual presentations are short and only represent a small excerpt from the full programme. Finally, we would like to wish you an enjoyable time at the trade fair and hope that the ideas you encounter there will actually develop into innovations. To cite the German Wikipedia definition: “Innovations, in the strict sense of the word, do not emerge from ideas until the latter have been implemented in new products, services or processes which actually find successful applications and penetrate the market (diffusion).”

The non-woven industry is growing faster

A study on technical textiles published at the press conference at the Techtextil trade fair in Frankfurt in January 2015 made the nonwoven industry in particular sit up and listen, as this industry is increasingly transforming into the secret star of the technical textile sector in terms of growth.

In 2011, with a quantity of 7.6 million tonnes and a value of 26 billion US dollars, the proportion of nonwoven textiles in the technical textile segment amounted to 19% and 10% respectively. These proportions still appear rather low considering the numerous uses of nonwoven textiles, but will increase, as nonwoven textiles are growing more rapidly than technical textiles as a whole.

In the decade between 2002 and 2012, the worldwide production amounts of nonwoven textiles more than doubled from 3 million tonnes to 7.7 million tonnes. This result is also reflected roughly in the produced value, which increased from 15.1 billion US dollars to 30.6 billion US dollars. This yields an estimated average annual growth of more than 7%, and a similar growth is also forecasted for the decade between 2007 and 2017. During this period, the quantities are set to increase from 5.6 million tonnes in 2007 to more than 10 million tonnes in 2017. In terms of value, the growth will even increase to more than double, from 20.9 billion US dollars to 42.1 billion US dollars.

This sounds more than good. However, based on the current figures from 2013, the growth would slow down a little in the coming 4 years. In terms of value and the stated increase from 33.3 to 42.1 billion US dollars, the annual increase would amount to around 6%, and in terms of the increase in quantity from 8.5 million tonnes to just over 10 million tonnes, this would be around 5%.

Now let's take a look at the worldwide distribution of production.

In 2013 China produced 3.2 million tonnes, Europe around 2 million, North America 1.6 million and the rest of Asia 1.2 million tonnes. The rest is spread between Africa and the Middle East with 0.7 million tonnes and South America with 0.6 million. China already became the world market leader in the nonwoven industry in 2012 in terms of production quantity, too, with a market share of 28%. However, this advantage reduced somewhat in 2013. There were no figures available on the proportions of the global market in terms of value. However, it can be assumed that Europe and North America remain leaders in this respect, since China produces a lot of goods in lower-value segments of the nonwoven industry such as cleaning cloths, for example.

The forecast for the global market share for 2017 is somewhat confusing, as no growth at all is specified for Europe for the next for years, and it is set to remain at 2 million tonnes. The primary growth markets are China, which is set to grow from 2.4 to 3.2 million tonnes (+33%), the rest of Asia, from 1.2 to 1.7 million tonnes (+41.7%) and North America, from 1.6 to 1.9 million tonnes (+18.75%). According to our analysis, these figures do not correspond to other sources, or have since be superseded.

For example INDA, the Association of the Nonwovens Fabrics Industry with heaquarter in the USA, announced in March 2015 that from 1990 to 2014, North American nonwovens capacity has increased an average of 5.5 percent per year, outpacing U.S. real GDP, which grew at 2.5 percent per year over the same period. During this time the industry has more than quadrupled in size, adding 1.95 million tonnes.

In 2014, North America's nonwoven capacity increased to 2.71 million tonnes, (1.2 percent annual growth compared to the previous year's growth of 1.5 percent). Based on this data, North America has a much higher capacity, but has grown less than forecasted.

In a press release in March 2015, on the other hand, Edana reported a high growth for Europe for the year 2014: "According to figures collected and compiled by EDANA, the overall production of nonwovens in Europe grew by around 4.7% in 2014 to reach 2,165,000 tonnes. Despite two lower growth years in 2012 and 2013, the annual average growth rate has been nearly 5.3% since 2009. Obviously, diverging trends can be observed in different European countries and between the various production processes of nonwovens."

Jacques Prigneaux, EDANA's Market Analysis and Economic Affairs Director advised "Spunmelt nonwovens recorded its highest growth rate since 2011 with 3.3%. Nevertheless, following two years at around +3%, the production of fiber-based materials, including drylaid, wetlaid and airlaid technologies, recorded an even higher increase of 5.9%. The highest apparent growth in tonnes were observed in hydroentanglement and needle punched bonding processes within the drylaid production, with respectively + 9.3% and + 9.1%".

The hygiene market, which is still the main nonwoven end-use in volumes, has grown by 6.1% in 2014, following a limited growth of 1.8% in 2013.

The main driver of this increase was the development observed in the incontinence market.

The most significant growth areas for nonwovens in 2014 were in personal care wipes (+12.1%), floor covering (+12.3%), civil engineering (+11.9%) and automotive interior (+13.1%), and positive evolution in those nonwovens materials used in electronic and food & beverage applications should be also highlighted.

Overall, according to the Commerzbank study with Edana as its source, the application areas for nonwoven textiles in the global market is dominated by the hygiene sector with 32%, followed by construction with 20% and cloths with 16%. These three groups therefore make up more than 2/3 of the world market. The rest is relatively evenly spread over the other areas of shoes/clothing (3%), medicine (3%), filtration (3%), vehicle construction (4%) and furniture (5%). 12% are not broken down any further and form the “miscellaneous” category.

If we compare these percentages to the 2014 figures, we would come to the conclusion that it is the smaller areas of application that have grown heavily. These are very positive signs for the industry, as the numbers also demonstrate that nonwoven textiles are being used increasingly and are therefore displacing other materials. For example, the global automotive industry grew by 5% in 2013, whilst the amount of nonwoven textiles grew by 13.1%.

And it is also these growth rates beyond the 10% mark that are making nonwoven textiles a market of the future and a key industry in the European Union.

Let’s take a look at the cost structure of the nonwoven manufacturers, using the example of Germany in 2011. Here, the material costs dominate with 60.1%, according to the study by the Commerzbank with GTM as its source, followed by 18.6% for personnel and 4.6% for energy costs. The expenditure for write-offs is 3.7% and for interest only 0.6%. The material costs were at 54% in 2009 and then rose dramatically in two years. Reasons for this could be that the manufacturers were unable to add the rising fibre prices to their products or that other costs dropped. However, the earnings figures cited in the study argue against the second assumption. The cited EBIT of German manufacturers over the last five years is said to have been -1.7% (2009), 2.9% (2010), 3.1% (2011), 1.5% (2012) and 1.2% (2013). This EBIT figure seems very low to us and would probably indicate little more than break-even in earnings as a result in the last two years. This would be unsatisfactory for a growth market in particular, as the write-offs do not suggest excessive investments either.

We now want to take a look at a company. The nonwoven sector of the Freudenberg Group, a global market leader in the spunbonded nonwoven sector, was able to increase its turnover in the 2013 financial year to 660 million euros (+ 1.4%) from 650.5 million the previous year. Freudenberg writes: „The 2013 financial year was an encouraging year for Freudenberg Nonwovens.

Although sales remained almost constant, there was a significant improvement in the operating result. This was mainly attributable to higher profitability in the Interlinings and Technical Nonwovens Divisions. This development has created a good basis for profitable growth."

We do not have a profit and loss account specifically for the Group's nonwoven sector, but in the Group's earnings, with a turnover of 5,646 million euros, Freudenberg achieves earnings of 399 million euros and therefore 7% of the turnover. The write-offs represented 4.2% and personnel expenses 30.6%. If these figures more or less applied to the nonwoven sector, Freudenberg would be ten times as successful as the industry on average, in spite of higher write-offs and personnel expenses.

Another very successful company is Sandler from Germany. It is Sandler' s core business to produce nonwovens for a broad range of applications. In 2014 Sandler again increased its annual result, registering a record turnover of € 286 million for the year of its 135th anniversary. The company manufactured approximately 101,750 tonnes of nonwovens for customers around the globe. Sandler's earnings, too, represent around 7% of the turnover.

The reasons for the success could be a healthy mixture of innovation in products and investment in modern production facilities. Especially with the high material costs in the industry, high-quality refinements of products for demanding areas of application and an optimum material consumption by modern production facilities are certainly a key to success.

The 109 exhibitors in the nonwovens product group at the upcoming Techtextil trade fair in Frankfurt will certainly present many solutions in both areas. Market leaders in the nonwoven industry such as Freudenberg and Sandler as well as mechanical engineering companies for the production of nonwoven textiles will be presenting their innovations here. Global market leaders such as Autefa Solutions, Dilo and Trützschler will be on-site to present their solutions for increased productivity.

