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Textile industry review 2014 and outlook 2015

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From the editor

Dear Reader,

an exciting, intense and interesting textile year is coming to a close and, as usual, at the end of the year, we would like to look back, review what's been happening and venture an outlook with respect to our major topic. Probably most people will say that the year 2014 was okay. Not good, or even very good, but not too bad either. The political framework was just too instable to produce a good economic year. The Euro crisis seems to have abated, but massive new challenges are on the way, which hopefully can be mastered quickly.

Perhaps we should all just look forward instead. The OECD's prognosis seems to be quite promising and from a textile point of view 2015 can only become a special year. Manufacturers of technical textiles are sure to be looking forward to the Techtextil in Frankfurt. Garment manufacturers can expect continuing market growth due to population growth and increasing buying power in BRIC-countries and the 'Next 11', as well as being able to see the newest cost-saving machines and processes at the Texprocess Fair Trade. And at the end of the year we anticipate the absolute highlight, to which textile companies and textile machine producers are presumably equally looking forward to - the ITMA in Milan.

One product missing in our sector, seems to me to be a sort of textile iPhone. Now that's a product everyone wants, even lusts after. "Seven-league boots" maybe, shoes that multiply our length of stride. Or solar-collector clothes that soak up and store solar energy providing either warmth or electricity back. Or a suit that reduces gravity and allows us to float. Okay, these are crazy ideas, thought up after reading Jules Verne perhaps, and are all still rather unrealistic. But how good would it be to have such revolutions. A product with a huge pull-effect. New fibres. New production processes and new machines. Then we'd hear some cheering along the textile value-added chain. And in my opinion we, as an industrial sector, should be working toward just that. We must be creative and experiment, believe and try. A new colour for autumn is nice. Narrower lapels, and slightly slimmer at the waist. Yes. Why not? But it's not the textile iPhone. For revolutionary mass products we need more innovative power.

Finally, some information concerning ourselves and a few announcements. Since the last issue of our magazine we now appear in Chinese and Spanish in addition to English. Not a small step, but it was right to take it as we have now won thousands of new readers with both new versions. We would like to thank all TexData Magazine readers for recommending us. Please continue doing so. We are very happy but are humble enough not to rest on our laurels Therefore we have a great many plans for 2015. We hope you will continue to support us. We shall be happy to surprise you with our new services that we shall be introducing gradually until up to the ITMA. The TexData team wishes you a peaceful time as the year draws to an end, happy holidays, lots of happiness and good health and may all your dreams come true.

Best regards
Oliver Schmidt

Textile industry review 2014 and outlook 2015

by Oliver Schmidt

With the final issue of 2014 we would like to present a short review of the textile year, reporting on significant changes, comment on developments, and also preview 2015 – a year that, marked with two fairs, could have global significance. Let‘s look first at the most important indicator: economic growth. 2014 initially had a good chance to be remembered as a really good year. The long shadow of the financial crisis had largely dissipated, indicating substantial economic development in emerging markets and industrial nations alike. The World Bank‘s mid-January appraisal marked a real turning point as they forecast worldwide economic GDP growth of 3.2% compared with 2.4% for the preceding year, an increase of precisely one-third.

Other reasons cited for this optimism were that savings programmes and political insecurity conditions in richer nations were no longer as serious, pointing the way forward for a sustainable recovery. It‘s always hard to gaze into the crystal ball, and this should not be seen as pessimistic, rather cautiously optimistic, but maybe we have to also get used to the idea that the next crisis is a certainty, and that it will also have a negative influence on business development.

The first disappointment arrived in June following a long, hard winter in the USA, the worsening of the Ukraine crisis, and the resulting turbulence in the financial markets led to a clear weakening of GDP of growth to just 2.8%. This 0.6% drop, about 75 billion USD from a total of 450 trillion USD, is equivalent to more than the entire GDP of a country such as Austria.

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BRIC-countries

Beyond the forecast, in reality, still less growth could become a prospect, because since the end of the summer, headlines expecting a "stormy autumn", and "the economic situation is running out of steam", have been emerging. Whatever the case, all countries seem to be weak, even China, which has for years been the engine of the world economic situation. They are currently having trouble maintaining their target of 7.5% growth. In the third quarter their growth figure of 7.3% was as low as any since the beginning of 2009. However, criticism of China is not a wise move because the country is revamping its economy and they rightly place special emphasis on their own interests. The other BRIC states are even more problematic. Russia is politically offside, subject to painful sanctions, as well as dealing with a flight of capital as well as finding access to the capital markets difficult. A falling oil price also has an effect. At the beginning of 2014, market observers forecasted an average GDP growth of 2.5% for 2014. Now the forecast is zero. In addition, it has been stated more and more often that Russia has considerable problems with the transformation of its economy, basing this too strongly on raw material exports. In almost all areas, the added value on these raw materials is absent. Brazil had the world's complete attention with the football World Cup, but its growth resembles rather their game against Germany. On the 22nd of September, their government lowered the forecast from 1.8% to 0.8%. Both figures are rather alarming for an emerging nation.

This just leaves India, the country that the experts just can't agree on. With the choice of Narendra Modi, India has a Prime Minister who has promised to deal with the structural problems which hinder India's development. In addition, the dismantling of restrictions and protective measures which deter foreign direct investments in some sectors is important. In 2014, 2nd quarter economic growth of 5.7% and 3rd quarter growth of 5.3% has excelled the 5% mark for the first time in a long time. This is good, although some experts see the decline between the quarters as weak. It seems to be India's problem that the country is constantly underperforming.

On the other hand, many analysts remain positive. Pranjul Bhandari, chief India economist, and Prithviraj Srinivas, economist, at HSBC Securities and Capital Markets India, wrote in a research note: "We expect GDP growth to rise from 5.8% in 2014/15 to 6.6% in 2015/16.

Economist and Ex-Goldman-Sachs banker Jim O'Neill, the man who first introduced the concept of the BRIC states, sees that India's time has come. During an interview with the German magazine "Wirtschaftswoche" he said: "India has never had better chances than today! The country has fantastic perspectives. I forecast that in the second half of this decade, India will grow more strongly than China."

EU and USA

And the industrial states? Though the Eurocountries have left the recession behind them, the ambitious 1.2% growth aim had to be downwardly corrected, and currently stands at 0.8%. Spain and the smaller countries are looking up with 1.4% of growth, and only France provides a worrying scenario with only 0.3% of growth as it continues in its quest to reform, as does Italy, whose 0.5% leaves it in its third year of recession.

The EU half-yearly forecast commission points to the stagnation of the German economy. The economic situation in 2014 indicates a 1.3% (present forecast: 1.8%) increase. The strongest national economy in the world, the USA, is able to shine a little in 2014.

Forecasts at the beginning of the year were around 2.8%, although they were corrected to 2-2.1%, nearing last year's rate of 1.9%. This means that the US economy has now grown at a rate of 3% or less for nearly 10 years. The weak world economic situation and the strong revaluation of the dollar have given US exports a hard time, and this does not look set to ease over the coming months, say economists. Japan also looks bad as the country fights against recession.

The next 11

There's better news from the "Next Eleven" (Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea and Vietnam) group of countries. The term was also coined by Jim O'Neill and is of special interest to us because nearly all of these countries have a significant textile production. In this group it is above all the MINT states (Mexico, Indonesia, Nigeria and Turkey) that present some very good results. Mexico displays a probable growth of 2.3%.

Indonesia, with its 6% growth over the last few years is quite an important future market, and the IMF estimates that the country will experience an annual 5.2% increase, according to its latest World Economic Outlook report, updated in October. However, this means that the plans of President Joko Widodo, otherwise known as Jokowi, have experienced a small setback because his aim was 7% of annual growth. Indonesia is still the growth engine of South-East Asia.

The World Bank forecast 4.5% for the Turkish economy at the beginning of the year, but now the EU commission has revised this figure to 2.8%, with 9% inflation. In view of the poor growth rate in comparison to past years, Recep Tayyips Erdogan's economic future vision efforts to achieve a top ten placing amongst world economies seems rather illusory. Erdogan is partly responsible for this lack of achievement himself, as tear gas and affairs do not provide for a good economic climate.

However, the meeting between Erdogan and Putin could give new impetus to both countries, because, on the one hand, it is intended that the goods turnover be trebled between the countries by 2020 to 100 billion Euros, and on the other hand, it is intended that Russian gas reaches Europe via Turkey.

Nigeria is known as an African mega market. Amongst other things, this is due to its 180 million inhabitants and its high birth rate which should catapult the population to about 450 million inhabitants by 2050. Rich in oil and gas and with an economic growth rate of 6% over the last 10 years, the country seems to have avoided crisis and is one of the few countries that has made clear progress, compared to the previous year. Current estimates see around 6.2% growth. O'Neill is raving about developments in Mexico. He says: "The Mexican administration is the government that is the most enthusiastic about reform in the G20. This is really very impressive." Nevertheless, his new darling is Nigeria. Here he says: "The middle class grows, even if their proportion is still relatively low amongst the population. Even so, Nigeria has a great perspective and is possibly much more important for the world economic situation than South Africa."

Amongst the countries of significance for the textile industry we would like to mention Vietnam (6.2%), Cambodia (7.2%), the Philippines (5.3%), Pakistan (3.2%), Myanmar (6.5%) and Ethiopia (10.4%).

That was a lot of figures, but this quick look at the economic growth of some countries, amongst them essential textile producers, gives us a good overall view before we focus more specifically on the situation of the textile economy worldwide.

Fibers

First of all we want to focus on the fibre because that determines the price of the end product, as well as does the energy and labour costs. Let's begin with cotton, the raw material and fibre which have been problematic over the last few years. The industry was exposed to the highest cotton rate at the beginning of 2011 with 2.20 USD. Cotton currently has its lowest rate for 5 years: only 0.6 USD per lb. As a reaction to the drop in the price of cotton, it is to be expected that the producers reduce their acreage next year in the main cultivation regions. The largest national cotton producers are China and India, and the USA is the biggest exporter. According to forecasts, US farmers will reduce their acreage by about 14% in 2015, a decline of about 500.000 hectares.

A low cotton price is good for the profit margins, unless you're a farmer, but those mills who stocked up strategically after the experiences of 2011 are now at a short-term disadvantage. In any case, Rieter CEO Norbert Klapper regards the fall in the cotton price as a passing problem.

On 2nd Dec, in an interview with awp, published on the Swiss economics site cash.ch., he said that it will only persist for a relatively short time as long as spinning mills are still sitting on old expensive cotton.

ICAC published the last forecast on the 17th of November, following the annual conference in Greece in October. World cotton production is forecast at 26.3 million tons for 2014/15, an output similar to that of last year. While harvesting in India will likely continue into early next year, production is expected to remain stable at 6.8 million tons, as the less favorable monsoon weather lowered the average yield to around 553 kg/ha and offset a 4% gain in area. China's production is forecast down 7% to 6.5 million tons due to a smaller area sown with cotton. If this forecast is correct, India will replace China as the biggest cotton producer in the world for the first time ever.

Rains at planting alleviated the drought situation in the United States, allowing production to recover to 3.6 million tons. Despite the flooding in Pakistan last month, cotton production is projected up 1% to 2.1 million tons with an average yield of 750 kg/ha. Despite low prices, many mills are waiting to see if prices drop further before making large purchases, but world cotton consumption is likely to pick up next year reaching 24.4 million tons by the end of 2014/15. China's total consumption is expected to be just under eight million tons, and India to be around 5.3 million tons. Consumption in Pakistan may grow 2% to 2.3 million tons, but will depend on sufficient and stable electricity supply in the regions with the highest concentration of spinning mills.

Though still recovering from the aftermath of the Rana Plaza incident, Bangladesh consumption is projected at 954,000 tons while Vietnam is expected to consume nearly 700,000 tons of cotton, up 9% from 2013/14. World trade is projected to fall 11% and reach 7.9 million tons. To promote consumption of domestically grown cotton, the Chinese government is limiting the volume of cotton imports, which forecast down 36% to 2 million tons in 2014/15. However, imports elsewhere are expected to grow 8% to 5.9 million tons due to gains in South and Southeast Asia where many consuming countries produce small quantities of cotton.

A possible advantage of the favourable cotton price would be a light displacement of polyester stocks, but then again, with the drop in oil prices, polyester production will also become cheaper. According to Bremen cotton stock exchange estimates, polyester is the fibre which should grow most strongly with regard to textile production over the coming years; up to 56 million tonnes in 2020. Initial clues are however present that indicate that this growth may not actually be quite so rapid. Peter Driscoll, Managing Director of PCI Fibres, a specialist consultancy to the fibres and related industries, announced in a press release at the beginning of November that although polyester fibres capacity is still increasing in China, driven by projects already planned, financed and committed, there are now indications of some shake-out as a result of demand growth not being as strong as expected by the polyester industry in China and elsewhere in Asia.

Oerlikon reports in their Q3 quarter report of a normalisation of the markets, in particular in China, following years of big growth.

The manufacturers of cellulose fibres seem to be faring quite badly. The situation is intensifying at fibre manufacturer Lenzing. On the 28th of November the enterprise wrote in a press release: “The organizational optimization measures launched one year ago at all sites and in all business areas are having a positive impact. The results achieved up until now are encouraging but by far insufficient to offset the decline in viscose fiber selling prices on the international marketplace. Lenzing continues to anticipate good volume demand for all man-made cellulose fibers. However, fiber selling prices on the global market are not expected to recover in upcoming quarters. This development is also attributable to the substantial decline in polyester fiber prices as a result of the massive oil price decrease, and the expected longer-lasting period of low or at least volatile cotton prices as a consequence of the surplus supply of Chinese cotton.”

2014 could become an impetus year for medium- term cheap fibres, something which should lead to higher margins along the textile value added chain - notwithstanding the raw material producers - raising the question as to who will take up the lion’s share of this increase. The buyers from the clothing and automobile industries will allow the favourable raw material prices to flow into their purchasing guidelines to increase profit, or, much better, taking the chance to promote their own attempts at sustainability, making them even more plausible.

Textile industry

Let us return to the subject of textile production and look once more at some countries. Who are the winners, and for whom did it not go so well?

Textile production and exports remain, as expected, the domain of China, even if growth decreased slightly in 2014. China is simply in another league, and whether the growth of the textile industry or clothing exports are up 6%, 7% or 8%, no nation can seriously compare their growth to China’s. Please remember.

China exports clothing to the value of 160 billion USD. Accordings to the National Bureau of Statistics 39 out of 41 major industries in China maintained year-on-year growth, in which the textile industry grew 6.3%.

A lot of growth is, however, evident in India. India has learned from China that their wages will rise and the trend toward automation will not happen overnight, and they are doing their best to catch up. “India pips China […]“. This was the headline in the Business Standard in a report dated 24th of November, citing, amongst other things, that India could develop its share of the market in clothing exports to the USA, exposing Chinese and Bangladeshi weaknesses.

Author Vinay Umarji writes:„India saw a rise in apparel exports to the US by 7.5 per cent at 745 million square metres equivalent (msme) for the period January-September 2014 over the corresponding period last year, as per the latest data by the US Department of Commerce's Office of Textile and Apparel (OTEXA). As against this, China and Bangladesh posted 3.9 per cent and -4.63 per cent growth in apparel exports to the US, respectively resulting in shift in exports orders to India. As per OTEXA data, China shipped 8108 msme apparel as against 7800 msme for the said period last year, while Bangladesh saw shipments of 1260 msme as compared to last year's 1322 msme."

Globally too, India has been registering a 17.6 per cent growth in apparel exports at $ 8.3 billion (Rs 51000 crore roughly) for the period April-September of the fiscal 2014-15, the Apparel Export Promotion Council (AEPC) stated.

Saurer CEO Daniel Lippuner sees a similarly good prognosis for India. In an article in December he wrote: "We expect India to expand its strong position during the coming years. In terms of ring spinning India is expected to overtake China, thanks to the quality of the local cotton and higher efficiency of the mills."

In Russia too, change is afoot. Prime Minister Medvedev has spoken to the Russian textile industry during a meeting in Ivanovo on 31st October 2014.

He said: "The industry has plenty of room to grow, and the demand for textile will always be there. At nearly three trillion roubles, the retail market for light industry is the largest among all non-food product markets. These can be profitable businesses that are good for the country's budget. However, the niche that Russian enterprises could claim has shrunk significantly in recent years, but remains quite large nonetheless. Therefore, taking into account the current economic situation and our import substitution policy, the Government will put together measures to stimulate the industry. Some of them are already being implemented, some will be incorporated into the revised Light Industry Development Strategy to 2020.