Rocking with a rigid material

The "Swing" rocking chair made from an unusual material – textile-reinforced concrete

Concrete is modern, reliable, efficient, mouldable and sustainable, and is the perfect building material for every project. When used in conjunction with textile reinforcement materials in particular, the second most used substance on earth after water can be made into highly stable, slimline constructions. /1/

Figura: © Paulsberg

The Paulsberg Design Studio has shown what can be made from textile-reinforced concrete by developing a range of furniture. The furniture items produced by the designers in Dresden can be used outdoors as well as indoors.

They are clean and compact - and their materials and shapes excite our emotions. Paulsberg made a name for itself on the furniture scene in 2010 when it produced a chair made from textile-reinforced concrete. The latest development from these imaginative designers is the “Swing” - a rocking chair that combines stability with fun and comfort.

With its unusual combination of materials, this stylish chair consists of a comfortable cushioning material with natural bio-leather and textile-reinforced concrete in the curved bottom section. The surface of the rocker is also covered with leather to protect the floor. This exclusive rocking chair was manufactured by hand and was produced as a limited edition of just 100.

Biaxial textile reinforcement

The concrete is reinforced with a biaxial textile made from carbon fibres. As the essential function of the concrete cover – the corrosion protection required for reinforced concrete – is no longer necessary, the thickness of the concrete layer depends on the minimum requirements of the bond and on the thickness of the yarn. Consequently, the load-bearing textile-reinforced concrete layers can be very thin.

The textile reinforcement is very stable, of high tensile strength, corrosion-resistant, lightweight and easy to process. The combination of concrete and textile reinforcement results in a material which – in terms of its layer thickness and dead load – has a very high load-bearing capacity, thus, belonging to the composites featuring a high degree of durability and efficiency.

In general, textile-reinforced concrete can be used for various applications in construction: for the manufacture of new components, for the reinforcement of existing components as well as for furniture and works of art.

These stable, biaxial layered textiles are produced on efficient Multiaxial machines and/or on weft insertion machines made by KARL MAYER. The machines of this well-known textile machinery builder can be employed to insert the high-strength yarns so that they correspond to the direction in which the force will be applied, thus, producing high-performance reinforcing textiles, which have already made a name for themselves in the field of fibre-reinforced plastics, for example.

/1/ Concrete furniture is on the way up, press release issued by Lafarge, July 2013

Texprocess is the answer to new demands in production competence

Visitors of Texprocess can expect to face the spearhead of technology

Why textile production is becoming drastically modernised, and why a visit to Texprocess is virtually a must.

Shortly, to be exact from the 4th to the 7th of May, the Texprocess is to take place for the third time in the trade fair city of Frankfurt, Germany. As in previous years, the Texprocess will be happening at the same time as the Techtextil exhibition in a two-year cycle. The international leading trade fair for processing textile and flexible materials will be presenting the most modern technology for design, cutting, IT, sewing, bonding, stitching, refining, finishing and logistics.

Both previous Texprocess events can be considered a success. Even more so when one considers that one of the main reasons that the Texprocess was established four years ago as a new trade fair for the clothing and leather industry was the dwindling number of visitors to the previously existing trade fair. Primarily it was the absence of international visitors that exhibitors complained about.

All that can be said retrospectively in this case to the address of the Garment and Leather Technology Association of the Federation of German Machine and Plant Manufacturers (Verband Deutscher Maschinen und Anlagenbau - VDMA) is: the right decision was made - the result is that the Texprocess has become, following two successful events, a well-established appointment in the clothing sector calendar. One of the reasons for the huge success is surely to be attributed to the coupling with the Techtextil, which gives visitors to the events the opportunity to discover a variety of topics in a manageable amount of time. Another reason is clearly the perfect organisation by the Frankfurt trade fair staff, which guarantees that everything runs smoothly and always brings with it fresh ideas to the trade fair with a varied supporting programme.

Let's take a look at a few figures. 330 exhibitors (+4% on 2011) presented their products and solutions at the Texprocess 2013 and covered the entire value-added chain. Their offering reached over 12,100 direct visitors (+16% on 2011) from 98 countries, as well as 8,100 from the parallel Techtextil. The high level of internationality of the Texprocess must also be mentioned, with over 60% of the exhibitors, and more than 50% of visitors coming from abroad. In a survey of the visitors, 94% said that they were happy or very happy with their visit to the Texprocess.

As we already mentioned in our report concerning the Techtextil, we would like to inform about a few of the key points and exhibition the highlights in more detail. In the event that you are still undecided about a visit, a few pieces of background information will certainly be useful in making your decision.

The product offering of the Texprocess extends across all steps of value added textiles from fabrics to clothing, and includes design, IT and cutting, as well as sewing, bonding, stitching and knitting, all the way to finishing, textile printing and logistics.

The hall concept, developed for the Texprocess 2013 and which proved to be very successful, will be kept for the Texprocess 2015: In hall 4, visitors will find a number of innovations from the areas design, IT, CAD/CAM, cutting and the ITTexprocess special area. In hall 5, exhibitors will present innovative machines and accessories for sewing, stitching and bonding. The programme is rounded off in hall 6 with embroidery techniques, finishing and textile logistics. The “Source it” area, a special area in 2013, will not be a special area in 2015, but will rather be integrated as a product group of Texprocess as well as a topic of the Texprocess forum.

Four months prior to the start of the Texprocess, 95% of the previous exhibition space had been rented. Two years ago, at the same point in time, it was only 70% - according to the Messe Frankfurt. The Texprocess is growing in a number of directions:

Textile machines, sewing, bonding and fastening technology, automatic control engineering, textile finishing, cutting and automatic control engineering as well as product processing and finishing are all gaining importance.

Two pieces of news should be of particular interest for the clothing industry and relation producers. On the one hand, growth of more than 23%, as quoted by the VDMA German Garment and Leather Technology Association, of the German and European clothing and leather technology sector in the period between January and October 2014 must wake up the whole sector to pay attention. The question is often asked, "who has invested what and to what end?". After all, a significant increase in volume generally heralds a paradigm shift. A factor which could spontaneously force itself into considerations, is the investment in more "sustainability", that is to say the energy-saving, environmentally-friendly systems. The same can be said for investment in IT, namely in CAD, 3D, PLM and Cloud software systems, which make a global collaboration possible through significantly optimised processes

This is exactly the way Elgar Straub sees it, Managing Director of the VDMA German Garment and Leather Technology Association. "The integration of industry 4.0, and with it the digital interweaving of design, processing and logistics of clothing and textiles, remains decisive in competition. Sustainable production also continues to play a significant role, above all else under the background of increasing state regulation," he says.

Sustainability is developing from a "nice-to-have" more and more to a "must-have", in order to keep up with the competition in future. Many retailers and brands have issued very high targets in the last two years in terms of their own sustainable development and have to set a tremendous pace to keep their promises. The fashion giant H&M, for example, publishing a a CSR report already since 2002, investigated all challenges along its textile value added chain and evaluated its influence on the sustainable development.

The results were published in the 2013 Sustainability Report of H&M: Clothing production only has a minimal impact on environmental pollution (6%) and water pollution (1%), and therefore a minimal impact on generational equity. However, clothing production still has the greatest effect on the working conditions of the textile workers and in turn social equity around the world.

"Choose and reward responsible partners" is one of the seven commitments which H&M has adopted. It is our oppinion that alongside labour protection and wages , this kind of responsibility also needs a modern and well-equipped place of work for employees, which furthermore helps to compensate higher hourly rates through increased productivity.

Especially those who use out-dated systems as profitable cash cows could encounter problems with their "business model" in this way; brands and retailers are conducting more and more audits at textile companies.

At H&M, for example, this inspection must be carried out every year, the sustainability efforts of suppliers and their factories must be inspected and new partners must be inspected in detail, before production orders can be placed. For this reason it is all the more important for clothing companies that they are aware of the standard of technology, even if it is only to be able to categorise their own production competence. In this respect, the Texprocess is a welcome parade of performance.

Production competence is also being increasingly influenced by IT and networking. Frequent changeovers and ultra-short "time-to-markets" of fashion show trends to finished clothing on the shelves demand structured processes which must also be supplemented by the best technology available.

"3D is a key competitive factor for clothing companies who want to visualise their products in a top-quality way and to integrate their digital models optimally into their business models," said Human Solutions/ Assyst Managing Director Dr. Andreas Seidl in an interview with TexData, shortly after the Texprocess 2013, and specified CAD-Management, cooperation, automation and systems integration as the new tasks of the CAD systems of the future. Now, at the Texprocess 2015, Human Solutions/Assyst is taking a step into this future under the motto "One process for fashion," and is presenting the interaction of their solutions for the whole process chain.

Even if IT has been integrated into the processes of the clothing and fashion industries for quite a number of years, and 3D is no longer to be viewed as new technology, the dynamics in development in the software and process control areas continue to remain impressive.

Many of the systems from leading manufactures have been redeveloped, improved and further integrated in the last two years.

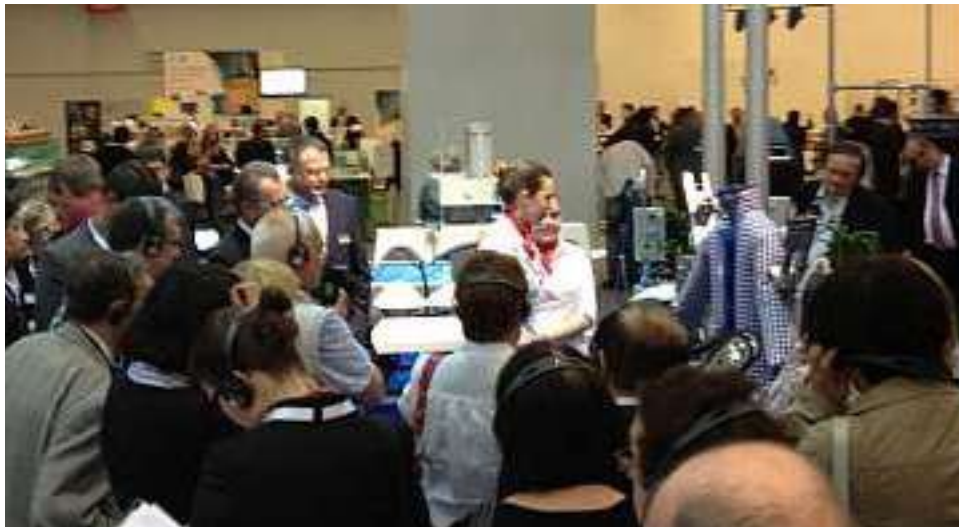
An example of this is that of Gerber Technologies, a further market leader, who, in the spring of October 2014, announced a new version of its widely popular Software AccuMark. AccuMark 10 comes with a completely integrated 3D solution for the design of clothing and type designs. "AccuMark 10 will change the idea of type designs in a big way. This technology will bring us to a new level of efficiency and speed in the design process," says Mary McFadden, Director, CAD Product Management at Gerber Technology.

Yunique Solutions, a business division of Gerber Technologies, shows just how important Cloud-solutions have become for clothing production. At the end of March, the company released a test drive for their PLM solution "YuniquePLM™ In The Cloud" specially developed for the fashion industry. The solution is available as an Amazon Web Service (AWS) and companies can register and test the functionality within a matter of minutes.

This few examples give an impression that visitors can expect a lot of the IT on show at the Texprocess. And it is likely that there will be a variety of innovations also in the other 19 product groups (table 1), such as “cutting and automation technology” or “sewing, bonding and fastening technology”.

Product Groups of Texprocess	
01	Design, product development, automation technology
02	Production preparation and organisation
03	Cutting room and automation technology
04	Fusing, setting and manufacturing preparation
05	Textile machinery
06	Textile finishing
07	Knitting technology
08	Embroidery technology
09	Stitching, joining and fastening technology, automation technology
10	Stitching, joining and fastening materials, technical accessories for garment, house and home textiles
11	Product processing and Finishing
12	Energy, air-conditioning, disposal, recycling
13	Quality control
14	Internal material flow
15	Textile logistics
16	Information Technology
17	Services, consultancy, training
18	Media
19	Research, development and training
20	IT@Texprocess

It is the power of innovation which makes the trade fair so impressive and is the main reason that many of the textile people travel to Frankfurt.
As in previous years, the best innovations will be awarded with the Texprocess Innovation Award. It does not play a role whether the company is a global market leader or a start up.



Presentation of Innovation at Texprocess

The award is even open to non-exhibitors. The only thing that counts for the award is that it must be an outstanding development, the product must be new - that is to say it may only have been available on the market for no longer than two years, and that the market launch is imminent. Furthermore, the product may not have won any other awards.

Alongside innovative exhibits, visitors can expect up-to-date presentations at the Texprocess Forum. The following topics will be discussed: Sourcing, country presentations, sustainability and social standards, entry to the Chinese Market, trademark protection, customs guidelines, new technologies, logistics, 3D, space management, PDM/PLM and RFID.
We find the topic “entry into the Chinese market” particularly interesting as there are significant opportunities here for European and before anyone else German clothes producers, as recently announced by Germany Trade & Invest (GTI). A particular popularity of western clothing products stood in stark contrast to a particularly low import quota.

Anyone who now thinks that everything does not yet have any “Sex Appeal”, we would like to stress to him that the production basis for the clothing of tomorrow is going to be presented and that through technology the changes effected for fashion conscious consumers will more than likely be very sexy. The organisers have come up with a brand new idea to underpin this: The first “Innovative Apparel Show” will be a “live-on-stage presentation” of innovative materials and functional clothing textiles designed by renowned textile research institutions and universities.

The “Innovative Apparel Show” also forms a bridge to the Texchtextil: materials for the technical textiles and non-wovens are integrated into the “fashion show” which makes it different from classical catwalk events. This is a promising new idea for the tried and tested recipe for success for the double-bill event comprised of the Texprocess and the Techtextil.

It’ s clear: organisation, innovation and dialogue makes Texprocess 2015 once again an event that will satisfy nearly all exhibitors and visitors. Oh, do you remember? We said that there were two important pieces of news for the clothing sector.

The second piece to pay attention to is to do with growth and the clothing market itself. The global population continues to increase and the buying power of the growing middle class is increasing in the emerging markets. This also entails that the desire for fashionable clothing is growing. According to information given by the WTO, clothing exports increased by 9% to US$ 460 billion in 2013. Of this amount, US$ 118 billion were accounted for by the 28 member states of the EU. While the amount of clothing being produced continues to grow in traditional producing countries, such as China, Vietnam and Bangladesh, other countries such as Thailand find themselves in the midst of an upheaval; the same is true of new markets such as in Ethiopia and Myanmar.

Well, we’ve named quite a few reasons why a visit to the Texprocess is certainly worth it. At least for our part we are looking forward to the variety of innovations and the highly interesting events and talks.

Interview with: Mr. Peter D. Dornier

Managing Director of Lindauer DORNIER

“It is of special importance that we cover a large range of applications across the market.”

Dornier is one of the most successful textile machine builders in the world, and is recognised as a manufacturer of the highest quality and precision. What type of corporate culture is behind this success?

Mr. Dornier: One must go back in history, because my grandfather and Graf Zeppelin, as his mentor and sponsor, already laid a foundation-stone with their curiosity for new technologies and unusual solutions. Both men were always driven by a constant desire for improvement. This inspiration also permeated Dornier aircraft construction at that time, and then migrated to weaving machines through my father. There is simply a „DORNIER Spirit“ which belongs to the tradition of the enterprise. This means, for example, that we are reliable partners and we maintain an open enterprise culture in which the experience as well as the creativity of our employees are very important to us. When the trend arose - at end of the 80's - to brand company values, we decided on the slogan „DORNIER - Quality creates value“ which, in my opinion, reflects the work of our enterprise in a decent way.

The Techtextil will begin soon. You're very well positioned in the weaving segment, particularly when it comes to technical textiles. More and more European weavers are turning to technical textile production as a second pillar. How do you envision the future development of the market?

Mr. Dornier: One must keep in mind the fact that the volumes of technical textiles are not yet at all comparable with those of classical textiles.

This area is still small, even if upscale and rather complex. However, this will change. Take, as an example, Groz-Beckert and their recently founded company „solidian“ for textile concrete, or textile concrete reinforcement. About 750 million tons of steel are processed worldwide in the building industry. If one succeeds in substituting just 1% of this with textiles, it amounts to 7.5 million tons of technical textiles.

Also in other application fields, e.g., the automobile, aviation and astronautics industries, tonnages will increase in thread and surface. For the purposes of CO_2 reduction it is a matter of saving weight and here textile solutions have unequivocal advantages.

I see growth chances also in mechanical engineering. Since long ago we already produce rapier rods for our shuttleless weaving machine and leaf springs made of carbon-fibre reinforced plastics, adapting ideas from aviation and astronautics for our weaving machines. Today many machines would not function so efficiently if they had no composite assemblies or parts.