An article dated 19th of November reported on how the Russian textile industry can use the springboard that a significant revitalization currently offers was dealt with by the portal *Russia Beyond the Headlines: :"*The Russian authorities have invited foreign clothing brands to localize their production in Russia, Deputy Industry and Trade Minister Viktor Yevtukhov has said in an interview with the Rossiyskaya Gazeta newspaper. Yevtukhov explained that state support programs currently envisage subsidies for partially recovering the costs of materials, technical upgrades and new investment projects. New factories can also enjoy long-term tax breaks until 2025. Furthermore, the ministry guarantees manufacturers who accept this invitation a share of the market from the state procurement order.

"Since in the Soviet era Russia had a well-established textile industry, our country can occupy a certain niche between the expensive European segment and the so-called cheap Asian-made consumer goods," said Yevtukhov. One of the ways of achieving this goal, he explained, is to establish foreign manufacturers' production facilities in Russia, as is the case with the automotive industry. "This is, of course, a task for the future," he said. "Having said that, our textile factories already have a good basis to build on."

An improvement in the fortunes of the African textile industry is also to be expected. Nigeria is one country already cited by Jim O'Neill. On November 9, Nairobi, Kenya played host to Origin Africa 2014, a major international textile event that was officially opened by Kenya President Uhuru Kenyatta. More than 4000 participants from 11 countries participated in this high-profile, international event, including 155 regional and international buyers, with strong representation from across the cotton, textile and apparel value chain.

Mr. Jas Bedi, the Chairman of ACTIF and the Vice President of International Textile Manufacturers Federation, said: "As Origin Africa demonstrates, the future of Africa's textile industry is bright. Origin Africa was a great opportunity for investors and buyers looking to capitalize on the emerging opportunities and to develop linkages with export-ready companies, suppliers, and government support agencies, development partners, regional and international entrepreneurs."

On the 1st of December, the website agoa.info published a report with the headline: „AFRICA is vying for a larger share of the global textile and apparel pie". AGOA, the Africa Growth and Opportunity Act was passed in 2000 with a view to implement trade benefit provisions for sub-Saharan Africa. Under the AGOA, duty-free imports of textile and apparel materials are allowed into the United States from certain African countries granted the beneficiary status.

Both buyers and exporters of textile and industry products in the United States and Africa are, meanwhile, calling for the extension of the AGOA provision which is valid until September 15, 2015. Of special interest for suppliers is the AGOA's so-called "third-country fabric provision," which enables suppliers in 27 least-developed countries (LDCs) that have signed the agreement to make use of fabric not produced within these countries, but still receive duty-free access to the U.S. market. Mauritius apparel exports to the United States increased 16 percent to $907 million under the AGOA from 2000 to 2013

Ethiopia should really be taking a lead in the area of textiles. In summer 2013, the clothing giant H&M announced that they will be producing in Ethiopia in the future. The first test batches followed in autumn. If one takes a look at the H&M supplier list today one will find three manufacturing and two processing factories. The companies ALMEDA TEXTILE from Adwa and MAA GARMENT AND TEXTILES in Mekele are named in both categories. In addition, the GG Super Garment Factory is operational in Adaba.

H&M boss Karl-Johan Persson said in April 2014 during an interview with the German magazine "Die Welt": "We test countries like Kenya and Ethiopia. These are still very small orders. We have spoken with the Swedish government, the ILO and other actors, and everybody says: You must go to Africa because it is all-important for the region." In the paper too is news that the Ethiopian government wants to revive its textile industry in Addis Ababa. "Up to 2016, it is intended to export clothes to the value of 1 billion US dollars. For this purpose foreign investors are enlisted to modernise machines and factories."

H&M confirmed their plans for Ethiopia in September 2014: H&M and Swedfund have come together in a unique cooperation in Ethiopia. The aim is to contribute to the development of a responsible Ethiopian textile industry characterized by both high social and environmental standards. "Through this unique partnership with H&M, our goal is to contribute to developing the textile industry in Ethiopia, thus creating jobs with good working conditions that lift people out of poverty, especially women," says Anna Ryott, CEO at Swedfund.

It is clear that Ethiopia can offer, above all, low wages and favourable production costs. Germany Trade & Invest writes: "There is endless manpower; the Ethiopian workers are, in the African context, disciplined and ready to perform, as well as being extremely cheap." With Texcon from Great Britain and Turkish manufacturer MNS Manufacturing, other enterprises are already on site and other brands and retailers are set to follow.

The German association VDMA offered a delegation trip for its members in November to help with the high-quality machinery from Germany in order to promote the speedy construction of an efficient and sustainable production scenario.

With this fact, development into a textile country seems sealed. The fact that Ethiopia can edge out established textile countries like Bangladesh or even China in the medium term as some economic journalists would have it, is of course nonsense if one takes into account the target number of 1 billion textile exports in relation to 2012 exports which amounted to just 65 million USD, and additionally, Bangladesh's clothing exports of 27 billion USD in 2013. H&M sees Ethiopia as a supplement and not as a displacement. "As a worldwide growing enterprise we must make sure that we have the capacity to deliver our products to all stores, even in countries where we're rapidly expanding", clarifies speaker Camilla Emilsson-Falk. "We achieve this because we increase production in our existing locations and look for new locations in which to operate."

The real winner with regard to textile export development in 2014 is Vietnam. Vietnam's garment and textile export turnover is likely to hit US$24.5 billion this year, a year-on-year rise of 19%, writes the Voice of Vietnam at the beginning of December. According to Le Tien Truong, General Director of the Vietnam National Textile and Garment Group (Vinatex), this is the largest increase in the past three years. Key export markets are the US, the EU, Japan and South Korea with 49 percent, 15 percent, 12 percent and 9 percent of the share, respectively.

So it's not surprising that large growth figures increase the demand for improved production facilities. "Vietnam represents one of the most promising markets of the future for our companies," confirms ACIMIT's President Raffaella Carabelli."The local authorities have invested in the textile and garments industry, and are very much aware of the added value that Italian technology can bring to their production." Vietnam's textile sector is already a major buyer of Italian textile machine technology among Asian markets. Over the first six months of 2014, Italy exported 14 million euros' worth of textile machinery to Vietnam (+159% over the same period for 2013), confirming the growth trend in recent few years.

Textile machine industry

Let us briefly touch upon the development of the producers of textile machines in 2014. All-in-all it doesn't look too bad with regard to mechanical engineering in Germany. The VDMA has at last announced some positive figures. In October 2014, incoming orders in the mechanical engineering industry in Germany were up seven percent on the previous year. The VDMA (German Engineering Association) announced in Frankfurt on Monday that domestic business increased by one percent and international business was up nine percent year-on-year. Based on a three-month comparison, which is less affected by short-term fluctuations, incoming orders rose by seven percent year-on-year between August and October 2014. Domestic orders rose by three per cent, while international orders increased by eight per cent.

The Italian textile machine industry too looks optimistically to the future again following improved 3rd quarter figures. However, this rise in orders is limited to foreign markets, where for the period taken into consideration an increase of 9% was reported, and the index measured a value of 99.4 points. On the other hand, the domestic market remains stagnant. Indeed, in Italy, the absolute value of the index is 38.8 points, with a 22% drop over the previous quarter. "2014 will close on a positive note solely thanks to foreign demand," adds Carabelli. The goal is already set for 2015, when ITMA, the industry's premier trade show, will be held in Milan, from November 12 to 19. ACIMIT's president concludes, "We're hoping that this major event will act as a catalyst for renewed investments in Italy as well."

How smoothly things are running in the individual markets is often reflected in the machine manufacturer's figures, because high sales and increased production of textiles make new investments easier, as everyone knows. The listed machine builders who've announce slightly reduced sales figures deal mainly with China. Though Rieter from Switzerland announced increased figures in the first half-year compared with the same period last year, declaring annual sales of 478.1 million CHF up to 522.1 million CHF, they had to take a loss in China, registering a reduction from 116 million to 81 million CHF. Incoming orders also fell in the first half-year, from 711.4 million CHF to 655.5 million CHF, a drop of over 50 million CHF.

Rieter CEO Norbert Klapper said in an awp interview that incoming orders are a little weaker in the second half-year compared to the first, but there have been no cancellations "over and above what is to be expected". The target sales value of 1300 million CHF is realistic, but only if the important markets in China and India do well. Rieter could increase their business in Turkey, India, and in the USA and the other Asian states. The enterprise did announce that it wants to develop its after-sales business but failed to produce a concept to back this claim up.

Saurer CEO Daniel Lippuner authored an article with the title „Superior cotton, mills' efficiency to propel Indian textile sector growth", reporting annual sales of around 1.2 billion CHF. If one takes the July 2013 declared sales figures for the new Saurer group of 1 million CHF as a base, Saurer would appear to have performed remarkably well.

Oerlikon too were subject to a decline in Chinese orders during the first 9 months. In the Manmade Fibers segment, the turnover of 845 million CHF decreased in the comparable period by about 3.4% to 816 million CHF. The enterprise was still able to increase the EBIT margin rate from 16.0% to 19.7%. This just goes to show how splendidly the enterprise is set up, and it shines with its ingenuity and flexibility. In Q3 2014, the Manmade Fibers Segment successfully leveraged its existing technologies and expertise in polymer processing into adjacent and growing markets and celebrated the opening of a polycondensation plant for one of its key customers.

The Segment's polycondensation plants enable customers to produce energy-efficient polycondensation granulate for packaging (PET bottles and films). The technology used in the manufacturing of bottle granulates is largely identical with that used for manmade fibers.

Textile Chemistry

The textile chemicals sector made a lot of noise in 2014. In October, Archroma, who themselves only the year before emerged from the sale of the textile section of Clariant, announced that they would take over the textile chemistry section of BASF. In the announcement it said: "The business being acquired delivers products and technologies across the entire textile chemicals spectrum, with particular strength in printing, finishing and coating chemicals segments.

The acquisition ideally complements Archroma's textile dyes and chemicals portfolio and geographical presence. In addition, the acquisition will allow Archroma to reinforce its Textile Specialties team with a global specialist team that has an especially strong presence in Asia and other high growth markets. Both BASF's and Archroma's textile businesses are headquartered in Singapore, close to the highly developing Asian textile markets and customers."

A concentration has been taking place in the textile chemistry sector over the past few years, and if one remembers correctly, BASF themselves assumed control of Ciba Spezialitätenchemie in 2008, integrating them into the group. Alexander Wessels, CEO of Archroma, pointed to a further range of skills in the announcement. “With this agreement, we are bringing together the century-old history of BASF textile chemicals products, technologies and people with Archroma’s already strong heritage from Hoechst, Sandoz and Clariant,” he notes.

Outlook

Now we come to our future prospects. We’d like to have been able to have another look at the big textile producers, above all the Chinese, as well as the leading textile brands and retailers, but we’ll have a chance to do this in our Sustainability report in issue 1 of 2015. The OECD Economic Outlook report focusing on the G20, published in November, said that growth-supporting structural measures in the large industrial and threshold countries are the key to a stronger global economic growth. In 2015, GDP growth is expected to be 3.7%, and for 2016 the economic view projects an increase of 3.9%. However, compared to the pre-crisis period, this growth is modest and is below average when compared to long-term figures. Five countries with the biggest growth forecast for 2015 and 2016 are the OECD countries of China (7.1 %/6.9%), India (6.4 %/6.6%), Indonesia (5.4 %/ 6.0%), Mexico (3.9 %/4.2%) and Korea (3.8 %/4.1%).

The EU space is expected to grow by 1.1%n in 2015, and by 1.7% in 2016. A big risk for these projections is the very different dynamism in the regions and countries investigated by the report. High downward risk is now a greater threat. In measures designed to return to world pre-crisis growth figures, 20 leading industrial and threshold countries agreed at the G20 summit on a package of measures intended to stimulate the world economy. These should lift the economic situation by around 2.1% by 2018, explained the heads of state and heads of government in the final statement of the 2-day meeting. In addition, investment incentives should be provided, as well as implementing measures designed to improve infrastructure and dismantle commercial obstacles.

The OECD forecasts an average plus of 5.6% for ten ASEAN countries from 2015-2019. Strong development in particular is expected from heavyweights Indonesia (+6.0%) and the Philippines (+6.2%). Smaller countries like Laos, Cambodia and Myanmar will achieve average growth rates of over 7%, according to the OECD. And the European textile industry? At the 3 rd EURATEX convention at 18th November with the title “Outlook 2015 fashion and textiles in Europe” Mr. Serge Piolat, as President-elect of EURATEX and in the name of Mr Paccanelli, the current President, in his opening speech underlined the importance of re-inventing manufacturing to assure the competitiveness of the European companies. He welcomed the statement of President Juncker focusing, among other political goals, on strengthening the industrial base by increased investment in infrastructure, education, research and innovation.

The speakers of the opening panel of the Convention made an overwhelming review of the perspectives of the world and the EU economic development with an aim to estimate the place of textile and apparel sector in it for the near future. Edwin De Boeck, Chief economist of KBC1 , presented a detailed outlook of the macro-economic environment in Europe and the world. He shed cautious optimism for 2015 because of the increased export possibilities and the expected lower raw material and oil prices. However, the economic stabilisation in Europe is still strongly depending on an unknown evolution of the investment trends while the consumer confidence is still low.

Energy will be available at low cost to promote this growth in the form of cheap oil and gas. The December decision by OPEC not to throttle its output in spite of an oil surplus has created a five-year low oil price of 66.15 USD per barrel.

And the growth of the worldwide textile industry will also profit decisively from the growth of the world's population. The web page countrymeters.info supplies the current population of the world on a real-time basis, providing us with the fact that 126,835,995 people were born in 2014, whilst 53,713,137 souls passed away in the same period. There will be about 7.24 billion people alive on the planet at the end of the year, approximately 75 million more than last year, corresponding to an increase of 1.1%. The African countries and states of the Arabian Peninsula have the biggest population growth.

According to the UN world population report, Oman is first, followed by Qatar and then South Sudan. These are followed by Niger, Kuweit, Uganda, Burundi, Gambia, Eritrea, Angola, Lebanon and Tanzania. Their growth ranges from 3.0% to 7.9%.

Essential impulses for the textile industry in 2015 will certainly come from two of its most important exhibitions. The Techtextil in Frankfurt has been popular for many years, with record numbers of visitors and exhibitors registering annually. It long ago became the most important worldwide meeting place for the producers of technical textiles and nonwovens. The branch further distinguishes itself with a high growth rate and pioneering innovations can be expected at the Techtextil every time.

And in November, the top performance parade of the textile machine world takes place at the ITMA. Quantum leaps in machine development will be on display, providing the textile industry with even higher levels of automation, improved productivity, increased precision and even better manufacturing quality.

An ITMA year is simply a good year for the branch, and that includes the textile and clothing producers, as well as, and above all, the textile machine producers. This will hopefully not change during the event, set rather late in the year, in November. And for those who believe in the hidden mythology of numbers, 2015 is destined to be an excellent year, both because it's an odd number, and because the sum of the digits is 8, the perfect number!

Record figures of CINTE Techtextil China demonstrate China's strength and growth potential

Asia's leading biennial technical textiles fair, Cinte Techtextil China, concluded with a very respectable 12,496 visits recorded over the three days of the fair, representing a 63% increase compared to the previous edition in 2012 of 7,659 visits (excluding concurrent fairs). Visitors came from a total of 61 countries and regions, with the top five (excluding Mainland China) being Korea, Taiwan, Japan, India and Hong Kong.

In total, 459 exhibitors from 22 countries and regions took part in the fair, a 4% increase compared to the last edition. This year the fair was held from 24 – 26 September at the Shanghai New International Expo Centre across 35,000 sqm, an expansion of 40% on the last edition and the largest in the show's history. It was also held separately from Intertextile Shanghai Apparel Fabrics, unlike in 2012, and according to Wendy Wen, Senior General Manager of Messe Frankfurt (HK) Ltd, there were a number of positive effects to come out of this. "Being held independently to the apparel fabrics show really ensured more qualified buyers attended, with many exhibitors expressing that visitors to their booths were more aligned with their target market," she said. "Numerous exhibitors also reported that there is still a lot of potential in the Chinese market, and in particular for European suppliers, the demand for their products and recognition of their strong quality by domestic buyers was very evident."

Exhibitors pleased with flow and quality of buyers

Many exhibitors commented this year that the quality of buyers had improved, and that they were able to find their target buyers at the fair. "We've been to this fair for many years now as it is a professional one with high-quality visitors," explained Susie Zhang, Marketing Representative in the Shanghai office of German testing company ISRA Vision AG. "This year the visitor flow has been good, and we could meet both existing and new customers," she continued.

British firm Reliant Machinery agreed on the quality of buyers. "We've had a lot of discussions here and met buyers from a wide range of the industry, and many of them were managers," David Xue said.

First-time German exhibitor DIENES was satisfied with the opportunity to meet their target customers at the fair. "We are very happy that we could find a lot of our target buyers here. We didn't make any appointments before the fair but we were still able to find new customers," company representative Richard Leung said. "Being in the German Pavilion was also extremely useful for us to enhance the image of our company."

Large potential in Chinese technical textiles market reported

Potential in the Chinese technical textiles market is still high according to exhibitors, and there is growing demand across a wide range of products many of them report. "We have some existing customers here in the filtration industry and there is strong demand in China for these products," B. Mehmet Inceoglu from the Technical Fibres division of Turkish company AKSA explained. Medical products are another area with potential in China according to the Hong Kong Research Institute of Textiles and Apparel (HKRITA). "The feedback from buyers has been good and we've met a lot of people from R&D departments here. Many buyers here are looking for medical technology," Marketing Manager Lydia Fung said.

The nonwovens industry is also experiencing strong growth in China. “Nonwovens business is doing fantastically in China and is growing significantly; there’s lots of room for growth here,” Edward McNally from Oerlikon Textile, Germany outlined. Many other sectors are growing too according to Guy Decleer from Belgium’s Beaulieu Fibres International. “Our target is the high-end market and we see potential in the future. There’s a lot of demand here for high-performance geotextiles for high-speed rail projects, and demand for floorings and auto textiles has increased a lot too.” As in the Chinese textile industry as a whole, demand for European products is very high in the technical textiles sector, with domestic buyers appreciating the quality and technological advantage these products have. “Buyers here definitely recognise European quality,” Guy Decleer from Belgium’s Beaulieu Fibres International confirmed. “Those manufacturers that are producing here for export in particular appreciate higher quality. And being in the Belgium Pavilion helps too as buyers automatically see us as Western, having a different quality level and offering new products,” he said.

Lets have a look at some of the machinery suppliers and their exhibition portfolio. **Autefa Solutions** informed at Cinte about latest developments. The European company (Austria, Germany, Italy and Switzerland) delivers turn-key lines as well as individual machines for nonwovens manufacturing. The product range includes fiber preparation machines, nonwovens cards as well as aerodynamic web forming machines (Airlay), crosslappers and for mechanical bonding needle looms.

Autefa’ s focus has been on high speed thermobonding ovens for the manufacturing of ADL nonwovens, as well as for drying systems for the Airlaids and Wetlaids industry. The key strengths of the AUTEFA Solutions belt dryers are uniform airflow and the precisely adjustable temperature distribution, the ability to maintain loft or to create high densities.

Energy Efficiency is guaranteed by EnRec Technology which offers a 6-level energy saving concept which substantially reduces the energy consumption of new or existing lines.

The outstanding payback on the line and the functionality of the EnRec Systems convinced already more than hundred customers all over the world. AUTEFA Solutions is a market leader in China for high speed air through thermobonding lines for hygiene products such as acquisition and distribution layers (ADL).

Automotive applications and the growing needs for air -filters are two of Autefa Solutions focused market activities in China.

Of cause **DiloGroup** from Germany has been an exhibitor of the fair and looked forward to new challenges. As DiloGroup sells not only complete production lines for the nonwovens industry but provides its customers also general and basic production know-how, CINTE was an ideal platform for the DiloGroup to presenting nonwoven pre-products made on Dilo machinery. Customers trust DiloGroup as a competent and reliable partner in all aspects of their nonwoven manufacturing projects.

The correct choice of line components becomes more important with the increase in applications for nonwoven fabrics. Fabric quality and production economics must be considered at the outset of a project. Within a wide range of potential requirements many options for line configurations exist. Hence each is engineered specifically by DiloSystems, part of the group. The knowledge of DiloGroup in the different process technologies and the subsequent basic pre-products relative to the particular applications area are significant factors in any successful project.

This is supported by experience gained from more than 270 successfulline installations. From needlepunching to spunlacing and thermo-bonding lines, all staple fibre nonwovens technologies are considered in these evaluations. Dilo customers benefit from this knowledge not only in their decision-making process but also during order processing, delivery, installation, commissioning and service.

On 150 square meters **Groz-Beckert** from Germany dedicated itself to the topic of nonwovens used for car interiors. The highlight of the booth has been the TexCar – a carefully cut open and specially prepared Mercedes E-Class model. The prepared vehicle reveals exactly where textile materials are used in modern cars. In its presentation of solutions, Groz-Beckert focused on special needles for the production of needled nonwovens that were visible in the car interior. Depending on the requirements and desired material and surface properties, Groz-Beckert recommends different needle types and handed over the relevant needle samples to its customers right at the exhibition booth.

And the visitors at the Groz-Beckert booth could find out how headliners, floor coverings, parcel shelves or trunk liners can be produced not only in top quality but also efficiently and economically!

Oerlikon Neumag from Germany presented a comprehensive portfolio of nonwoven and staple fiber technologies, from meltspun spunbond (spunbond and meltblown) to airlaid nonwovens (airlaid) and the new compact staple fiber line Staple FORCE S 1000.

This new machine with its compact construction and low throughputs of up to 15 tons per day, enables swift product color changes with considerably lower waste. The savings in terms of energy and water resulting from the deployment of a dry-drawing process, lead to a reduction in operating costs and simultaneously protect the environment. The option to install the system on a standard industrial floor also minimizes investment costs. “Efficient, flexible and compact – these are extremely attractive factors for our customers, opening up diverse, new market potentials for them”, summed up Oerlikon Manmade Fibers Sales Director Michael Korobczuk.

In the field of technical spunbond technology Oerlikon Neumag offers the complete process from polymer chips up to roll goods for the production of substrate for bitumen roofing membranes, sarking membranes and also geotextiles.

The one-step spunbond technology convinces with a combination of effectiveness and productivity, thus lowering production costs by up to 20%. The Oerlikon Neumag meltblown technology enables the cost-efficient production of high-quality melt-blown and SMS (spunbond-meltblown-spunbond) products. And the core of the Oerlikon Neumag airlaid technology, the forming head, sets standards for the production of extremely thin airlaid nonwovens. Application areas of the presented technologies are for example special technical uses such as filtration, roofing, geotextiles and automotive, as well as hygiene applications. The Swiss textile machinery manufacturer **SSM** showed one brand new machine for technical yarns - the SSM DURO-TW precision winder for all technical yarns up to 50’000 dtex. This winder offers a new level of flexibility and winding quality in one machine; thereby ensuring the fulfilment of all customer requirements and has been presented for the application of reweinding. The assembly winder DURO-TD allows the playing of multiple ends/yarns; independent of them being of the same type or completely different. Optional intermingling guarantees loop-free twists as well as optimal unwinding during twisting. The ability to run closed precision winding enables higher package densities, thereby increasing the knot-free length. Other technology and machinery suppliers from Europe were for example J Zimmer Maschinenbau from Austria, Andritz Asselin-Thibeau and Laroche from France and Monforts Textilmaschinen, Allma Volkmann, Brueckner Textile Technologies, H Stoll, Lindauer Dornier, Mahlo and Trützschler with its divisions Trützschler Nonwovens & Man-Made Fibers and Trützschler Card Clothing form Germany.

However - the demand was not exclusive to European suppliers, with Jenny Seo from the Korea Textile Trade Association (KTTA) explaining: "There's big demand in China for our products, and the fair is good to tap into this as we met 25 of our target buyers on day one. Chinese buyers really like our products because of the good quality."

Domestic exhibitors also achieved positive results

Like their overseas counterparts, Chinese exhibitors also had a successful fair. Textile producer Hangzhou Jeenor Cleaning Supplies was a repeat exhibitor to the fair. "We met many professional buyers this year, with most of them coming from throughout Asia including Korea and Japan," Sales Manager Susan Lai explained.

"This fair plays a big part in promoting our brand within the Chinese market." Fellow textile exhibitor Wenzhou Changlong Textile Technology's Vice General Manager Huadi Wang explained the success the company had at the fair this year: "Some customers have already placed orders with us here so the fair this year has been successful for us."

Buyers praised fair for range and quality of products on offer

Visitors to the fair generally came away satisfied with the range that was on offer, plus the quality of both domestic and international exhibitors. Emily Blanch, a Design Engineer for Australian company ResMed was sourcing textiles for the medical industry. "The fair has a good range of products with the 12 application areas so it's a good reason to come here. Both domestic and international exhibitors here have good-quality products, and there are more future textiles compared to other fairs."

First-time buyer Ilker Arisoy from Turkish company AKM Metalurji Sanayi Temsilcilik commented on the product quality: "This is my first time in China and I'm amazed by the standard of quality here; it's much higher than I thought it would be." Chinese buyer Lei Yi from Canadian company Albarrie agreed.

"I attend the fair in order to look for new products and have found some that can be applied to different industries. I can find both overseas and domestic suppliers here with good-quality products."

In addition to the wide range of products and technology at the fair, the fringe programme provided information on the latest trends in the market and product developments. Over 30 seminars and product presentations took place, with topics ranging from regional and global market overviews to new product innovations.

Both exhibitors and buyers appreciated the fair's comprehensive fringe programme.

Over 30 seminars and product presentations were scheduled for days one and two of the fair, with topics ranging from a focus on a particular product or end application, to overviews of regional and global trends and developments.

The key seminars included:

- Technical Textiles – Global Trends and Developments, Michael Jänecke, Director of Brand Management for Technical Textiles / Techtextil, Messe Frankfurt Exhibition GmbH, Germany
- Ecological lnnovation in Textile Finishing, Alex Guo, Sales Manager for Greater China, Freudenberg Management (Shanghai) Co Ltd, China
- Automotive Nonwoven Components from Recycled Diaper Materials, Dr Serden Mujdeci, Project Manager, Hassan Group, Turkey
- Multi-purpose Wet Laying and Spunlacing Lines, Dr Ullrich Münstermann, Director of Technology & Product Development, Trützschler Nonwovens & Man-Made Fibers GmbH, Germany

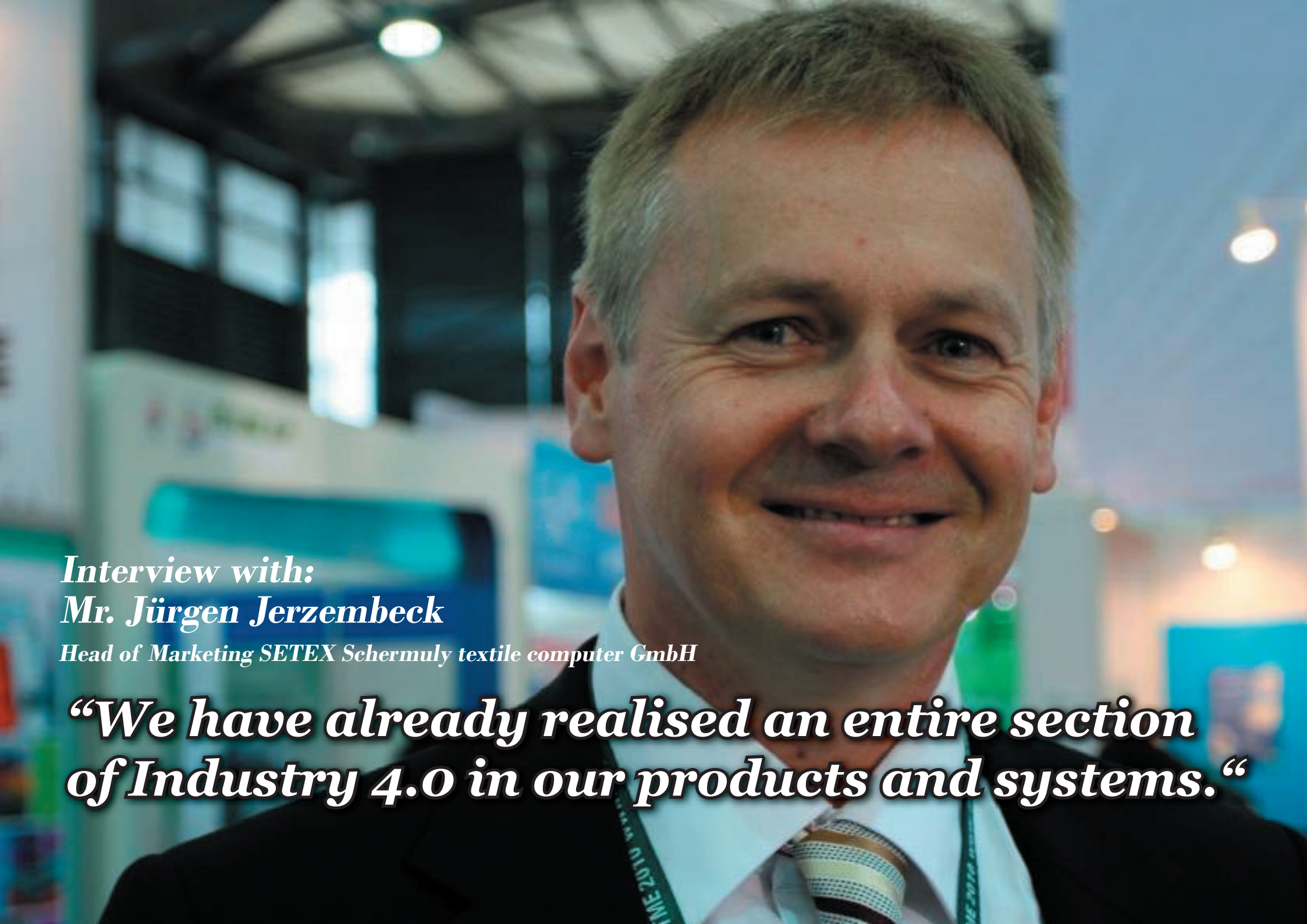
Product presentations provide greater understanding of latest technology to buyers

In addition to the seminar programme, a number of product presentations have taken place throughout the fair to give buyers greater insight into the latest technology on display.

Elbit Vision Systems from Israel was one exhibitor who took part in the product presentation sessions, and according to the company's Director Roland Huang, the experience was very beneficial. "This is a very effective platform to introduce the concepts of our company's latest R&D system," he said. "The feedback at the end was very good and we received a lot of enquiries. There were many people in the audience too so it was very beneficial to our company." Seminar participants were also pleased with the speakers and content. "This seminar was beneficial in helping with our product research, and showed effectively the direction the industry should take in the future," Jake Fan, Tech Engineer of Xinlong Holding Group from China commented. What's more, the Innovation Showcase displayed the newest technology and fabrics from exhibitors from around the world, while the China International Nonwovens Congress was well-received by participants.

Held on the afternoon of 25 September, the Congress boasted an exciting line up representing companies from Asia, Europe and the US. This included Dave Rousse, the President of the Association of the Nonwoven Fabrics Industry (INDA) who talked about Trends and Developments in the North American Nonwovens Industry. And Norman Chiu, the Chairman of the Taiwan Nonwoven Fabrics Industry Association discussed the Competitiveness of Taiwan's Nonwovens Industry. Also included in the Congress programme were speakers from Autefa Solutions GmbH from Germany, Lenzing AG from Austria, and Hismer Bio-Technology Co Ltd, Shandong Tiandingfeng Nonwovens Co Ltd and Tianjin Polytechnic University from China.

The next Cinte Techtextil China will take place in October 2016 in Shanghai. Cinte Techtextil China is organised by Messe Frankfurt (HK) Ltd; the Sub-Council of Textile Industry, CCPIT; and the China Nonwovens & Industrial Textiles Association (CNITA).



Interview with:
Mr. Jürgen Jerzembeck

Head of Marketing SETEX Schermuly textile computer GmbH

“We have already realised an entire section of Industry 4.0 in our products and systems.“

SETEX is a worldwide leading automation system specialist in the dyeing and finishing trade. Would you give us a short overview of your products and services?

Jürgen Jerzembeck: If I should describe what we do to a politician in 30 seconds, I would say that we offer control components which operate the parts of a refining machine, consisting of steel kettles, conduits, engines, valves and sensors. With such precision and diversity, that any variation is made possible, in a way that provides enjoyment for those present.