The technical textile area, and especially that of composites, will certainly grow. But we'll have to be patient. It took 30 years for aluminium as a building material to replace woven cloth, wood and piano wire in the field of aircraft construction.

Well, it took some time for weavers to realise that technical textiles could not be produced on standard weaving machines. The demands for quality, uniformity and process stability have increased steadily and you as a machine builder have developed innovative solutions to customer standards. What's the situation today? Are you in step with the customer or, as an engineer, are you already anticipating tomorrow's challenges?

Mr. Dornier: Of course, we listen precisely to our customers and their demands, which are very important to us. Our top customers often come to us at an early phase so that we're able to co-operate with our expert assessment creating the optimum solution for their desired product. Naturally, we tend to consider these demands and ask ourselves, what's coming next?

Additionally, we visit many fairs at which our customers meet their own customers, and we peruse the trends here. Examples are the Heimtextil, the EVTEKS in Turkey, the JEC, or the upcoming Techtextil. By the way, we've been participating at the latter from the very beginning and were the first mechanical engineering enterprise to exhibit.

It is of special importance that we cover a large range of applications across the market and have many, very different customers with individual demands out of which many transferrable ideas can arise.

I'd like to tell you of one relevant occurrence: At the ITMA in Munich we had introduced a new back-rest roll for our weaving machine which had been developed especially to facilitate weaving Kevlar for ballistic use.

One of our fine-worsted weavers from Biella in Italy took a look at the innovation and arrived at the idea that this invention ought also to be well-suited for woolen fabrics. Today this back-rest roll is a standard feature in woolen weaving mills. This example points to evolutionary progress in the weaving mill when a big portfolio is available.

At the JEC in Paris last February you presented "DORNIER Composite Systems". Here the competences of the enterprise areas of weaving machines and special mechanical engineering are united with a view to being able to offer innovative machines for fabric production using high-performance fibres. What are the advantages of this new product line?

Mr. Dornier: As well as our weaving machines, for many decades we have also been producing film stretching machines. The thermoplastic foils produced with these machines are stretched biaxially in their molecule chains and oriented to 0° and 90°, similarly to a weaving process.

This procedure provides them with special qualities – for example, they have a higher tensile strength. One could say that stretched films are orientated molecularly, whilst woven structures are orientated in the macro scale.

A combination of foils and fabrics enables even more efficient solutions and new material classes.

One sees such materials, for example, at the airport on the luggage conveyor. The recent Samsonite suitcases catch the eye, as their structure is made from a new material, a hybrid made from thermoplastic foil and woven polypropylene tape. This composite material has a high stiffness and tensile strength, and in addition is extraordinarily impact resistant, as well as having a low dead weight. It is even considered to be superior to aluminium, the current top material for high-quality, hard shell suitcases.

At DORNIER Composite Systems we bundle our know-how for the production of such film and fibre composites. It is our aim to be able to deliver systems for universal manufacturing processes.

An innovation from this area is a tape handling plant for the production of thermo-plastically attached or consolidated tapes for different applications. The tape weaving machine converts flat threads with up to 25mm width into 0/90 fabrics. A coarse roving is used to create the tape which can be made, for example, from glass, Aramid or carbon and can be found cheaply on the market.

To significantly lower the costs of the production of such fabrics, we provide a suitable tape spreading and impregnation unit which offers many possibilities.

The weaving of the most varied technical threads to reinforce composites, in particular carbon fibres, has for many years been a firm component in the Lindauer DORNIER portfolio. A revolution had been expected in the CFRP (Carbon Fibre Reinforced Plastics) market, but this seems to be developing into more of an evolution. How do you see the future development of this market, and where are your main focuses to best satisfy market requirements?

Mr. Dornier: The market for CFRP will grow further and its uses will increase. This happens, on the one hand, because the CFRP solutions are becoming more and more performant compared with competitive materials, and on the other hand, the production procedures are becoming more efficient, meaning lower production costs. Take our machine for weaving 3D-structures, for example.

The Jacquard weaving process is over 200 years old but more in vogue today than ever. Today, one speaks of „Industry 4.0“ and „Digitization“ and it is sometimes forgotten that Jacquard patterns could be stored even then using punch cards and be produced in 1000-fold repetition in many locations in the same quality. Basically weaving is a digital production process and the end product, the woven material, can be seen as a digital product itself, because the weft thread it provides for the fabric is used in only two positions, 0 for under the warp thread, and 1 for over the warp thread.

Today weaving goes to the third dimension and this has clear advantages. Compared with the classical procedure of forming CFRP parts by laying up plane layers, here the individual fibre-layers are interwoven with each other, increasing firmness. Currently, an engine manufacturer uses form weave, for example, for the production of turbine fan blades. The blades are drawn readymade from the Jacquard-weaving machine and need only to be put into an RTM mould where the resin is injected. Then they are finished. With their internal carbon-fibre 3D weave structure, these components are not only very light, but also vibration and impact resistant, too.

Thanks to such innovations, ever more metals can be substituted with composite materials.

You are also chairman of the Walter Reiners Foundation, named after a VDMA textile machine sector chairman who was instrumental in the 1960's for supporting scientific talent. Can you tell us more about it?

Mr. Dornier: Walter Reiners was a former managing director and partner of Schlafhorst in Mönchengladbach. As a son of a well-to-do Rhenish family, he was keen to support gifted engineers. Student research projects, master and doctoral thesis are distinguished by endowments with sums of money which are of interest for young scientists. As well as promoting young people, Germany as a production location is strengthened.

This was important to Mr. Reiners as a chairperson of the VDMA. Today, Lindauer DORNIER GmbH and very few others produce exclusively in Germany, contrary to almost all other VDMA member enterprises. But the developing centres of the German textile machine builders are still mainly focused on Germany. Because of this we need top talent - although it's not absolutely necessary that the younger, sponsored generation takes up positions in the textile machine sector.

Many textile engineers are later on also involved in the production of technical textiles, working for our customers, or are hired by aerospace as well as automobile companies. On the other hand, prizewinning work doesn't necessarily have to stem from textile machine engineering. Awards also go to other areas as the substitution of metal by textiles. Last year, for example, an award was given to a study researching how steel ropes in conveyors can be substituted with ropes made from Kevlar, providing big advantages which arose simply from saving dead weight of the ropes.

How are things looking generally when it comes to new talent in the German textile machine sector?

Mr. Dornier: The three big universities in Aachen, Dresden and Stuttgart train up more than sufficient people. However, this is good because there are enough jobs in other branches which require textile engineers. University educated people are required for professional and leadership positions, so the situation is good.

However, for technicians the prospects are not so rosy. The number of technical colleges has significantly decreased. And for trainees suitable teaching methodology is often absent with regard to modern textile uses and production.

What can, or must, the textile machinery sector do in the medium and long term to ensure a well qualified professional workforce? Does it require more foundations or even an image campaign?

Mr. Dornier: There is prejudice in society at large concerning qualified textile jobs. It is just not well enough known which future-oriented materials the textile industry produces in Germany. Many enterprises train their own youth, following up a general education with specialist training for their own requirements. We do this too. We offer a mechatronic-based education with an added textile emphasis. This works well, even here in the area around the Lake of Constance where a lot of high tech companies are based. They have a very good reputation in the area, they supply quality goods and they all want the best heads and hands for their enterprises.

Important for the future is that professional training is adapted to the new demands of the occupations to be later assumed. Which is already happening. In Augsburg, for example – at the centre for CFRP usage here in Southern Germany – a new form of training was recently introduced for technicians and machine operators with its main focus on fibre reinforced composite materials.

For many years, sustainability has been a big subject in the sector, gaining even more momentum lately. It is also the main motto of the ITMA in Milan. Apart from the „blue competence“ initiative, what can a weaving machine manufacturer do specifically for extra sustainability? What makes a machine from your house a „green machine“?

Mr. Dornier: Well, first of all, like in the last fifty years, they are green - in colour. Though this is a nice joke, it doesn‘t say it all. Our weaving machines are primarily „green“ because on them, a lot of textiles are produced which make processes more sustainable, serve the cause of environmental protection, and provide for the fact that life is more secure. This is often forgotten when the textile sector is accused of polluting our environment.

The industry also does a lot for the environment and here I can safely say that our weaving machines have been market-leaders in these areas for decades. We are world market leaders with a share of over 60% with woven carbon and Kevlar, as well as 50% with glassfibre. All those are materials that help to save weight, thereby reducing CO2 output. Airbags are sustainable because they protect human lives.

Here our machines have a market share of approximately 60%. The first automobile airbag was developed on DORNIER weaving machines at the beginning of the 1980’s as a standard for Mercedes’ S-Class.