To be more precise, a SETEX solution consists of machine control components and the OrgaTEX.MES Software-Suite. The SETEX and SPS control hardware is produced by the parent company in Mengerskirchen, from components developed specifically for the application purpose, as well as the requirements of machine, operational specifics and the production environment. The product lines are adaptable and modularly conceived, in particular our flagship SECOM 777CE. Many of our large OEMs (original equipment manufacturer) automate all kinds of machines with this control device. They form the interface between person and machine in a way that the user immediately receives the necessary information and is able to react accordingly. The upstream SETEX SPS, which contain the security and process information, are concealed in the switching device and can be modified to any requirements.

We offer additional finishing services, for example, different types of goods temperature and exhaust humidity sensors. And our department for optical data processing has just completed Version 3 of the SETEX CamCOUNT and Fabric Inspector. These camera-based measuring instruments collect thread frequency data from the woven and warp-knitted product, either quiescently or at full speed, regulating the speed and advance of the main draw rollers on a real-time basis. This assures that the retailor receives precisely the quantity of thread per cm2 required for processing and fastness, and so that the refining process does not knit too tightly causing linear metre loss.

Efficient administration of the machine and procedure parameters is realised with the control station and the MES OrgaTEX software. Production cells are dissipated and an efficient communication, both to the machines and between the machines, optimises the throughput and exposes weak spots as well as bottlenecks, securing know-how.

As an owner-operated family enterprise, we think highly of quality and long-term partnerships. With over 20 years of experience in the textile refining business and short experience exchange channels, our customers appreciate our knowledge regarding modern IT structures, process optimisation, interfaces and integration issues with external systems.

The supposition is obvious that your customers are the textile machine builders themselves. Or are they also textile enterprises?

Jürgen Jerzembeck: For SETEX the combination of textile machine builders (OEM) and textile enterprises is an important cornerstone of our commercial strategy. We work together with more than 30 OEMs worldwide. We see this as a partner business. OEMs choose us because of the quality and reliability of the products developed by us, our predefined Software Libraries tailored to the needs and the steady conversion of innovations using the latest technical innovation, all combined with immediate, face-to-face support. We speak their language and we‘re near them. In our favour, we profit from our customer‘s distribution channels and the possibility to transfer production to a complete system. Beside the purchase of new and modern production machines, it can often make sense for textile refining enterprise customers to invest in flanking measures, preserving the value of their existing production systems. One doesn‘t have to purchase a whole cow if one only needs a glass of milk. In these cases we work directly for the end customer.

So existing plants and factories can also be refitted with your products? What is the concept behind that?

Jürgen Jerzembeck: In addition to a reduction in production costs through the acquisition of new textile machinery, there are the other promising measures which increase competitiveness.

For example, increasing production transparency and flexibility, optimising planning and reducing shutdown times. When our customers adapt new and existing machinery as far as technologically possible, the production flexibility increases. With the centralised management that a control system provides, the customer receives the necessary transparency for better planning. Standard tasks are taken over by the system, and the expert can better concentrate upon quality control and process optimisation. In this way, our customers experience sustainable improvement of the competitiveness of their enterprise.

What form does a typical incoming textile company inquiry take, and how do you deal with them?

Jürgen Jerzembeck: One can classify inquiries roughly into three groups. The first group has machines which are operationally completely outdated and the supplier cannot and should not renew the system. Here we project solutions where most hand counters are replaced by our SECOM control system in which reproduceable procedure steps are programmed. We can also connect to more modern sensors, e.g., analogous levels and water meters to precisely determine capacity and additive levels. The second group operates machinery from a variety of manufacturers and has, until now, never considered a machine control system. The manufacturer simply delivered the system of their choice. This customer has now recognised the advantages of a control system and wish to link their machinery.

Unfortunately, it is not as simple as plugging in a network cable and connecting to a server. The result is like a German calling China: You can get a connection but you can‘t understand a word! It is precisely here that SETEX investigates as to what extent one can integrate the external controller into the system, or whether it is more expedient to retrofit these machines with SETEX controls.

The third group would like to produce more efficiently and integrate automatic cradle, dosing and feeding systems. In this case, SETEX checks the halls and machine plans and the automation and control systems of every machine. Depending on the manufacturer, the dosing systems are different, and each individual machine program must be adjusted to integrate automatically into the system. Ideally as quickly as possible before the necessary processing restarts. Additionally, communication is enabled between machines. For example, a disperser can fill the additional container of a dyeing machine. Or a dyeing machine registers the fact that is either empty, must be cleaned, or if the exhaust is blocked. All of these options are possible.

Above all, our universal know-how is important for the customer. Our comprehensive network is also a factor. With our many service stations we always speak the customer’s language and we’re always nearby.

How closely are you interlocked with the machine builders? When and how do they integrate SETEX during new developments?

Jürgen Jerzembeck: We have much to offer machine manufacturers with regard to the connection of „internal innovation“ within machines, or with the ideas with which hardware, machine software and control mechanism combinations are concerned. This begins with tools for the „know-how protection“ of functions which make some machines unique. It is especially important, of course, that a competitor cannot glean information from the programs themselves.

Let us look at the area of servicing. This is where the linking of information from machine components, controls, production history, alarm reports and production planning are useful to the customer in order to maintain the machines optimally whilst disturbing production as little as possible. In addition, communication with the machine manufacturer is improved. What distinguishes highly automated finishing production from traditional manufacturing? Key words are quality and cost.When the product comes into finishing, it has already been through numerous refining stages. Any mistake made now costs money. Even if the machine offers the best wefting, width profiles, goods temperature with fusing unit regulation, speed and advance with surface density, plus exhaust humidity measurement, important qualities can be served in this highly automated solution only with central control systems such as OrgaTEX.MES. Each section receives its own individual finishing recipe. Automatically.

The machine parameters are determined, transferred and controlled individually for every section. Reliably. Manual input is always avoided where possible. And batch log data are archived, provided for retraceability, evaluation and optimisation. These are examples which affect quality improvement. On the cost side there are other possibilities to work more economically with SETEX solutions. In this way, each machine can be considered within the overall energy concept to avoid energy peaks. And the intelligent integration using a dosage system saves chemicals and residual solutions, as basic approaches to runtime are regulated via the product pickup.

And what makes SETEX sensors and software control systems special? Where do the product strengths lie, perhaps with regard to comparisons to the competition?

Jürgen Jerzembeck: In future those that will win and survive will be those who offer specialisation with high quality. And with quality I mean not only the product quality, but above all also the quality of the customer - service provider relationship.

Price wars will only destroy the sector, but it will be those who combine expert attention with high quality that will succeed. SETEX places emphasis on the people in the enterprise. These are the excellent employees who make the enterprise interesting and successful.

The subject of improved sustainability and increased environmental protection has for some years been a focus of the textile industry and it‘s also a central topic of interest for the coming ITMA Milano. Which contribution can your solutions make to a more sustainable production?
I previously described the customers who would like to produce more efficiently using available machinery. The initial integration of dyeing and dosage systems into these machines can be developed even further. In addition, upstream production stages are taken into consideration in the dyeing lab and pretreatment machines with regard to resource management of hot water, gas, steam pressure, electricity or waste receiving water levels. Our solutions help to avoid peaks, balance energy consumption, saving energy in the medium term. Optimised procedure guidance reduces water and chemical consumption, consequently reducing the waste water load, making the carbon footprint more controllable.

Automation was one of the main subjects at the ITMA Asia in Shanghai, said Mr Wang Shutian, President of CTMA, in his closing speech. How has this demand for more automation presented itself in China and Asia on your stand?

Jürgen Jerzembeck: THE ITMA ASIA is becoming more and more significant. We perceived an increasingly international audience at the fair. Both OEMs and end customers requested sustainable solutions. Heat recovery and hot water management are also interesting subjects, and OrgaTEX.MES system solutions provide important options.

Simple and basic functional controls for simple dyeing machines are offered directly by Chinese machine builders. After the immense support in the last 5-plan, this is now being demanded even by the government. Whosoever wishes to supply China today must provide visible added energy efficiency value.

China is a very important outlet for all textile manufacturers and they've implemented radical changes over the past few years. How do you feel these changes and where do you see your chances?

Jürgen Jerzembeck: China has reached a degree of growth which cannot be seen as sustainable in the long term. There are simply not enough natural resources, and the impact on the environment is increasing. Energy supplies cannot keep pace. But persistent pricing pressures and the competition increased by globalisation is giving Chinese textile factories a hard time. Manpower costs have multiplied. Well qualified professional forces are relocating to other industrial sectors.

The proven SETEX graphic operating control concept, with which even the most complicated modern short fleet machines can be simply operated, helps enormously in day-to-day business. Small and middle-size enterprises (KMUs) are also taking advantage of OrgaTEX.MES. Data transparency, quality and reproduction ability are at the forefront, as well as know-how security.

Without networked production, human mistakes lead to wrong decisions, unreliable processes, and high costs; a dangerous cocktail.

In which countries do you see the highest potential for your products in the next 2-3 years?

Jürgen Jerzembeck: As far as volume is concerned, there'll be a lot happening in South East Asia. Complex, fully-integrated system projects are regularly available from EU countries. These companies are going on the attack and modernising. An option does not seem to exist concerning the global competition: So, carry on as before!

You've been at SETEX since 2009 and you became Marketing Manager on the 1st of October. You began in Marketing as Sales Manager for the DACH region, as well as southeastern Europe. What excited you in both positions?

Jürgen Jerzembeck: Originally, I come from the area of textile refining system solutions where I defined workflows and interfaces with software suppliers from ERP, MES and colour lab systems. It was an obvious choice when I started at SETEX to look more specifically at the market trends for system solutions.

Symposia with end customers, new prospectuses, as well as formulating features on customer use, launching a fresh Corporate Identity (CI), defining strategic partnerships, e.g., with bluesign®, precision consumption screenings as a system partner with the aim of providing the „best available technology“ (BAT) to customers worldwide, whilst simultaneously synchronising a corresponding ITMA.

It simply doesn’t get much better than that for a marketing man. I took over a retiring distribution manager‘s regions. I found a well set up customer base which was already technologically sound and whose competitiveness was able to be improved using our upgrades, our systems, and 3rd party integrations.

I think that every manager should have at least worked once directly in distribution. The daily businesses of the customer, their demands and wishes have to be understood in an expedient face-to-face relationship rather than from the traditional bird‘s-eye view. This year we have expanded distribution. That is why I am back in the saddle to strengthen the SETEX brand using effective communication.

When dealing with automation for the future one constantly hears the words „Industry 4.0“. With the help of this automation revolution, intelligent factories (Smart Factories) which produce products along the entire value added chain are being created. Is your SETEX MES (Manufacturing Execution System) OrgaTEX.MES a step in this direction, and if yes, why?

Jürgen Jerzembeck: Everybody is talking about Industry 4.0 - we have already realised an entire section of Industry 4.0 in our products and systems. With better interlinking we enable communication and intelligent production management, from the planning stage right up to the sensor in the machine. Our OrgaTEX.MES optimises every production stage individually; according to customer requirement and the production process itself. In addition, the system checks the qualities of the machine and the demands of the recipe.

The values of the procedure parameters are individually calculated using Smart Data management. Data from different sources are accessed, balanced according to demand, and valued against stored process data. The aim: To make the production faster whilst optimising quality and cost. Simultaneously, one has the entire production in view from the office; every dyeing step on every machine can be constantly monitored.

With the completion of a batch, all necessary resulting information is saved for retraceability and analysis. A precise data grid is created by cyclically selecting data from decentralised components, following predetermined or process-specific actions, and this is stored centrally in OrgaTEX.MES.
If one lays the „fingerprint“ of the batch produced over the theoretical procedure, the qualities of machine and product become visible for additional optimisation measures.

Even „machine-to-machine“ connections become possible with this system; for example, machines can be programmed to decide which uses the hot water first, or whether the fleet from the next section should already be attached in the holding reservoir, depending on current energy consumption in the boiler house. This ensures that no electricity or gas peaks occur, something that could cause considerable financial expense.
In the future, SETEX controls and our OrgaTEX.MES will be further simplified using the latest technology, making additional profit possible from machine 1 on. More efficient hardware and greater network ranges enable new visualisation technologies and web-based services. The next few years will certainly bring some exciting developments.

Heimtextil 2015 will be the spectacular hotspot for trends and future-oriented themes

The first major event of the year for the international furnishing sector: Heimtextil, the world's biggest trade fair for home and contract textiles, opens its doors in Frankfurt am Main from 14 to 17 January 2015. In addition to an unrivalled range of products for the window, upholstery, floors, walls and sun-protection segments, as well as bathroom, bedroom and table textiles, Heimtextil 2015 will be distinguished by visionary trend presentations, informative events, international awards and other occasions for the sector.

"Our aim is to offer the international sector not only the most comprehensive range of products at Heimtextil 2015 but also the earliest possible overview of tomorrow's themes and trends", says Olaf Schmidt, Vice President Textiles & Textile Technologies. "I am confident that Heimtextil 2015 will achieve this goal, an optimism that is reinforced by the positive echo from the exhibitor side and our plans for a new, lavish trend area."

Outstanding number of exhibitor registrations

The coming Heimtextil is well on the way to being distinguished by an excellent number of exhibitors. In 2014, 2,714 companies made presentations and set a new record for exhibitor numbers at the fair.

This positive development is set to continue in 2015, as reflected not only by an increase in the exhibition space already booked but also by the fact that several renowned new exhibitors have signed up for Heimtextil 2015. They include, in the home-textiles section, Boras Cotton, Epson Europe, J. Pansu and Perla Texbiar and Toray, and, in the case of household textiles, Andersen Textiles, bb&dd, EG.Heild, Fossflakers, GI.PE. Tex, Mistral Professional Textiles, Sot. Sboras, Spacio Repos, Tejidos Acabados Teycu, Udden, Värnamo Sängkläder, Visco Foam, 'von Erika' and Westmark. Several renowned companies that did not take part in recent editions of Heimtextil have decided to return in 2015. In the home-textiles segment, they include Diaz Sunprotection, Eisenkolb, Fine, Fine Art, Gebrüder Munzert, J. Pansu Paris, Johanna Gullichsen Oy, Ledieu-Houriez, Lodetex, Nelen & Delbeke, NMC, Nooteboom Textil and Tilldekor. Among the returnees in the household textiles segment are C-ENG, David Fussenegger, Fussenegger Heimtextilien, Steiner and Zoeppritz.

Hall 4.0 to be occupied for the first time as the hotspot for tomorrow's trends

In addition to the exhibition space used at previous events, Hall 4.0 will also be integrated into Heimtextil 2015 as the first port of call for all visitors looking for particularly innovative products and the latest trends, e.g., the booming field of digital printing, the 'Teppich & Du' initiative and the 'Heimtextil Theme Park'.

'Digital Print' product segment

To give 'Digital Print' more room for growth, this product segment is moving into the new Hall 4.0. With its central position in the fairgrounds, visitors can experience the complete range of technologies and machines for digital textile printing.

All the major players in the business have registered; these include HP, Reggiani Macchine, POD – Equipamenta, Durst Phototechnik, Kornit Digital Europe, Xeikon International, Digital Graphics and J. Zimmer. According to the most recent figures a total of eleven exhibitors will be presenting their innovative printing techniques (2014: six exhibitors).

"Digital textile printing has three advantages: in the first place, the technology requires fewer resources and enables faster production cycles. Secondly, textile designers can experiment more creatively and flexibly with high-quality forms and models. Thirdly, purchasers of home and household textiles have the possibility to respond more quickly and more individually to today's consumer requirements," says Ulrike Wechsung, Director of Heimtextil. "With our 'Digital Print' segment in Hall 4.0 we can offer the largest selection so far of technologies for digitally printed home textiles at the forthcoming Heimtextil and consequently new sales opportunities for our design-oriented exhibitors and visitors."

As a new exhibitor in the 'Digital Print' field, Heimtextil welcomes Epson Europe. „As a global event for the latest developments in home and contract textiles, Heimtextil provides the best opportunity to showcase the superb creative design and production flexibility of our latest inkjet printers and inks," says Richard Barrow, Product Manager, Epson Europe "With Epson inkjet technology it's easy and affordable to produce bespoke interior decor products in stunning quality on-demand and in small quantities. At Heimtextil we will demonstrate contemporary fabrics and wallpaper printed using a variety of Epson printers, also showing how our dye sublimation technology can open up new decor opportunities on a variety of surfaces such as glass, metal and plastic."