Or take as an example air and water pollution: A subject that is also becoming more and more important in China, which we addressed at the ITMA Asia, garnering one of the biggest orders in the history of our company.

Precision filters are woven on our weaving machines that are superior to Nonwovens in their cleansing effects. Also superfine metal fabrics, which are used in exhaust gas catalysts are made on our weaving machines.

I think that the examples of sustainability noted here make our machines „greener“ than their sheer optimisation, particularly as we are also at the forefront of factors often cited today, such as energy efficiency or material waste reduction and have constantly been developing new procedures over many years.

However, when it comes to sustainability, we will really excel by assisting in the replacement of metals through more sustainable textile materials. At DORNIER we‘re ready to meet any challenge. We believe in the motto: „If you can get it wound on a bobbin – bring it to us – we‘ll weave it for you!“

What is your personal view of the subject of sustainability?

Mr. Dornier: Already my father found the subject of environmental protection very important. If you were to visit our company in Lindau, you would see this reflected.

Our companies premises are a very green area, with many, partially very old trees. This unity with Nature creates a positive working atmosphere.

I think personally that it is also very sustainable to let a company grow organically – as we have done for over 65 years – taking advantage of the opportunities that arise, and in partnership with loyal employees at our locations and with our customers worldwide.

Interview with: Mr. Michael Jänecke

Director Brand Management Technical Textiles / Techtextil

“The textile industry is among the top 5 in terms of innovation-driven sales of products.”

Techtextil and Texprocess are set to achieve new records once again. Doesn't that get boring in the long term?

Mr. Jänecke: On the contrary. It's exciting to see an industry evolving positively. In 1992, I came from a Techtextil exhibitor directly to the trade fair. At that time, Techtextil had 376 exhibitors. Today, there are more than 1,380 companies, which clearly demonstrates the dynamics of the market. Of course, Texprocess doesn't yet have quite such a history, but the market data and trends are positive here, too.

The "Innovative Apparel Show" is a new and very fresh idea. Is it more for show, or what sort of genuine ideas and applications does it yield for textile producers?

Mr. Jänecke: There is a bit of everything there. What we have seen in advance is exciting, interesting, unusual and promising. Examples of this include the unconventional use of reflective materials, integrating LEDs and ultra-welding technology, to name but a few. The eight sponsors supporting the Innovative Apparel Show share the same opinion.

We recently wrote that the Techtextil trade fair has the potential to become the most important trade fair in the world, if all industries discover the fantastic opportunities offered to them by technical textiles and the almost infinite range of applications.

With mass production, the manufacturing costs would also become competitive on a level with established materials such as steel and aluminium. Is such a development primarily a "leap of faith"?

Mr. Jänecke: It is more a leap of knowledge and experience than a leap of faith. If we follow the development over the last 20 years, we can see that technical textiles are emerging in ever more applications, such as in geotextiles.

This also applies to special products developed together with the industry and end producers. In many areas of application, technical textiles are already state of the art, whilst they are just starting out in many fields and for many applications, they have not even been developed. Also, the prospects for further innovation are promising: the textile industry is among the top 5 in terms of innovation-driven sales of products.

The Texprocess trade fair has often seemed like the "little brother" of Techtextil. Why do you consider both events to be on a par?

Mr. Jänecke: Actually, the Texprocess is more the "younger brother" of the Techtextil fair, after all, the Texprocess fair only came into existence in 2011. The two trade fairs constitute a family, as both events complement each other perfectly and have many common target groups in terms of visitors.

In January, the VDMA German Garment and Leather Technology Association reported growth of 23% in the German clothing and leather technology sector in the period between January and October 2014. Such an increase in volume sounds like a paradigm shift. Can you really say no to visiting the Texprocess trade fair if you are involved with the textile industry?

Mr. Jänecke: For every company facing investment decisions and wanting to know where the markets and new technologies are, a visit to both events is a must. Many processing technologies in the textile industry have been seen in part in the clothing industry for years.

You only have to think about product lifecycle systems and sewing and cutting technologies, which are already familiar with the handling of many products in clothing and leather technology. Every representative of the textile industry who wants to produce high quantities and qualities needs to go to Texprocess, as well as the textile technology providers at Techtextil.

Let's talk about the Techtextil and Texprocess Innovation Awards. The projects have been submitted, and probably already rated, and the prizes will be awarded on the very first day of the trade fair in Hall 4.2 in the dimension room. How satisfied are you with the quantity and quality of submissions? Can you give us a taster?

Mr. Jänecke: The juries were pleasantly surprised, both by the quantity and the quality of the submissions. Today, we can announce exclusively that a project by the Hohenstein Institutes has won a Techtextil Innovation Award, and that a project by Veit GmbH has won a Texprocess Innovation Award. But there are also some lesser-known companies among the winners, who convinced us with their innovations.

The Texprocess Campus doesn't seem to feature much in reports about the field. We want to change that, because the industry needs young talent and has plenty to offer such as a high degree of internationality and creative work using the latest technology. How has the campus been accepted so far and what does it offer visitors?

Mr. Jänecke: Since the first event, Texprocess has been supporting the promotion of young talent in the sectors involved. More than ever, the material-processing industry needs high-quality professionals from home and abroad. That's why a key concern for us here is to promote the education and training of young people. International universities, institutes and fashion schools are introducing their programmes of studies and teaching on the Texprocess Campus without additional costs. The participants in the campus area are given a space as well as a complete booth if requested.

The Texprocess Campus currently has seven participants, including some very prestigious textile universities: the Frankfurt School of Clothing and Fashion, die Berlin University of Applied Sciences, the Niederrhein University of Applied Sciences, Dresden University of Technology, the University of Applied Sciences Zwickau, Reutlingen University and the ESITH from Morocco.

Traditionally, there are other universities and institutes exhibiting at Techtextil that are independent of the campus area. What's more, we are once again expecting student groups from Germany and Europe.

We very much look forward to meeting the many students from all over Europe, who will hopefully enjoy Texprocess and Techtextil and repeatedly come back to visit or exhibit at the two trade fairs in their later professional lives.

Finally, we have one more question about the supporting programme. There is the Texprocess Forum, which is free to visitors to Texprocess and Techtextil, and then there is the Techtextil Symposium, which is subject to a charge. In spite of the many exhibitor innovations, visitors are still making their way to the conferences. What is the secret to their success?

Mr. Jänecke: The concepts of the two conferences differ from one another. The Techtextil Symposium has historically grown and is an important addition to the event. It takes place in its own separate room. You can feel a closer atmosphere with a different type of interaction. The lectures this year are structured in six coherent topics and cover all the important topics of Techtextil: from technologies to new materials and composite materials to functional clothing. Visitors to the symposium should ideally stay in the room for the entire topic block and engage in discussions with the speakers and other participants.

The Texprocess Forum, on the other hand, takes place in an area within the exhibition. The topics are equally diverse, but differently structured and not divided into blocks. The concept behind the Texprocess Forum is targeted more towards a shorter visit.

Both programmes are extremely interesting, and certainly worth a visit.

With the important double event of the Techtextil and the Texprocess in Frankfurt in Germany, it is only right that we look more closely at Germany in this issue of our Country Focus series. Germany is known as the powerhouse of the EU. But how‘s it looking with regard to textiles?

Is Germany just an important market for textile manufacturers all over the world, or does Germany still have its own sizeable textile production in the country?

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However, before we follow these questions, we start, as usual, with some general information about the country.

Germany (Federal Republic of Germany) is a federally constituted country in Central Europe, and it has 16 German states. Germany lies in a temperate climate zone and borders on, in the north, the waters of the North Sea and the Baltic Sea, and in the south, the mountainous terrain of the Alps. Germany lies at the heart of Europe and has nine neighbouring states. In the north is Denmark, in the east, Poland and the Czech Republic, in the south, Austria, Switzerland and France, and in the west, Luxembourg, Belgium and Holland.

With a surface area of 357,340.08 km², Germany is one of the world's smaller countries. Indeed, it is the sixth largest country in Europe after Sweden and just bigger than Finland. With a population of nearly 81 million inhabitants, Germany is, on the other hand, the second largest country in Europe just ahead of France (66 million) and England (63 million), but behind Russia (104 million). Germany has a very high population density of 226 inhabitants per km². The capital and largest, most populous German town is Berlin with 3.4 million inhabitants. Other major towns are Hamburg (1.75 million), Munich (1.4 million) Cologne (1.05 million), and Frankfurt (0.7 million). About 25 million people in Germany live in towns of over 100,000 inhabitants. This corresponds to a proportion of 31%. One of the largest areas of population concentration in Germany is the Ruhr area in which about 5.1 million people live on a surface of 4.435 km². The Ruhr area is essentially formed by several cities that have grown together. From the settlements on the middle Lower Rhine, the conurbation moves west seamlessly to the Rhine Ruhr area and south to the Rhine river. Together these form the Metropolitan region of the Rhine Ruhr in which about 10 million people live in an area of about 7,000 km².