Supplementing the exhibitors' product presentations will be the 2nd European Digital Textile Conference, which is being organised again in cooperation with the World Textile Information Network (WtiN) on the second day of the fair (15 January 2015).

This year, the conference will deal with the following topics: market figures and trends, advantages of digital printing over screen printing, new machines and technologies, printing on fabrics made of polyester, cotton and cellulose fibres, optimum colour management and fabric pre-treatment, the use of modern print heads and successful examples of digitally printed home textiles.

‚Teppich & Du‘: carpets and textile floor coverings positioned as trend products

The wholesalers‘ association, Copa, will be represented with its ‚Teppich & Du‘(Carpets & You) initiative. In conjunction with the brands CRO, Nordpfeil, Tisca Tiara and Vorwerk, Copa is taking advantage of the world‘s largest trade fair for home and contract textiles to position textile floor coverings as modern, healthy and aesthetic items for use in room design.

Their stand at the trade fair will also be integrated into Hall 4.0.

„We are delighted that the ‚Teppich & Du‘ initiative, which is supported by some of the sector‘s market leaders, is being presented in such an exciting context. It highlights particularly our commitment to textile floor coverings and makes clear, how well this product harmonises with the innovative trends at Heimtextil,“ says Ulrike Wechsung, Director of Heimtextil. As Manfred Birkenstock, Executive Chairman of the Copa Board of Management, explains:

„With our regular presence at the leading trade fairs in the sector, we are clearly demonstrating that the ‚TEPPICH & DU‘ initiative is set up to be a sustainable and long-term phenomenon. We are looking to build up and secure our networks here and Heimtextil is absolutely the right place for us to meet our core target group – those involved in room furnishing. Embedding ‚TEPPICH & DU‘ inamongst the sector giants like Vorwerk demonstrates the extent to which both manufacturers and wholesalers are behind the campaign and are willing to support it as part of their own activities.“

New ‘Theme Park’ trend area

The event highlight in Hall 4.0 will be the ‘Heimtextil Theme Park’, which expands the previous Trend Show and moves from the ‘Forum’ to Hall 4.0 where it will provide a completely new form of presentation for the trends. The ‘Theme Park’ has room for a comprehensive show of future-oriented themes relevant to the sector.

A series of measures will guide visitors’ attention to design-oriented, contemporary aspects including a ‘Material Gallery’ with specially selected exhibitor products, which provides an overview of the home-textile trends categorised by the trend themes for 2015/2016. The latest colour trends will be presented at the ‘Colour Pavilion’. Additionally, the ‘Theme Park’ will include hospitality, retail and sustainability areas.

At the ‘Conference Space’ and ‘Community Area’, visitors can attend lectures given by top speakers and take advantage of the opportunity to exchange ideas and information with colleagues. But that’s not all: films will also be shown at the ‘Theme Park Cinema’.

The Heimtextil management team introduced the new Heimtextil ‘Theme Park’ in two discussions broadcast around the world live on 1 September 2014. On behalf of the Heimtextil Trendtable, which is made up of six international agencies, Anne Marie Commandeur of Stijlinstituut Amsterdam presented the new large-scale project and outlined the Heimtextil trends for 2015/16. Trendtable members Mayouri Sengchanh of Exalis/ Carlin International and Felix Diener also offered a prognosis for the textile interior-design trends of the coming season. Thus, representatives of the press and Heimtextil exhibitors had the chance to obtain an initial insight into the new trend themes around four and a half months before the international trade fair for home and contract textiles opens its doors from 14 to 17 January 2015.

‘Experience’ is the superordinate Heimtextil trend theme for 2015/2016. “Textiles are the perfect vehicle for inspiring, sensory and interactive experiences”, explained Anne Marie Commandeur of Stijlinstituut Amsterdam during the conference at Frankfurt Fair and Exhibition Centre. The conference also provided the setting for the presentation of the new Heimtextil Trend Book. “In both the book and the ‘Theme Park’ at the fair, we present a selection of spectacular projects, which can be experienced with all the senses.”

For the first time, the Trend Book comes with ‘interactive print’ elements, which enable readers to obtain supplementary information in digital form by scanning the parts of the book marked and then watching animated images on their smartphone or tablet. Additionally, the trend prognoses are supported by an extensive website with detailed background information and project presentations at www.heimtextil-theme-park.com.

Four design themes show new ways

The first part of the Trend Book revolves around social, political, technological and artistic themes – all key themes that have a decisive influence on designers. The second section looks at trends that are set to have a direct influence on interior design and home textiles in 2015 and beyond. To this end, the trend experts proposed four design themes: ‘Sensory’, ‘Mixology’, ‘Discovery’ and ‘Memory’.

The third part of the book is devoted to colour innovations and presents worlds of colour corresponding to the four design themes.

Spotlighting the retail trade, contract business, technology and sustainability

The new Heimtextil ‘Theme Park’ and its accompanying media emphasise the challenges and opportunities for the retail trade, the contract business and the tourist sector.

The ‘Retail’ and ‘Hospitality’ blocks spotlight pioneering projects and are a source of ideas for new business concepts. Additionally, the focus of the trend prognoses is on technology and sustainability. A large number of young designers specialising in microbiology and computer sciences play an important role in the Technology and Sustainability blocks. By way of contrast, others work on projects involving low-tech handicrafts, recycling and re-use.

Reorientation of the successful Heimtextil trend concept

As the world’s biggest trade fair for home and contract textiles, Heimtextil has a special function as a trend barometer and benchmark for high-quality textiles characterised by excellent design and innovative functionality. Against this background, Messe Frankfurt launched the Heimtextil Trend Show back in 1991 and has expanded it continuously since then. Every year, the Trendtable of international experts filters out the most important general trends and provides valuable orientation and reliable trend prognoses for product developers, creative teams, furnishing experts and designers. For Heimtextil 2015, Messe Frankfurt is preparing a new, expanded trend concept called the Heimtextil ‘Theme Park’. Stijlinstituut Amsterdam is responsible for the concept and the presentation at the fair, as well as the accompanying book and the new website.

Heimtextil Theme Park ‘Experience’ Trends, 2015/2016 – The design themes: Sensory: the well-being factor

Designers create new products for the home, which appeal to our growing interest in tactile and sensory impulses. They find solutions via the link between science and design and thus increase our feeling of well-being. To this end, they use intelligent textiles with built-in responsive technologies that, for example, react to changes in the source of light. Inspiration also comes from the beauty and wellness industry. Super-sensory fabrics draw on the huge variety of tactile effects that excite our senses: light, feminine and transparent.

As a sensory contrast, fabrics with polished surfaces or varnish-like lustre and uniformity are used together with paper surfaces and oily finishes.

Mixology: inter-cultural exchange

Variety is trumps. Cultural fusion has given rise to a modern ethnic heritage. From now own, experimentation and the interaction of different identities is the name of the game. Patterns, prints and colours collide almost chaotically with each other. African tribal design meets 3D rave motifs, retro with futuristic, digital with organic. At the same time, people are enthusiastic about recycling and product hacking.

New applications are found for waste materials with due consideration being given to material properties. The result is valuable design objects and – no less important – the feeling of independence from conformity of any kind.

Discovery: predicting the future

Designers are taking ever greater account of our planet's valuable resources. They look over the shoulder of astrophysicists and investigate the properties of lunar rock and meteorites, the haptic qualities and dark strength of which are particularly fascinating. Observing the cosmos and the micro-cosmos, they come across dark, light-absorbent space black and stellar coruscation. Light plays a key role in this connection: it dazzles and illuminates, it sketches and plays tricks with the eye.

Memory: reflection and re-evaluation

People strive for a simpler, purer and more ethically correct way of modern life: away from consumption stress and rigid must-haves – towards favourites and a genuine feeling of well-being. The materials that decorate life together in the home will be honest, useful fabrics, e.g., denim, wool and linen. Familiar patterns stimulate the capacity for recall. Tomorrow's designers will combine handicrafts and tradition with an innovative sense for modernity whereby their software abilities are an additional benefit.

Thus, handicrafts and technology can join forces to create new, timeless values.

Trend Spots for wall (3.1), sun (5.1) and retail (11.1)

Selected design aspects from the 'Theme Park' will be integrated into other exhibition halls in the form of Trend Spots. For example, there will be a presentation on the subject of 'walls' in Hall 3.1 showing exemplary applications for the wallpaper product group.

In Hall 5.1, a Trend Spot revolving around the 'sun' will show the impact the trend forecasts for 2015/2016 could have on the choice and presentation of sun-protection products. In Hall 11.1, the retail trade will find valuable inspiration and examples for implementing the trend themes tailored especially to their requirements.

'New & Next': spotlighting young design

As at past events, the 2015 edition of 'New & Next' will reveal the creative design ideas of the coming generation. For the first time at the coming fair, however, this special presentation by start-ups and young designers will transcend the household textiles segment and embrace all Heimtextil product groups.

The participants will include highly promising labels such as bb&dd from Tunisia, Maison des Dunes from Morocco, Sirftex from Portugal, Udden from Slovenia and von Erika from Germany. All are characterised by especially creative designs that, in many cases, are based on sustainable company concepts.

‘Green Village’: the centre of sustainability expertise

For the first time, there will be a special platform for label issuers, certifiers and interest groups from the sustainability field. Heimtextil has been taking account of the on-going trend towards sustainable and fairly produced home, household and contract textiles for many years. Now, with the ‘Green Village’ in Galleria 1, it goes a step further and is adding a meeting place where visitors can gather information to the existing features. Moreover, they will also be able to obtain professional advice on the subject of sustainability. On the Friday of the fair, the ‘Green Village’ will offer a programme of lectures on environmental issues and be the starting point for a ‘Green Tour’ during which participants will have the opportunity to make contact with companies operating with sustainable policies. Besides the ‘Green Village’, the Heimtextil offers a practical orientation aid for visitors looking for exhibitors with sustainable corporate policies: the ‘Green Directory’.

Young Creations Award: Upcycling 2015 open to young designers from all over Europe

The subject of sustainability is also a firmly-established part of the ‘Young Creations Award: Upcycling’ competition, which opens to young designers from all over Europe for the first time in 2015. The award goes to the best works submitted by young international designers and spotlights the subjects of textiles, sustainability and design. This time, the focus will be more than ever before on the textile character of the projects. Thus, the rules now stipulate that textiles must account for at least 30 percent of the materials employed. In distinction to recycling, the aim of upcycling is to create higher-grade products using waste materials.

With the competition, Heimtextil not only helps young designers but also reflects an innovative trend in the interior field that reveals unused potential for sustainable material procurement and production. A selection of the most creative interior-design products will be on show in Hall 4.2.

Webchance Academy 2.0

In a series of practically based lectures, Heimtextil will pick up on a crucial theme for the sector – that of online retail and marketing.

Within the framework of the ‚Webchance Academy', the trade fair will provide information on successfully advertising and selling on the internet. The talks are aimed particularly at retailers and interior furnishings specialists. On the Wednesday of the show, 14 January 2015, e-commerce experts will give lectures on current developments in online marketing, present practical examples and provide helpful suggestions for implementing the ideas in visitors' own businesses.

Online retail sales are at a record level: in 2014, in Germany, they crossed the 40-billion euro mark for the first time and the proportion of total retail sales is apparently set to grow to over 9 percent. „The issue is one of increasing importance for the home-textiles sector too. With the ‚Webchance Academy', we should like to provide a stimulus for the high-street retail trade and to point the way towards new sales opportunities for our visitors," says Meike Kern, Director of Heimtextil at Messe Frankfurt.

Web success stories of established retailers

The „Lecture Square" in Galleria 1 will provide valuable information both for newcomers to the world of e-commerce and to interior furnishings experts and retail traders with previous knowledge and experience of the subject. From 11 a.m. to 5 p.m., the programme will provide both basic knowledge and more advanced topics.

The lecture series will throw the spotlight on various e-commerce solutions, the basic principles of modern online marketing, potential legal stumbling blocks and the success stories of established retailers who make use of the web.

Wieland Junge, Managing Director of Maritimia, will be providing a report on a specific practical example in his talk on „The introduction and establishment of an online shop – from idea to implementation". In it, he will devote some time to the choice of products, as well as questions of marketing, technology and the costs involved, particularly in terms of time and effort. Olaf Kolbrück, Editor-in-Chief of etailment.de, from the specialist publishing house, Deutscher Fachverlag, will talk on „The online market as a factor of success" and will give helpful advice on successful advertising via the internet – using e-mail, social media, mobile phones and the like.

Mobile applications also fall within the purview of the lecture to be given by Florian Gmeinwieser, Head of Mobile at the Plan.net Group. He will provide an introduction to the concept of „Beacons - the new and very promising way forward offered by the use of smartphones".

DOMOTEX 2015 – Both a global showcase and a trend barometer

The gates are opening on DOMOTEX 2015 from 17 to 20 January, when some 1,300 exhibitors from more than 60 countries will be showcasing their product innovations and collections for the coming season at the world's leading trade fair for carpets and floor coverings in Hannover, Germany. Visitors can look forward to a highly international and innovative event. As a global meeting place and driving force behind the industry, DOMOTEX 2015 is guaranteed to provide fresh impetus and generate business. With Innovations@DOMOTEX, DOMOTEX offers a unique showcase to highlight selected innovations in a concise and targeted way.

In 2015 the trade fair is expanding its successful concept and will for the first time also feature innovations in applications and installation technology. These will be showcased in one of the three special display areas, which will also include textile and resilient floor coverings, parquet and laminate flooring, as well as modern hand-made rugs and carpets. In addition, internationally renowned architects and designers such as Stefan Diez, Ross Lovegrove and Roberto Palomba will be discussing the latest developments and applications in the flooring sector at the Innovations@DOMOTEX Talks.

"In terms of the breadth and diversity of products, innovations and trends, there is no alternative to DOMOTEX. It is both a global trend barometer and a showcase," says Dr Jochen Köckler, Member of the Managing Board at Deutsche Messe in Hannover. Nowhere else do so many foreign trade visitors from the retail and wholesale trades, skilled trades, architecture and interior design come to find out about new products and trends in the industry. More than 90 percent of these visitors are involved in their companies' purchasing decisions.

The world's leading suppliers of floor coverings will be represented at DOMOTEX in January, with more than 85 percent of the companies coming from outside Germany. Exhibitors at DOMOTEX show products and innovations ranging from textile and resilient floor coverings for the residential and commercial sectors to rugs, carpets, parquet and laminate flooring and floor coverings for outdoor areas as well as installation, maintenance and application techniques.

Following its successful debut this year, Innovations@DOMOTEX will be back for a second time in January 2015. “The concept of providing visitors with more orientation, which significantly helps to initiate business contacts at the exhibitors’ stands, has been well received by the industry,” says Köckler. The coming year will also see innovations in applications and installation technology featured in one of the three special exhibition areas for the first time.

On 5 November 2014, a jury of ten chaired by internationally renowned industrial designer Stefan Diez will be selecting the best ideas from those submitted.

Berlin architectural firm Matter puts innovations center stage

Headed by André Schmidt, Berlin-based architectural firm Matter is responsible for the creative presentation of the innovations in the three special display areas. Schmidt has developed a customized design for each Innovations@DOMOTEX area relating to the particular qualities of the product categories in halls 6, 9 and 17. As a central meeting place and highlight of the trade fair, the areas provide an inspiring overview of the product innovations and their design options.

Special guests: top designers Stefan Diez, Ross Lovegrove, Roberto Palomba

A series of presentations and discussion forums complete the program. With the focus increasingly shifting towards the design of striking floors, internationally renowned architects, interior designers, planners and designers such as Stefan Diez, Roberto Palomba and Ross Lovegrove will discuss tomorrow’s trends and the effects on their work at the Innovations@DOMOTEX Talks in Hall 6. In addition, architects and designers participating in the presentation program will lead visitors on Guided Tours from the special areas to the exhibitors’ stands.

Meeting-place for the avant-garde from the world of carpets

Handmade carpets – whether traditional, modern or antique – add charm and a touch of luxury to the home. The sheer diversity of materials, patterns and colours available is a source of inspiration for new product designs and collections. DOMOTEX in Hannover, Germany, which runs from 17 to 20 January 2015, will span both traditional and modern carpet design to offer the world’s biggest display of handmade carpets.