Germany is a founder member of the European Union as well as the Eurozone. It is a member of the UN (1973), the OECD (1961), NATO (1955), the G7 & G8 and the G20. Germany is the seat of the European Central Bank (EZB), the International Tribunal for the Law of the Sea (ISGH), as well as the European Patent Office (EPA).

The federal republic is a liberal-democratic and social constitutional state. The government form is a parliamentary democracy. The constitution of the federal republic is the basic law for the Federal Republic of Germany. Article 20 Basic Law fixes obligingly that the Federal Republic of Germany must be federally organised. Two levels exist in the political system: the national level which represents the whole state of Germany outwardly and the state level, which consists of 16 individual federal states. Every 4 years the people elect representatives to the Bundestag as a parliament, which jointly pass new laws with the Bundesrat, the federal council, which consists of members of the federal states.
Head of state is the Federal President (since 2012 Joachim Gauck) with above all representative duties. Head of government is the German Federal Chancellor, since the 22nd of November, 2005 this is the federal chairperson of the CDU party Angela Merkel. Currently Mrs. Merkel is the Federal Chancellor in a coalition of the largest people's parties, the CDU and the SPD since the election in 2013.

Let‘s look at the economy. In the world GDP ranking list compiled by the United Nations and the World Bank, Germany is in 4th place with 3,730billion USD, lying in front of France and behind Japan.

The per Capita GDP of the country was 45,888 USD in 2013, according to the IMF, and 43,884 USD, according to the World Bank. Here Germany is on place 18 of the IMF statistics, behind Sweden and in front of Taiwan. Within the Eurozone, Germany is in 5th place.

Since the economic crisis in 2009 which hit Germany especially hard and introduced a recession of 5%, Germany has been able to register continuous growth. In 2010 there was a clear recovery with a growth of 3.6%. In 2011 this figure still stood at 3%. Following these two strong years, a small stagnation occurred in 2012 with 0.7%, followed in 2013 with 0.4%. In 2014 a growth of 1.6% indicated optimism once more.

It must be considered too that the Eurozone and therefore Germany, as the economically strongest European country since 2009, has been involved in the so-called Eurocrisis which unites aspects of a national debt crisis, a bank crisis and a financial crisis. The crisis was dammed by support packages and safety nets, savings and assistance programmes which, however, led to other problems, for example, rising unemployment in some Eurocountries.

With regard to forecasts for economic growth in 2015 and 2016, Germany has experienced both ups and downs over the last few months.

In May, 2014, the OECD predicted a growth of 1.9% for this year, and 2.3% for next year. Then in November, the OECD declared Europe the problem child in a worldwide comparison on the basis of its combination of weak growth, low price increases and high unemployment. With these new growth figures, they also forecast that Germany would grow by 1.5% in 2015 and only 1.1% in 2016. The speed at which forecasts are superceded becomes clear in two factors which strongly influence the economy of a country: On the one hand, the oil price fell in December to less than 50 USD per barrel, whilst on the other hand, the Euro has fallen since December from 1.25 USD to 1.05 USD. The low oil price increases the buying power in the country, especially for consumer goods too, and, of course, a low Euro is good for exports. At the moment, leading institutes forecast economic growth for 2015 and 2016 from the May 2014 figures once again.

The German economy is highly export-oriented. Exports in 2013 put Germany in 3rd place worldwide behind the USA and China, amounting to 1,094 billion euros, a proportion of 7.7% of world trade. Imports amounted to 896 billion Euros, resulting in a substantial foreign trade surplus of 198 billion Euros. The large part of German foreign trade occurs with other industrial countries. The most important trading partners for Germany with regard to exports are France (100 billion Euros), the USA (88), UK (76), Holland (71) and China (67). With regard to imports, these are the Netherlands (89 billion Euros), China (73), France (64), the USA (49) and Italy (48).

The most competitive economic branches of the German industry worldwide are the automobile, utility vehicle, electro-technical, mechanical engineering industry and chemical industries. In the service area, the insurance industry (in particular reinsurance) is important internationally. The German enterprises with the largest turnover in 2013 were Volkswagen (automobiles), E.ON (energy), Daimler (vehicles, among other things), BMW (automobiles) and Siemens (manufactured products & plants).

Let‘s look at the textile industry. When one thinks of Germany, one thinks of cars and machines, and less of textiles, because as an economic factor within the national economy, the middle-sized structured German textile industry and clothing companies are of relatively low significance. Nevertheless, Germany is a leading producer of textiles and clothing in a worldwide comparison. According to WTO statistics, in 2012, Germany exported textiles to the value of 14.5 billion USD and clothing to the value of 17.5 billion USD. In 2013, sales increased to 14.9 billion USD for textiles and 18.4 billion USD for clothing. Germany exports about 5% of all textiles in the world market, and at least 4% of clothing. With these figures we must correct the last Country Focus Italy in this regard, because Germany lies with textiles in 3rd place in front of Italy (13.5 billion USD), and with the clothing in 3rd place too, in front of India (16.8 billion USD). This value of the German textile and clothing industry is unexpected, especially when one looks at its historical development over the last 50 years.

The German textile and clothing industry has been, since 1970, in a constant state of structural flux, resulting in the relative deterioration of its position in comparison to other sectors in the country. The number of enterprises and employees have been falling for many years. The number of 7,704 companies in 1970 decreased to scarcely over 1,000 in 2013, a decline of about 87%.

The number of employees decreased in the same period from 869.911 by about 89% to around 97,000, so the German textile and clothing industry has lost about four fifths of its companies and employees since 1970. This development seems to have climaxed in the crisis year of 2009, because since then, its development remains stable, or is improving.

The Textil & Mode association, which is the umbrella group of the entire German textile and fashion industry, made up of countless state and trade associations, announced in March 2015 that the export volume of the German textile and clothing industry had risen to 25 billion Euros in 2014.

The branch also announced a light overall increase in turnover for the whole of 2014 of +2.1%, excelling the original forecast of +1.8%. In addition, the textile sector increased by about +2.0%, and the clothing sector by about +2.2%.

Worldwide name fashion brands from Germany are above all from the sports article area, with Adidas and Puma.

Amongst the German clothing and fashion enterprises are, for example, Bogner, Chiemsee, Falke, Gerry Weber, Hugo Boss, Joop, Kunert, Marc O'Polo, Mustang, Schiesser, Seidensticker, sOliver, Tom Taylor, Trigema and Triumph. Trigema is an enterprise which produces exclusively in Germany, and owner Wolfgang Grupp is actively promoting Germany as a production location.

Let's look once again at the most important customer locations for German textile and clothing exports. In 2012, goods to the value of about 17 billion Euros (around 70% of all exports), went to the EU27 nations. Here the biggest buyers were Austria with 16%, as well as France and the Netherlands with 12% each.

As far as other countries are concerned, 8% of exports to the value of 1.8 billion Euros went to Switzerland, and 1.4 billion Euros worth to the BRIC states. Of this, nearly 1 billion Euros worth went to Russia, a growth of 14% compared with the year before.

Today, almost every second Euro earned from textiles in Germany is earned from technical textiles, says Michaele Uppenkamp of the IVGT confederation of industries, and Germany Trade and Invest confirms this in a report from 2013. Ingeborg Neumann, president of the association of the German textile and fashion industry, said that Germany is the export world champion for technical textiles in a speech on Foreign Trade Day on the 3rd of March in Berlin.

In the Textil & Mode press release for the event she wrote: „The export-oriented German textile and fashion industry has developed into one of the biggest European brand suppliers and high-quality suppliers of clothing and home and house textiles. In the field of technical textiles it is world market leader and an important supplier for numerous other industrial branches.

Whether traffic and logistics, aviation and astronautics, medicine technology, civil engineering, energy technology or environmental technology: Without modern textile components, numerous products would not be conceivable today. As examples, Ingeborg Neumann noted, among other things, "... textile stents for heart operations, carbon fibres for the automotive and aerospace industries, and extremely light and resistant textile concrete for a sustainable infrastructure."

Nonwovens grew even more strongly than the technical textiles sector across the world market over the last few years and here, too, German manufacturers like Freudenberg and Sandler did very well. The market is expected to grow over the next few years, from 33 billion USD in 2013 to about 42 billion USD in 2017.