The elite of the carpet design community roll out their best creations

Designers are creating some excitingly modern, original and even futuristic designs that contrast beautifully with the fresh, minimalist style that prevails in modern homes. However there is still keen demand for new interpretations of traditional patterns. Hall 17 of the Hannover venue will be occupied by the elite of carpet design, including Floor to Heaven, Jan Kath Design, Makalu, Obetee, Reuber Henning, Hossein Rezvani, Rug Star, Wool & Silk Rugs and Zollanvari. They will be joined by new suppliers in this display segment – for example, Ayka, Chevalier and New Moon – all keen to prove their expertise.

Carpet Design Awards now with Innovations@DOMOTEX

For the past ten years, the best and most original artisan carpets have been celebrated by the internationally renowned competition Carpet Design Awards. Now, in line with a new concept that takes effect as from DOMOTEX 2015, Carpet Design Awards will be featured together with Innovations@DOMOTEX in Hall 17 to create a hub for new, interestingly designed handmade carpets.

Bringing these two events together under one roof will offer exhibitors additional opportunities for the presentation of their products and for communicating the quality of these products to a trade audience. Quality and innovativeness will become an even more striking focal point.

Jury member top designer Michael Sodeau

The jury of international professionals from the design community and the carpet industry select the three best products on the basis of eight criteria: design, design concept, materials, realization and production, structure, quality, sustainability and brand identity. Chairman of the jury is Michael Sodeau of the Michael Sodeau Partnership. Top designer and Londoner, Sodeau is a winner of the Red Dot Award.

“As a designer I like to work across all facets of the industry and have designed rugs, furniture, products, lamps, interiors and exhibitions. For me rugs pose one of the hardest challenges as a designer, as you are so intrinsically linked with the artisan/producer.

Their interpretation of your design, and the process of weaving and knotting are unique. This is why a show like Domotex and the Carpet Design Awards is so exciting, you’re never sure what you are going to see”, says Michael Sodeau.

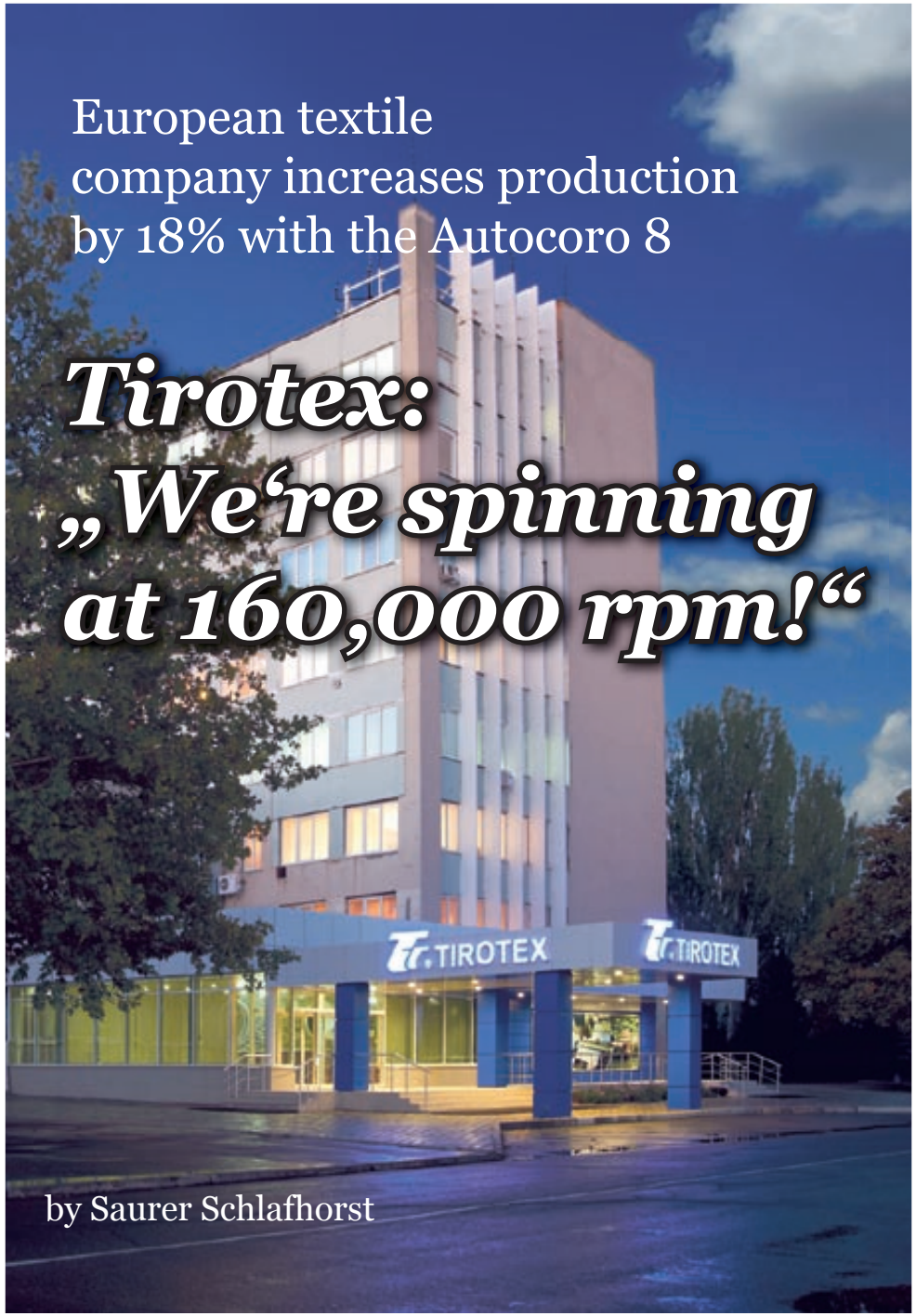
The jury also includes Jochen Ehresmann, carpet specialist from the famous Munich furnishing store Böhmler, the American author and design journalist Linda O'Keeffe, who also writes for the New York Observer, and Michael Pourvakil from Weavers Art, Toronto. Pourvakil is one of the leading pundits in Canada's carpet industry and boasts specialist knowledge of dealers in high-quality handmade carpets. The final jury member is the design and lifestyle expert Ross Urwin, founder and creative director of Infrastructure in Hong Kong. The 24 carpets of the finalists will be exhibited in a special section of Innovations@DOMOTEX area in Hall 17. The winners of each category will receive their award during DOMOTEX on Sunday, 18 January 2015.

The categories of the Carpet Design Awards:	
01	Best Studio Artist Design
02	Best Modern Design Superior
03	Best Modern Design Deluxe
04	Best Traditional Design
05	Best Transitional Design
06	Best Modern Collection
07	Best Traditional Collection
08	Best Innovation

Traditional carpets for sophisticated homes

At DOMOTEX exhibitors encounter keen interest in the historic patterns of traditional Oriental carpets. In fact, handmade Oriental carpets are currently experiencing a renaissance. The characteristically intricate patterns and warm colour palette are back in fashion. These masterpieces of craft and design not only match antique furniture – they can also look perfect set against traditional or highly modern furnishings and interior styles. Traditional carpet designs dominate in halls 15 and 16, while antique carpets will be showcased in Hall 14.

They all have their own unique history and are appreciated as beautiful and precious works of art that fit well into contemporary home interiors. In short, trade visitors can look forward to an amazing array of rare and precious handcrafted items.



European textile company increases production by 18% with the Autocoro 8

Tirotex: „We're spinning at 160,000 rpm!"

by Saurer Schlafhorst

Tirotex, Europe's biggest textile company, has succeeded in overturning the practical limit on rotor spinning of 150,000 rpm that has been insurmountable for over 20 years.

On its Autocoro 8 rotor spinning machines from Schlafhorst, Tirotex is spinning high-quality weaving yarns for its own weaving mill at a rotor speed of 160,000 rpm. This has been made possible by the innovative singledrive technology of the Autocoro 8, which has smashed all the previously applicable productivity barriers.

Over 200 million square metres of wovens for the global market

The Tirotex textile company was established in Tiraspol, Moldova, in 1972. It is a vertically integrated manufacturer with a huge industrial complex that has a sophisticated infrastructure and its own power plant.

The complex boasts its own spinning and weaving mills, dye shops, finishing plants and sewing lines employing over 3,200 people in all. Tirotex has invested consistently in innovative European textile machinery. The majority of its machines, which assume a key role in relation to quality and productivity, originate in Germany.

The overall area of the production halls is equivalent to the size of 58 football pitches. With an annual output of over 200 million square metres of finished fabrics and wovens, Tirotex is one of the biggest textile companies in Europe.

It is export-oriented, manufacturing underwear and home textiles such as bedding, tablecloths, furnishing fabrics and curtains for the global market. Tirotex supplies dyed and printed fabrics made from 100% cotton or polyester-cotton blends. The attributes of its wovens meet every customer requirement: they are resistant to water, oil, dust and stains, and do not crease, pill or shrink. The company spins all the yarns for its fabrics. Tirotex operates 27 Autocoro rotor spinning machines from Schlafhorst. Each year it processes more than 17,000 tonnes of cotton, primarily from Uzbekistan and Tadzhikistan.

Autonomous individual spinning positions facilitate huge productivity increases of 18% and more

In the layout of its spinning mill, maximum productivity and a guaranteed yarn quality for downstream processing in the weaving mill are the defining objectives for Tirotex, and so the company has been investing for years in highly productive rotor spinning machines from Schlafhorst. With the new Autocoro 8 Tirotex has now smashed the seemingly unassailable barrier of 150,000 rpm and has thereby increased its production by 18%.

„The limit now only exists in the mind“

For over 20 years, the maximum rotor speed of 150,000 rpm was regarded as the ceiling for rotor spinning, both in practice and with regard to the technology. There were good reasons for this in practice: higher rotor speeds can result in more yarn breaks, which reduce machine productivity. The time-consuming piecing process by the travelling piecing units with their long, unproductive travelling times nullify any increase in productivity on conventional rotor spinning machines. The belt drive also comes up against a physical limit – its design means that its running precision declines at higher speeds and on longer machines. Greater wear and quality loss are the consequences. And finally, energy consumption explodes on conventional rotor spinning machines as the speed rises – an absolute no-go issue in times of escalating energy costs.

The Autocoro 8 with its revolutionary single-drive technology smashes these limits. Technically the innovative rotor spinning machine is designed for rotor speeds of 200,000 rpm.

„The practical limit of 150,000 rpm now only exists in the mind," says Andrey Mezhinskiy, general director of Tirotex. „Schlafhorst long since overcame the barrier with the Autocoro 8. But no-one throws out overnight a rule that has applied for over 20 years. Neither do we. Many factors come together in practice. Various key indicators should be heeded if one wishes to increase profitability and efficiency in a sustainable manner: raw materials, energy, quality. We naturally want to increase the productivity of our spinning mill, but not at any price. We have set quality standards for yarn strength, yarn elongation and yarn uniformity that must be adhered to. With the Autocoro 8's predecessor, the Autocoro 480, we produced medium-count weaving yarns at 135,000 rpm. With the Autocoro 8 we have finally been able to crack the 150,000 rpm barrier on a daily basis. For example, we are now spinning a weaving yarn with a count of Nm 34 at 160,000 rpm."

High-speed yarn of premium quality

The results that Tirotex achieves in daily production with the Autocoro 8 are attention-grabbing: 18% more yarn with a yarn strength and elongation that are above the minimum requirements of the company's own weaving mill and below the 25% characteristic line of Uster Statistics. High-speed yarn of premium quality! The specific energy requirement per kilogram of yarn is less than 1 kWh – a value that is the stuff of dreams in the case of conventional, belt-driven machines, even at much lower rotor speeds.

Revolutionary individual spinning position technology

Schlafhorst succeeded in making the breakthrough to new high-speed dimensions with a groundbreaking new machine concept. Restricting central drives were replaced on the Autocoro 8 by single-motor drives and intelligent software. Each spinning position is a production unit in itself, with autonomous spinning and winding processes.

The general director of Tirotex, Andrey Mezhinskiy, is thrilled with the new Autocoro 8.

The piecing process was integrated completely into the individual spinning position, dramatically shortening piecing processes in the case of yarn breaks and on machine start-up. Frictionless magnetic rotor drives guarantee absolute reliability and safety at all speeds. Schlafhorst has thus eliminated the limits that have restricted rotor spinning for over 20 years and has opened up new prospects for the industry.

Pioneer with ambitious goals

Tirotex has certainly not broken the 150,000 rpm barrier early in continuous operation by chance. The company is a longstanding customer of Schlafhorst with many years of experience in rotor spinning. Added to this is the fact that Tirotex not only tests the quality of the yarns in its own textile laboratory, but also processes the yarns itself in its own weaving and knitting mills, and thus has ample opportunity for quality control.

„Perhaps this is why we are a little bolder and have tackled the limit sooner than others," says Andrey Mezhinskiy. „We would spot quality problems in the weaving mill immediately." Tirotex regards the stage it has reached merely as an intermediate step, because 160,000 rpm is far from the limit. „Following the success achieved with the Nm 34 yarn count, we will increase the speeds for other yarns too at a controlled rate and test the new potential of the Autocoro 8 continuously," says Andrey Mezhinskiy.

Tirotex is pursuing ambitious goals. „We are also investing specifically in productivity and efficiency in the next few years to be able to expand further in the global market in the future." For Tirotex it is obvious that only the Autocoro 8 comes into question for this expansion in the spinning mill.

Tirotex's impressive industrial complex in Tiraspol, Moldova.

New air-jet technology for the label market

by Jakob Müller

Labels produced on the MÜJET® MBJL6, which have been cut with the MÜSONIC2 ultrasound cutting machine

At ITMA Asia, which took place in Shanghai from 16-20 June 2014, Jakob Müller AG introduced its new MÜJET® MBJL6 air-jet label weaving machine. With a speed of 950 min-1 and a working width of 1,200 mm, the MBJL6 facilitates the efficient production of labels, images and technical narrow fabrics with cut selvedges. The machine presented at the fair was for taffeta qualities with 54.6 warp threads per cm.

The robust and compact design of the MÜJET® MBJL6 1/1380 is ideally suited for top production performance and offers proven Müller quality (Image 1). Its simple, clear design allows easy access to all the important machine components and control elements. Moreover, the MÜJET® MBJL6 represents the systematic further development of the MBJL machine series and also employs tried-and-tested elements from the MÜ-GRIP® MBJ6 rapier loom.

Functional components for top weaving quality

In comparison with its predecessor model, the working width of the MÜJET® MBJL6 has been increased to 1,200 mm. Furthermore, a significantly higher production capacity has been achieved thanks to a reed width of 1,380 mm and a speed of 950 min-1. Shedding takes place using an electronically controlled SPE3 1536 jacquard machine with patented bottom shed read-in (Image 2). The jacquard machine is mounted directly on top of the basic machine, reducing the space required to a minimum. Additional advantages include a machine height of 3.65 m and its low weight. The new air-jet weaving machine can manufacture more labels per hour in a production area of only 2.05 m by 4.25 m and a reduced building volume.

High cost efficiency

Straightforward machine programming, great label production flexibility, short resetting times and minimum maintenance requirements guarantee high cost efficiency. The careful handling of the warp and weft material during production allows for top speeds and optimum efficiency. The MBJL6 is outfitted with MÜCAN controls and various production conditions can be easily entered using a MÜDATA C-series touch screen (Image 3). Furthermore, the machine speed can be quickly and easily adjusted for every pick with the VARISPEED system.

The warp is provided on a warp beam with a maximum diameter of 800 mm. A controlled warp let-off system with a servomotor ensures quick and simple setting of warp thread tension.

Weft insertion

Weft insertion on the MÜJET® MBJL6 takes place using standard main, acceleration and relay nozzles. The main nozzle is designed for the insertion of eight weft threads (Image 4). To remove threads from the weft bobbins, Jakob Müller AG recommends the ROJ Super Elf G2 weft thread storage system with layer separation and integrated thread monitoring. The arrangement of the weft colours can be adjusted using the “replacement and change” function. Apart from the individual regulation of air pressure, the retention air can be switched on and off separately, which provides a significant reduction in air consumption. Optimising the relay nozzle positioning has also resulted in a further improvement to the overall weft insertion system.

The compressed air system now consists of two air circulation loops, which can be used to individually adjust the left- and right-hand sections of the relay nozzles. This ensures stable and gentle weft insertion even at a machine speed of 950 min-1. Air consumption is around 60 m3/h to 75 m3/h (four to eight colours) and the installed air volume totals 80 m3/h. The machine requires feed pressure of 800 kPa (8 bar).