The basis for carrying out structural changes and generating success with highly complex and innovative technical textiles, seems to be the fact, that although a lot of production in Germany has been relocated to other countries with lower labour costs and lower environmental awareness, research and development has remained in Germany.

There are 16 textile research facilities in Germany. Amongst them are famous institutes, such as iTV and iTCF in Denkendorf, ITM in Dresden, ITA in Aachen, Hohenstein, the Faserinstitut Bremen and titv Thüringen Vogtland. To link these facilities together and better connect with the economy at large, the 16 research facilities, together with 4 other associations, have united to form the Forschungskuratorium Textil textile research committee. Research subjects which are linked within the scope of common industrial research – in accordance with a proven precompetitive aid programme stipulated by the Federal Ministry for Economy and Energy – evolves into practically oriented new fibre-based materials, and processing and service opportunities can arise from this common forum. In this manner, the textile economy has renewed itself for decades. In addition, public appropriations provide for the permanent strategic development of the branch, and with great success. The Textil und Mode association report that 27% of annual turnover comes from new products.

It should not be forgotten that Germany is an important market for the sale of textiles and clothing as an industrial country rich in population. According to the WTO, in 2013, textiles to the value of 13,693 million USD (+3.4%) were imported, an increase on the 13,242 million USD registered in 2012, and clothing to the value of 35,482 (+4,9%) an increase on the 33,812 million USD registered in 2012. These figures mean that, behind the USA, Germany is in 2nd place worldwide (in 2013: textiles 27,056 million USD, clothing 91,028 million USD) as the second largest importer in the world.

Most clothing was imported from China, Bangladesh, Turkey, India and Vietnam. Laos and Myanmar belong to the smaller upcoming suppliers.

Germany exerts itself increasingly to produce textiles and clothing more sustainably. The German Development Minister Müller established a Textiles Partnership in October 2014. An action plan was developed together with 70 representatives from the industry, from associations and from environmental organisations, which describes the goals which the Partnership shall work towards together. The aim of the Partnership, launched one-and-a-half years after Rana Plaza, is to achieve concrete improvements in social and environmental standards in the textiles and garment industry.

As a result, more than half of the involved companies and associations, which previously worked together, did not join the Partnership, because the action plan either turned out too far-reaching for them or they considered the implementation time to be too fast. Adidas, Aldi, Lidl, Kik, H&M, Puma, C&A and the Otto Group backed out shortly before the start, and the major trade associations did not enter either. Representatives of the fashion industry and retail described it as “not ready for decision”, “unrealistic” and “not feasible” in many details. For example, the German “Gesamtverband textil+mode” Confederation also announced on its website: “German and European companies are leaders in ecological production. Even the worldwide enforcement of the European standards would be a major challenge for clothing manufacturers in other continents.

Demands in the action plan, which go far above this level, are unachievable in a reasonable period for many companies worldwide at the current state of science." This basically suggests that many companies may want to do this, and even define high and timely goals, but are not confident that they can make contractual concessions to this end. Around 30 companies and organisations were among the first signatories of the Textiles Partnership in the end. There are currently 49.

Of eminent importance for the worldwide textile industry are the German textile machine builders, because many of these companies are world market leaders in their segments and deliver machines of the highest quality and precision. The VDMA trade association has about 120 textile machine builders from every professional branch in their member enterprise, and they represent one of the most powerful branches in German mechanical engineering. The largely small and medium-sized companies represent about 90% of the entire volume of the branch, and in 2014, textile machines produced accessories to the value of 3.4 billion €.

Amongst the best known German textile mechanical engineering companies worldwide are spinning companies Saurer Schlafhorst, Oerlikon Neumag und Barmag and Trützschler, in the weaving department it's names like Lindauer Dornier and Schönherr. When it comes to warp-knitting machines it's Karl Mayer, with knitting machines it's Stoll and Mayer & Cie.

Suppliers of these branches producing high-quality needles and heddles Groz-Beckert, when it comes to textile finishing and dyeing it's Brückner, Interspare (Krantz Artos), Monforts, Thies and Xetma, with nonwoven materials it's Autefa Solutions, the Dilo group and Trützschler Nonwovens, and with controls it's Setex as well as some others, such as Mahlo and Erhard & Leimer.

The most important textile fairs in Germany are the Domotex carpet fair in Hannover, as well as the Heimtextil event in Frankfurt and the double fair of Techtextil and Texprocess in Frankfurt. Domotex and Heimtextil take place annually at the beginning of the year. Techtextil and Texprocess take place every two years, usually in May.

The next double fair is from the 4th to the 7th of May 2015, and it it is sure to indicate the direction of where the German textile industry will move over the next few years. The Techtextil is known as an innovation fair and as an international leading fair for technical textiles. The number of exhibitors clearly increased at the last event and many market leaders have announced innovations. To mark this event, and with a positive view for Germany, we would like to finish this report with four words which Ingeborg Neumann stressed on the Foreign Trade Day on the 3rd of March in Berlin. She said: „The future is textiles!"

3rd SMART TEXTILES User Forum

Making ideas and visions take flight

High-tech textiles represent a growing global market. At the SMART TEXTILES User Forum held on 11 and 12 March 2015 in Stuttgart and Esslingen, representatives from industry and research were brought up to date with the latest products, trends and market opportunities. A visit to Festo AG & Co. KG transported delegates into the fascinating world of bionics.

As always, this year's User Forum was a platform for state-of-the-art developments which would have been inconceivable a few years ago. Thanks to a great deal of imagination and technical know-how, it has been possible to transform ideas and visions into products. Festo AG & Co. KG – probably more than any other company – provides compelling evidence of how visions can be turned into reality. It therefore made sense to kick off the 3rd User Forum with a visit to the company's headquarters in Esslingen-Berkheim. An exhibition about learning from nature plus various flying displays set the imagination of the delegates soaring.

On the second day of the event, speakers presented a wide range of smart textiles for use in the fields of health, mobility and safety. Smart textiles are of particular benefit to an ageing society. They allow us to lead safe, independent lives well into old age, to stay mobile and in contact with other people, and to integrate older employees into the ever-changing world of employment. The spectrum of possibilities presented by the speakers was staggering: There are textile technologies enabling human beings to interact with machines, for example, or slimline wristband sensors which continually measure blood pressure, and textile electrodes capable of alleviating chronic pain. Sensoric textiles can monitor the vital parameters of infants or persons with special needs and automatically report emergencies.

Other high-tech garments send out warnings if firemen overexert themselves while performing their duties or lorry drivers are at risk of falling asleep at the wheel, thus improving personal safety. The complex electronic components incorporated in the fibres were also explained at the forum.

The event provided plenty of scope for discussing product ideas and how to go about establishing them successfully on the market. The accompanying specialist exhibition presented the latest developments in a clearly comprehensible, hands-on way.

The User Forum was initiated in 2012 by the umbrella organisation of the German textile research industry (Forschungskuratorium Textil e.V.) in Berlin, the Institute of Textile Technology and Process Engineering (Institut für Textil- und Verfahrenstechnik) in Denkendorf, and the Textile Research Institute Thuringia Vogtland (Textilforschungsinstitut Thüringen Vogtland e.V.) in Greiz, with the aim of promoting the exchange of ideas between industry and scientific institutions.

This year, 130 delegates took advantage of the opportunity to gather information and make contacts.

Smart textiles help in emergencies

ITV Denkendorf is conducting research on assistance systems for the elderly

Growing numbers of people in Germany are elderly or in need of special care. Despite health problems, many of them are anxious to remain in their own familiar surroundings and lead as independent a life as possible.

This increases the risk of elderly people living alone getting into all manner of dangerous situations. In many cases, people who have had a fall are not able to pick themselves up without assistance or alert attention to their plight. When old age is accompanied by illnesses such as dementia, it is very difficult to summon help in an emergency.

Technologies geared towards “Ambient Assisted Living” (age-appropriate assistance systems for healthy independent living – AAL) offer major benefits. They provide added safety in familiar surroundings, thus reducing the fear of falls or other accidents and situations that pose a challenge to the elderly.

Within the framework of a project entitled “Integration of AAL Technology for the Detection of Emergencies in the Domestic Environment”, the research institutes together with ITV Denkendorf, the Fraunhofer Institute for Manufacturing Engineering and Automation (Fraunhofer IPA) and the FZI Research Centre for Information Technology (FZI Forschungszentrum Informatik) are examining how intelligent technology can reliably identify medical emergencies and automatically set intervention measures in motion.

This involves evaluating not only direct signs of falls or changes in vital data, but also indirect evidence that something is amiss, for example if a person remains motionless for a prolonged period of time or behaves differently than usual.