The number of weft threads per centimetre can be quickly and easily adjusted via a torque motor using the VARIPICK system. This electronically controlled fabric take-off allows the number of weft threads within a repeat to be varied between 18 picks per cm and 120 picks per cm. There is growing demand in label weaving for special effects and in particular in the production of labels for high-quality products. The MÜJET® MBJL6 can process a wide selection of weft materials such as textured PES, untwisted, reinforced Lurex from 30 dtex to 250 dtex and other fancy yarns.

The cutting system

An important criterion for label quality is the cut edge. Labels with sharp edges are caused by temperature fluctuations in the cutting elements and often irritate the skin of the wearer. As such, they are frequently removed from the clothing. The MÜJET® MBJL6 is fitted with the TC2 cutting system (Image 5). This ensures uniform cut quality with up to 120 cutting elements. Moreover, if desired, a second cutting beam can be employed when narrow labels with widths of 6 mm to 8 mm are to be manufactured. A further option is provided by the cableless TVT2 cutting system, which enables the creation of even softer cut edges.

For high-quality labels (Image 6), Jakob Müller AG offers its MÜSONIC2 ultrasound label cutting machine. In a separate step, this machine cuts the precut blank rolls on the label weaving machine to the desired width using ultrasound.

The patented edge compactor and infinitely adjustable pressing force ensure markedly finer edge quality, which can already be monitored during the cutting process.

Label programming

Like other Jakob Müller label weaving machines, the MÜJET® MBJL6 is programmed with MÜCAD pattern creation software, which is available in German, English, French, Spanish, Italian, Turkish and Chinese. The actual pattern creation process takes place once a motif has been selected. This involves pattern processing, the simulation of the woven product and translation into the control software of the jacquard machine.

Drafting and binding patterns are available for every textile product to ensure efficient operations. Having the option to define the bindings and backbindings for each weft sector as well as the input of any weave rules makes it possible to achieve markedly higher quality.

The MÜCAD base station can be supplemented with a variety of packages. MÜCAD DIGICOLOR is additional software for jacquard weaves produced using a digital weaving process. It allows for motifs to be realistically replicated in true colour by using five to seven weft colours to achieve natural colour effects. The MÜNUMBER-MASTER software package serves the production of individually woven, distinctive and forgery-proof labels with either consecutive or random numbering.

The specific data is already compiled during the design process to create a virtual label. Using an additional option, a visible bar code can be integrated into the label for mechanical scanning. Moreover, when used in combination with DIGICOLOR software, it is possible to integrate high-resolution, multi-coloured images. MÜBARCODE software is employed for the manufacture of labels with visible bar codes. This programme provides a large number of standard market codes, such as PDF 417, Data Matrix, and QR Code, which can be generated and then subsequently implemented in the label.

Summary

The MÜJET® MBJL6 was developed entirely in-house by Müller and is manufactured in Switzerland. Its high productivity and flexibility sets it apart from other machines on the market. A modern touch screen makes operating the machine is extremely simple. Compared to its predecessors, the MBJL6 requires significantly less air.

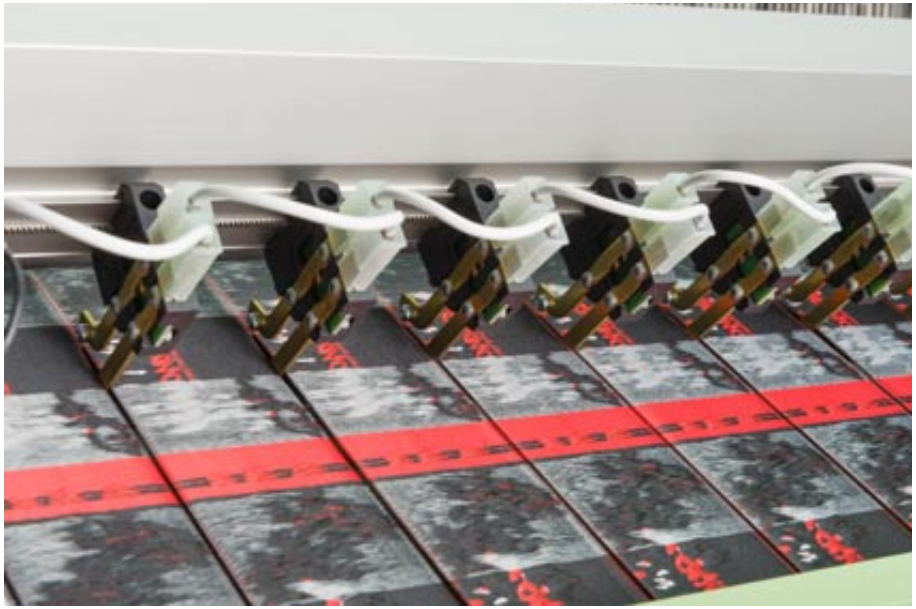
This reduction in consumption – made possible by a new nozzle configuration and the option of switching retention air on and off – enhance the value of the MÜJET® MBJL6 from both an economic and an ecological standpoint. Moreover, during the design process, special focus was placed on reducing in the number of wear parts and this results directly in lower expenditure on spare parts.

As with all other Müller Group products, Jakob Müller AG offers a global customer service network staffed by experienced technicians for the MÜJET® MBJL6. These specialists are stationed at centres around the world, many of which also possess comprehensive stocks of spare parts thus enabling quick delivery in an emergency.

Thermal image of the vessel with regulation

The main nozzles, which are designed for up to eight weft colours

The SPE series jacquard machine



The TC2 cutting system for uniform cut quality

The C-series MÜDATA touch screen

Successful upgrade of the soft-TRD series

by Thies Textilmaschinen

The range of uses for synthetic fibres continues to grow: for instance, man-made fibres are used for the production of functional clothing or technical textiles. Technical textiles are used, for example, in the fields of automotive industry, agriculture, in medical and health technology, and also in the construction industry (buildings and infrastructure).

Innovations and new application functionality – especially in the field of technical textiles – present the dye houses with ever greater challenges, as these fibres and the resulting materials have to be made and processed according to very specific requirements. Universal equipment and machinery is therefore required to allow a flexible reaction to constantly changing market demands. For decades, the soft-TRD series developed by THIES has offered customers successful processing options for a broad range of applications: the long chambers and the intensive penetration zone of the transport pipe of this series ensure maximum qualities and reproducibility. The soft-TRD series has been redesigned and upgraded with the aim of offering resource-saving technology with even greater energy efficiency. This benefits users in a number of ways.

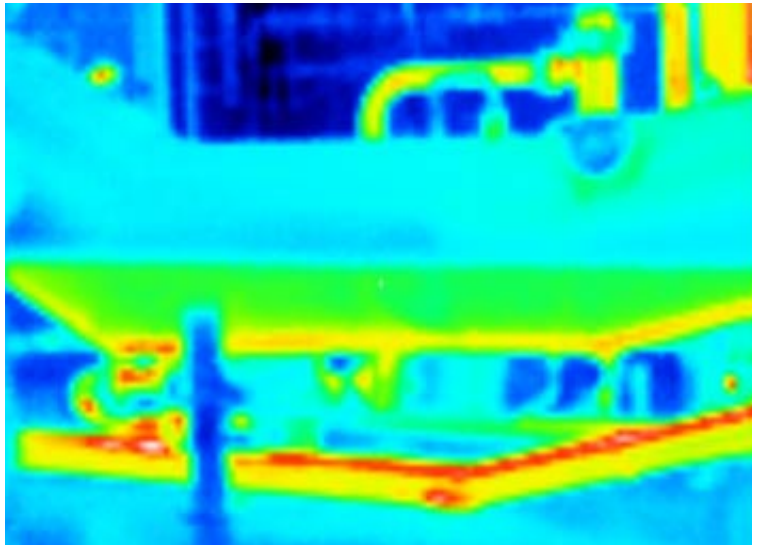
High water consumption, which leads to an excessive use of chemicals, electricity and thermal energy, can be significantly reduced. The application engineers at THIES have succeeded in achieving liquor ratios of 1:4.5 for PES woven fabrics.

The dyeing vessel has been redesigned so that it no longer needs to be fully flooded during processing. The fill level is freely selectable and the fluid level can be adjusted according to the type and quantity of the textiles being used.

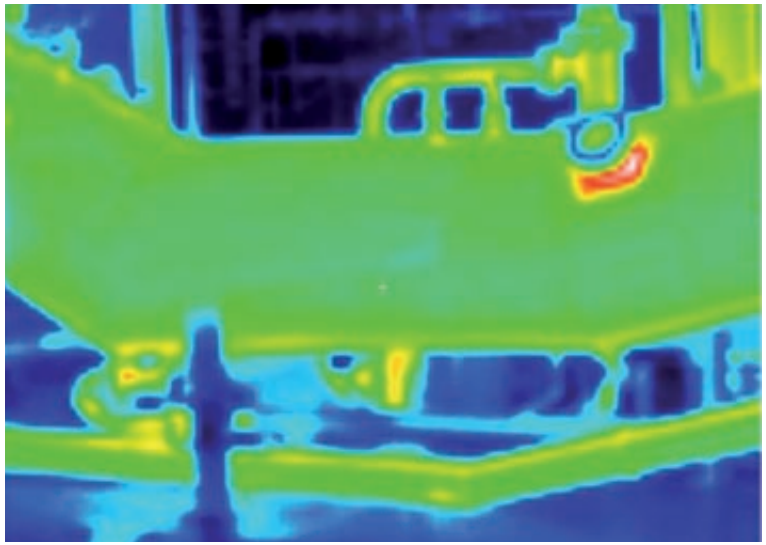
In partially filled systems, the temperature distribution is unfavourable as the liquid heated by the heat exchanger heats the textiles and also the dyeing vessel unevenly (Fig. 02). By using an intelligent vessel-wall temperature regulator, it is possible to achieve uniform and, more importantly, simultaneous heating of the product, the liquor and the vessel- wall (Fig. 03). This improved regulation can also help reduce the deposition of oligomers during polyester dyeing.

Items that are crease sensitive or have delicate surfaces can be treated gently at speeds of up to 600 m/min. The free material flow and the low-mounted intensive penetration zone of the transport pipe allow optimum relaxation, free shrinkage and a uniform treatment of the entire fabric rope in the chamber. The intensive penetration zone of the transport pipe has also been redesigned, avoiding excessive twisting of the rope. An automatically adjustable vario-nozzle provides additional flexibility as numerous articles can be successfully treated.

The soft-TRD SIII is designed for operating temperatures of up to 140°C. Thanks to the new integrated vessel pressure regulation, the use of compressed air has been significantly reduced. The liquor can be drained at a temperature of less 92°C.



Thermal image of the vessel without regulation



Thermal image of the vessel with regulation

The nominal load of the soft-TRD SIII is 100 kg, 150 kg and 200 kg per chamber. The modular design makes it possible to combine up to 4 chambers. Individual chambers can be locked off if required. This allows the processing of custom batch sizes. The drive reel has a reduced take-off height. This is particularly beneficial when treating items with a large elastic fibre content.

The continuous analysis and monitoring of the transport reel identifies stoppages immediately and reliably. The drive is stopped automatically within a second if required. The reverse drive makes it possible to remove knots and the process is then resumed automatically. This prevents abrasion and the quality of the finishing process is assured.

Chemicals, dyes and textile auxiliaries are used during the finishing of various types of materials. The soft-TRD SIII is equipped with two side- tanks: one for powdered chemicals and one for liquids. Powdered chemicals can be directly added without the need for time-consuming pre-solution of the treatment liquor in the dyeing vessel. This is because the soft-TRD SIII is equipped with an injector. One side- tank is used for dissolving and dosing of liquid chemicals and textile auxiliaries, as well as dyes. These agents are diluted with liquid from the dyeing vessel in accordance with the guideline parameters and directed into the plant. The side tanks and the dyeing vessel are connected with the preparation tank. It is possible to prepare complete treatment baths and preheat them to the required temperature. Bath changes can then be carried out without wasting time.

A self-cleaning automatic filtration system has been installed in the circulation line to ensure permanent cleaning of the liquor. Fibre residues, threads and impurities are filtered out to reduce the risk of blockages in the liquor nozzle. An uniform nozzle pressure during the entire duration of treatment is ensured. The filter is also automatically cleaned after every programmed drainage process. Time-consuming manual changing and cleaning of the filter basket is thus no longer required. A spray system is integrated for optimum cleaning of the interior of the vessel. The use of this spray system during every drainage process ensure a good bath separation.

The soft-TRD SIII is equipped with a water meter to measure the consumption data. Measuring devices for electric and heat energy can be bought in addition. To keep a closer control over actual usage, the soft-TRD SIII can be fitted with measuring instruments for water quantity measurement and for measuring electricity and heat energy consumption, if required. The evaluation of the consumption can be seen directly on the machine controls or be viewed on the parent system. All machine and process parameters are displayed and logged online. The archived batch logs can also be displayed. Any possible faults or (manual) interventions are also logged and evaluated here. The new THIES soft-TRD SIII is suitable for a wide range of textiles including multi-filament textiles, high-density products, mixed fabrics with varying elastane and polyester contents. In addition, high-quality woollen items can also be treated. The treated woven and knitted fabrics as well as non-woven textiles are characterised by their soft, voluminous feel.

The latest developments in the CPB dyeing process

(cold pad batch process)

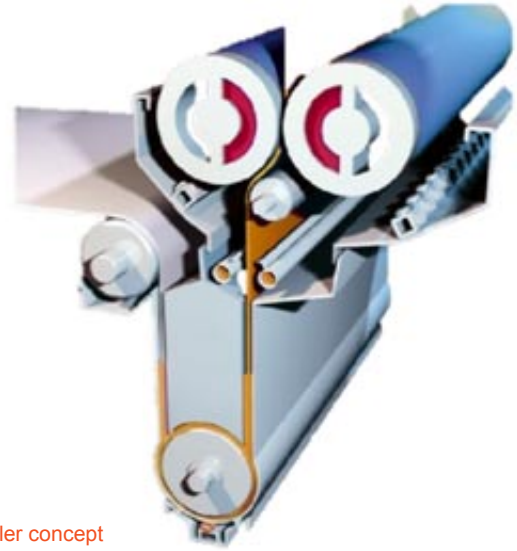
by Benninger

The Küsters S-roller technology is now a recognised brand and stands for a safe, reproducible dyeing method, the CPB cold, pad, batch process. The CPB process is becoming increasingly important, as it can be used to dye both short and long yardages of woven and knitted fabric very economically. The initial scepticism towards a new technology is becoming overcome with time due to the positive experiences made in industrial practice with an established technology. The new Küsters S-roller technology with the very latest technical features combined with modern control equipment and electronics supplied by the BENNINGER AG mechanical engineering division provides the technical process conditions that are expected of such a process today.

Küsters CPB dyeing station

Dyeing is a very complex process and influenced by a number of parameters. Dyeing results are now not only gauged by visual assessment, and technical measuring instruments that can determine these results accurately and precisely have also become established in customer circles. In addition, correction of dyeing faults is time-consuming and expensive. Furthermore, ecological sustainability demands are constantly rising, especially with regard to the consumption of natural resources, and are increasingly becoming a cost factor that affects decisions. CPB dyeing with reactive dyes is a cost-effective process with a very high level of reproducibility.

Impregnation in the padder is the most important part of CPB dyeing. This is where the foundation stone for the dyeing results is laid. There are naturally also a number of other factors affecting the process that also require consideration but cannot be directly influenced by a plant engineer. On the surface the demand for an application system for forced application is relatively simple. It must be ensured that the dye can be equally and constantly applied across the entire width of the fabric after a short period of contact with the dye liquor. This is only possible if the squeezing pressure and the squeezing nip can be kept constant.



Küsters S-roller concept

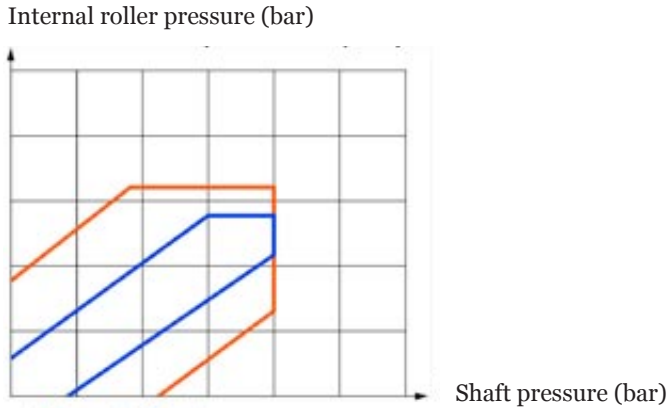
This task becomes complicated when the properties of the material to be dyed have to be included in calculations.