As an emergency call is triggered automatically, this system is also suitable for people suffering from dementia. Project partner ITV Denkendorf is looking at how the concept can best be implemented. In cooperation with senior citizens, church welfare organisations and the construction industry, ITV Denkendorf has set out the practical requirements which need to be fulfilled by technical assistance systems, and specified design criteria for intelligent clothing, as well as putting the necessary infrastructure in place.

With the help of a clothing manufacturer, ITV has designed and manufactured intelligent vests with integrated sensors, which are being tested by senior citizens living in various sheltered housing establishments run by the church welfare organisation BruderhausDiakonie.

The feedback from the test subjects is positive: the vests can be worn unobtrusively and help to make the wearers feel safer in their everyday lives. The system is currently being tested without an online connection. Linking the technology up to the existing emergency communication infrastructure will be the next stage in the trial phase.

In an ageing society, systems such as Ambient Assisted Living are destined to become increasingly important, which is why the project is being backed by the Ministry of Social Affairs, the Ministry of Science and the Ministry of Finance and Economic Affairs of the German state of Baden-Württemberg.

The new Autoconer 6
The best original ever

Intelligent material-flow management on Autoconer 6 – fast process-reliable and individually configurable

The Autoconer was the first automatic winding machine in history and each of its new machine generations caused quite a sensation in the textile industry. Now it is happening again: Equipped with improved process intelligence, the new Autoconer 6 boasts powerful innovations, a noticeable increase in productivity and best energy efficiency. Thus Schlafhorst significantly raises the bar for high-yield efficiency in the winding process, especially since the basic model is already equipped with the key innovations. For Schlafhorst, the Autoconer 6 is quite simply the best original ever.

Intelligently controlled self-optimisation is the major innovation topic of the sixth generation of the unsurpassed Autoconer. Automated process sequences are designed and structured to function in a selfoptimising way. This ensures maximum productivity, resource efficiency, quality and process reliability in winding.

More intelligence for more productivity

The intelligent operation of the new Autoconer guarantees ultimate productivity at a consistent level. With a plus of 6%, it sends a clear signal during start-up. Thus, the Autoconer 6 always starts with optimised acceleration without slippage, reaching its maximum winding speed faster than ever before. In addition, unproductive piecing cycle times are reduced to a minimum. The anti-patterning function is optimised for productivity.

The sophisticated material flow system ensures a 100% capacity utilisation of the winding units on the automated machines even in case of material flow variations.

The RM type has been completely redesigned. The new open design features a unique innovative bobbin change system that stores an additional bobbin in the new loading shaft and is thus ready for the change.

9+1 bobbins per winding unit is the success formula for a reliable, fast and therefore more productive bobbin change on RM machines. Now, with up to 80 winding units, the new Autoconer 6 type RM increases the productivity per square metre by 9% in comparison to a machine with only 60 winding units.

Resource-saving technology

New highly efficient suction system motors, new intelligent control systems and aerodynamically improved components such as the new suction tube, reduce energy consumption and minimise yarn waste. With 6% less resource consumption, the Autoconer 6 is off to a good start.

The new suction tube provides a significantly higher resource efficiency: fast, reliable upper yarn pick-up, reduced cycle frequency and duration, automatic, self-adjusting alignment of suction tube position. An intensification of upper yarn search is achieved together with the FlexiCycle. In the process, miscellaneous parameters such as the suction tube distance, intensity of the negative pressure as well as search time can be flexibly set. Upper yarn errors and red lights are a thing of the past.

The sensor-monitored negative pressure control of the Autoconer 6 creates only as much negative pressure as needed. The suction system automatically switches back and forth between requirement-oriented, increased working pressure for a reliable yarn end pick-up and the energy saving resting vacuum. All parameters are individually adjustable. Furthermore, compressed air can be reduced even more by setting the blowing impulses for cleaning of the winding units via the Multi-Jet on the Informator according to the actual level of soiling.

Autoconer 6, for maximum productivity, resource efficiency, quality and process reliability

Increased productivity thanks to intelligently controlled process sequences

The new waxing unit has an improved resource utilisation, which cuts wax wastage by a third.

Automation and intelligent material flow

Due to its automatic, self-optimising material flow, the Autoconer 6 is virtually independent of operation. There is no need for manual settings since the machine automatically controls everything. The intelligent system distributes the Caddies to the winding units completely autonomously, allowing the reserve bobbins to vary between 1 and 3, depending on the situation. If a winding unit faces a temporary supply shortage, a bobbin is provided by the adjacent winding unit. When required, the Autoconer 6 switches to high-speed feed by means of sensor control. The unique advantages of the Autoconer material flow technology – Vario Reserve, Intelligent Bobbin Sharing and High-Speed Feeding – are even more in tune in the Autoconer 6. This allows the Autoconer 6 to completely compensate variations in material flow. The new feed change strategy accelerates the feed change by 25%, since each winding unit is first supplied with the initial bobbin required for production start before the reserve bobbins are replenished.

As before, Schlafhorst offers graduated automation solutions that are individually specified for each customer in compliance with his internal processes by choosing the matching machine type as well as the desired bobbin and tube handling.

With its multi-tube handling and smart empty tube strategy, the X-Change package doffer features intelligent functions which are unique in the market. When the doffer uses a tube format the first time, it automatically learns how to best pick up the tubes and stores the knowledge acquired in the Informator. This minimises set-up times and improves process reliability. Thanks to intelligent travel optimisation, smart prerequest mode, extremely short positioning time and sensational 10 second changing time, the package doffer XChange stands out with excellent changing capacity.

Benchmark for package and splice quality

The new TensionControl and the proven Autotense FX make the Autoconer 6 the only machine in the market that offers two systems for electronic yarn tension control. TensionControl, which is part of the basic equipment, determines the typical yarn tension progression of bobbins in the current lot on a reference winding unit and uses the measurement data to calculate a yarn tensioner curve for the lot data in the Informator. The corresponding control commands are then transmitted to all winding units. Compared to machines without yarn tension control, this basic system achieves already increasingly homogeneous package densities and a higher efficiency, thus creating a new performance level which is sure to attract interest from commodity applications.

Energetically optimised aggregates and resource-conserving piecing cycles lower energy consumption significantly

Benchmark for package and splice quality

For high-end requirements, the reliable winding unit-specific yarn tension control Autotense FX remains available as an option, same as the unique technology modules of the FX series Propack FX, Variopack FX, Ecopack FX, PreciFX and Speedster FX. In terms of textile technology, the Autoconer 6 leaves nothing to be desired.

The universal splicer module system of the Autoconer 6 ensures perfectly spliced joints for every application.

It takes just a few simple steps and some additional components to convert the Flexsplicer, which can be set for standard and compact yarns, into an Elastosplicer, Thermosplicer or Injection splicer. Due to central splicing parameter settings, the desired results are always reproducible at the push of a button and the yarn is perfectly spliced in every shift. High efficiencies can be achieved in downstream processes. The Autoconer 6 is and remains the benchmark for package and splicing quality.

Simple operation, increased process reliability

All the innovations, which in many cases are hidden inside the Autoconer 6, such as the new electronics concept, the smart use of state-of-the-art sensors, the online monitoring of process sequences and the autooptimisation of settings ensure that process reliability is increased and the staff is freed up.

Thus, the Autoconer 6 supports the spinning mills in their individual optimisation of productivity and quality for maximum economic efficiency and optimal return on investment.

Numerous improvements make operation, maintenance and cleaning of the Autoconer 6 easier for the staff. For example, the aggregates in the new component carrier are freely accessible, the round magazine of Autoconer 6 type RM is ergonomically designed, the suction tube adjusts its position independently and automatically: Faulty operation is virtually impossible and all movements are performed in a fast and reliable manner.

The Autoconer 6 improves the competitive edge of the spinning mills

The innovations of the Autoconer 6 are trend setters in the industry and create entirely new opportunities in process optimisation. Schlafhorst integrates the best textile technological know-how in self-optimising, intelligently controlled technical process sequences and, once again, proves to be the market and technology leader. This is an invaluable advantage for Schlafhorst customers in the end stage of the spinning process that is so crucial for success. They gain a greater competitive edge and economic efficiency. The Autoconer 6 – the best original ever – is thus a new milestone in package winding.

Topics of the next issue 3 /2015

TOP STORY:

Digital Printing

Digital Printing Machines
Inks for Digital Printing
Interview
Country focus: Indonesia

Nonwovens & Technical Textiles:

"Oekotech, Packtech, Protech, Sporttech"

Textile Machinery:

"Knitting sector"

Techtextil & Texprocess 2015 Review
FESPA Review
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