From a purely technical viewpoint, conditions are affected by different fibre and yarn thicknesses, absorbency, fabric tension, weft distortion, admission moisture content and liquor temperature, dye properties and errors such as dye migration at the selvedges during drying. For this reason the requirements to be met by an application system are complicated and can only be satisfied by the use of state-of-the-art control and instrumentation equipment. It is therefore necessary to deliberately control regular liquor application over the entire fabric width to correct the different influencing factors.

The new Küsters / Benninger S-roller technology ensures even liquor application over the entire fabric width as well as deliberately different liquor application in the „edge-centre-edge“ areas. With the integration of modern instrumentation and control this can be adjusted simply and in a reproducible manner or controlled and regulated as required. The new Küsters S-roller technology now offers new and extended correction potential.

The reproducibility is maximised by an electronic pressure system (patented) that ensures controllable line forces over the entire roller width. In addition, dyers have a higher level of flexibility that offers decisive advantages, especially when dyeing knitwear and stretch woven fabric. With the further development of a specific roller coating, the „Blue Nip“, it can be ensured that the necessary application conditions can be transferred to the dyed goods optimally and durably.

Correction diagram



- *Conventional deflection range*
- Nes deflection range

Higher-level technologies that ensure additional process safety from a technical viewpoint, such as tailing correction and the cleverly designed dosing system with the track-proven Contidos as well as the new four-circuit cooling and temperature management, enhance the ease of handling of the dyeing padder and its reproducibility. With computer-aided simulation the flow conditions at various speeds and with various fabric qualities were tested to prevent so-called dead zones in the dyeing trough, and resulted in the development of the „mini U-Flow“.

It was therefore possible to improve additional influencing factors to achieve optimum dyeing results, which also has positive effects on the dye consumption.

With the Telelink it is possible to transfer online optimisations from the Benninger AG competence centre to the system and check its efficiency at any time.

In summary it can be said that Benninger has succeeded in providing dyers with an intelligent dyeing machine by integrating the very latest electronic equipment into the further-developed Küsters S-roller technology. These offer a high level of reproducibility and flexibility.

The same dyeing results can be achieved with the same recipes, even after several years. Never before has it been possible to control or regulate so many dyeing parameters so accurately. Therefore the described advantages, especially in comparison with exhaust dyeing, that range from a significantly lower water consumption per kilo of dyed goods, very low electrolyte consumption, low tension and abrasion processes (no pilling, no enzyme treatment necessary) and therefore no weight loss, are not only perceived in the dyeing shop and in the quality of the textiles, but are becoming increasingly important from an economic viewpoint.

Küsters is an integrated brand name of Benninger AG in Uzwil, Switzerland.

Country Focus:

by Oliver Schmidt

Portugal

Following our Country Focus on the large markets of the USA, Mexico and South America in our series, in this issue we want to turn to look at a smaller country. We're talking Portugal. And not because of its size. It's a chain reaction that interests us here, because the growth of the EU is a very determining factor for the growth of the world economy, and the fortunes of Portugal, one of the crisis states, have clearly improved following the long recession.

Even more importantly, from the textile perspective, we want to examine whether Portugal is a textile country, or if it could become one. But firstly, here's some general information.

Portugal is a state in the southwest of Europe and lies on the west of the Iberian Peninsula with its only neighbouring country of Spain, which it borders to the north and the east, whilst also bordered to the west and the south by the Atlantic. With a surface area of 92,212 km_, the country is one of the smaller countries in Europe. Spain is five times larger, with a surface area of 504,645 km_. Its population is similarly small. Portugal has 10,602,000 inhabitants, a little more than Austria and a little less than Greece and Belgium, but much fewer than Spain, which has a population of 46,609,652. These figures prove that Portugal has a higher population density than Spain.

The biggest cities are the capital of Lisbon, which lies on a bay in the Tejo estuary in the extreme southwest of Europe on the Atlantic coast, with 545,245 inhabitants, and Porto (246,264), Amadora (179,486) and Braga (123,367). The most densely populated area is coastal strip from the Spanish border in the north down to the area around Lisbon. 70% of the population lives in this area, and the hinterland and the south of Portugal are sparsely inhabited. Over 10% of the population has settled in two cities (Lisbon and Porto), while more than half live in hamlets of under 2,000 inhabitants.

Portugal is a founder member of NATO (1949) and the OECD (1948), a member of the UN (since 1955), the Council of Europe (1976), and the Schengen Agreement (1991). Additionally, Portugal is one of the founder states of the Eurozone and was, in spite of the economic impetus at the end of the 20th century, the poorest old member of the EU (joined in 1986). The financial crisis of 2007 and the resulting Eurocrisis caused a recession and socioeconomic problems in the country.

In the GDP ranking list of all IMF countries, Portugal is in 48th place with 212,139 million USD, just in front of Algeria and just behind Venezuela. According to IMF figures, the GDP per capita of the country was 25,643 USD in 2013. The World Bank reports this figure to be 25,900 USD. Portugal is in 42nd place in IMF statistics and achieves only 77% of the EU average.

Low competitiveness and industry drift towards cheaper labour in other locations exposed the vulnerability of Portugal‘s business development. Lack of growth meant that national, enterprise and private debt has risen steadily over the past few years. Lack of capital also means that Portugal‘s debt has increased abroad. Portugal has received financial assistance from the EU and the IMF since May 2011 as it was no longer able to finance itself in the capital market. Portugal received 3-year loans of a total of 78 billion Euros. The loan is repaid in tranches, based on quarterly progress reports following approval by the suitable committees.

In 2011 Portugal‘s economy shrank by about 1.7% and in 2012 by about 3.2%. However, since 2013 the worst of the recession seems to be over.
In the second quarter of 2013 the economy grew unexpectedly by about 1.1%. Experts from banks and economic institutes had forecast an end to the recession in the second quarter, but had reckoned with growth of much less than 1%.

This improved growth could not be sustained into the third quarter, but the economy still managed growth of about 0.2%, so that 2013 finished with an overall decline (-1.4%). Growth of 0.8% – 0.9% is forecast for 2014. In 2015 it is expected to rise by 1.3% and in 2016 by 1.7%. Thanks to rising exports the trade balance should become positive for the first time for 70 years in 2015. Portugal has a high unemployment rate of 14.5% in the current year, but this should be reduced to 12.8% by 2016. Additional problems are the public budget balance (-4.9% of GDP) and large public debt (127.7% of GDP).

Let‘s look at the economy. Since Portugal‘s entry into the EC in 1986, the country has developed an increasingly diversified economy in all sectors. Fisheries and agriculture now account for about 2.4% of the GDP, down from approximately 25% in 1960, while still employing 9.9% of the labor force. The industry sector accounts for 23.1% of the GDP and providing jobs for 24.2% of the working population. The major industries include: oil refineries, petrochemistry, cement production, automotive and ship industries, electrical (mainly from renewable sources) and electronics industries, machinery, pulp and paper industry, injection moulding, plastic products, textile, footwear, leather, furniture, ceramics, beverages and food industry and cork (leader producer). Automotive and other mechanical industries are primarily located in and around Setúbal, Porto, Lisbon, Aveiro, Braga, and Santarém. And now let‘s look at the textile industry. Textiles and clothing sectors have been a relevant part of the Portuguese manufacturing structure and foreign trade for a long time. For example, taken together, these two sectors represented 2.0 per cent of gross value added, 4.3 per cent of employment and 11.8 per cent of total manufacturing exports of the Portuguese economy in 2006. But let’ s start at the beginning. The trade liberalization resulting from EFTA strongly contributed to the expansion of the Portuguese textiles and clothing sectors, since its relatively labour-intensive nature matched the relatively labour-abundant factor endowment of the economy. As a result, the classical Balassa indexes for Portugal show a revealed comparative advantage in these sectors since the sixties. Portuguese accession to the European Economic Community (EEC) in 1986 and the implementation of the European Single Market in 1993 brought further liberalization in these sectors. Nevertheless, the EEC market was itself protected by the import quotas imposed under the Multi-Fibre Arrangement (MFA), giving the Portuguese exporters a competitive advantage in the European market.

This led to a rapid development of the textile and clothing industry in Portugal. According to Quadros de Pessoal, between 1982 and 2000 the number of clothing enterprises rose from approximately 2,000 to about 7,000 enterprises, and textile manufacturers rose from 2,000 to about 2,500. Then it decreased again and today there may be around 2,000 textile companies and between 4,000 and 5,000 clothing enterprises. This initially appears to show dynamic growth, but other figures show that it may have been a flash in the pan. The GVA textile share initially increased from 2.5% to 3.5%, and then quickly fell from 1986 to approximately 1%. Clothing increased, then declined at a rate of 1% to 1.5% in 1992, and then returned to around 1%.

The number of the people employed in these industries is also interesting. Here the proportion initially doubled in the clothing trade, from 3% to over 6% in 1990, then fell back to 3% up to 2006. Textile employment fell steadily from 8% to just 2%.

The share of textiles exports decreased from 19 per cent in 1982 to 8 per cent in 2006 and the share of clothing exports increased from 11 per cent in 1982 to 16 per cent in 1992, declining to 4 per cent in 2006. Therefore, at present, the clothing industry accounts for a larger share in total employment and number of firms, but a smaller share in GVA and exports than textiles. Taken together the share of textiles and clothing sectors in total manufacturing exports dropped from 30 per cent in 1980 to 12 per cent in 2006.

Today, textiles and clothing hardly feature in the export statistics and make up just 3-4% of all exports. Textile exports to the second-most important trading partner Germany, for example, amounted to 145,768,000€ in 2013, a ratio of only 1.1%, but this was an increase compared with the previous year‘s totals of 134,447,000€, about 8.4%. Similar values are found in the case of the clothing industry. Goods to the value of 63,527,000€ were exported to Germany in 2013, a deficit of 11.74% and only 1.05% of all exports.

Germany Trade & Invest writes in an analysis in May 2013: „In the past, new employment was created mainly in the tertiary sector. For this reason, the number of industrial workers sank by 15% as a result of structural changes which took place between 1998 and 2005, while the number of service sector employees increased by over 18%. It is generally considered that this development will not only continue, but intensify as a result of global changes. Employment in the industrial sector might decrease as a result of work spin-offs, company misalignments and enterprise closures in the course of comprehensive efficiency measures designed to further increase competitiveness. The sectors which are particularly affected by these trends are: Leather goods, textiles and electrical goods.“ But whether the future of the country lies purely in the service industry is unsure. Where could Portugal‘s chances lie with regard to its future as a textile country? One has to search hard, as all figures point generally in the other direction.

Let‘s start with a positive number. Textile imports for 2013. The Portuguese consultation company Jacoli, which specialises in textiles, gave detailed figures on their website in April. Portuguese textile industry exports rose 3.5% in 2013, compared to 2012, to 4 256 879 000€. The class that contributed the most was the home-textiles articles with a 9.3% raise, followed by other textiles with 3.4% and clothing with 2.1%. Within different categories, the most remarkable rise was the knitted fabrics (code 60) with 11.2% and other manufactured textiles (code 63) that rose 10.9%. On the other hand, the greatest decreases were for the silk articles (code 50) with 46% and other vegetable fibres (code 53) with 16.9%.

Other good news comes from a report by SRF (Swiss TV) which sees the future of the Portuguese textile industry in a positive light. They say: „Portugal had to prescribe a strict diet for itself: Savings, staff redundancies, wage cuts and tax increases. However, a lot functioned even in the crisis. New enterprises were founded and old ones re-organised. This has happened in one of the most traditional branches in the country with striking success: In the textile sector. Today it looks completely different than five or ten years ago. And many say, this is only the beginning.“

Light growth and basic modernisation are certainly steps in the right direction, however, they are certainly not sufficient. One has to consider some long-term factors in a future analysis.

Portugal has low wages when compared to European countries, and above all in Western Europe. In addition, Lisbon is in a very good geographical situation as a seaport with regard to Asia, and very short routes to other important European ports. The country itself, as well as the European Union, will see the future of Portugal not only in the agricultural and service industries. The spiral of decreasing industry must be stopped and new, modern industries created if Portugal is not to become a European problem child. Why not promote the textile industry which experienced a boom in the country in the beginning of the 60s? Wages are rising worldwide and even if Portugal has here clear disadvantages compared with Asian and African countries, the location advantage could compensate this in the medium term.

These days, nearshoring, i.e. the restoration of work outsourced to the Far East back to Europe, is a worthwhile trend. Deutsche Welle published a report in an article in March with the title, „Is Portugal soon to become the „India of Europe“?“, with multinational enterprises setting up call centres and service hotlines there. They would profit not only from the linguistic proficiency of the Portuguese and the high unemployment, but also from the low wages. The average salary for a university graduate in Portugal is only about 600 Euros per month. Particularly for fast fashion; the quick conversion of a clothing idea into a product which is available in a short time, requires spatial proximity as an important condition. It is a matter of organising a short supply chain. However, a container from Shanghai to Hamburg requires over one month and this is a long time. The following quotation is from Zara and Inditex founder Amancio Ortega: „Flogging fashion is like selling fish. Fresh fish, like a freshly cut jacket in the latest colour, sells quickly and at a high price. Yesterday‘s catch must be discounted and may not sell at all.”

Zara is known as an inventor and, together with competitor H&M, as a market leader in the area of fast fashion and sources just over half of its products from Spain, Portugal and Morocco. This costs more. But because its supply chain is short, Inditex can react quickly to new trends. Instead of betting on tomorrow‘s hot look, Zara can wait to see what customers are actually buying—and make that. While others are stuck with unwanted stock, Inditex sells at full prices and sales have quadrupled to €13.8 billion ($19.1 billion) since the firm‘s initial public offering in 2001.

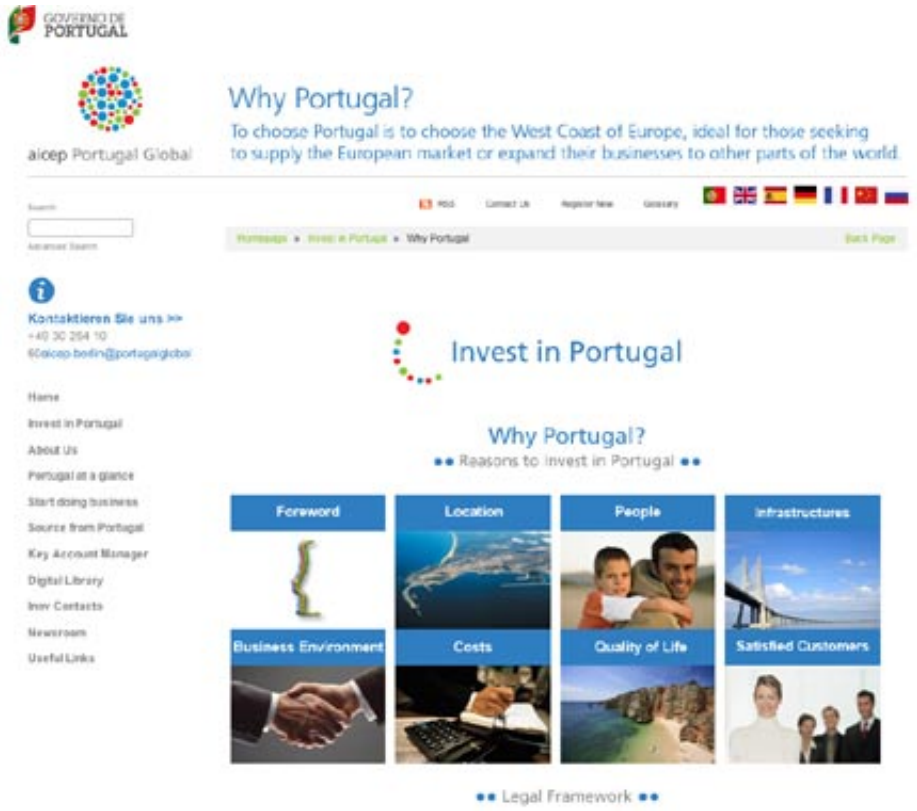
Fast fashion could become a value driver for the textile industry of Portugal.

We haven‘t yet dealt with the aspect of sustainable production. This concerns wages, terms of employment, resource protection and the protection of the environment. With regard to sustainability, a European country has clear advantages compared with the competition in Asia and Africa on account of the laws and controls imposed. Should the importance of sustainability continue to increase from the consumer‘s side, it would be another plus for Europe and also for Portugal.

These were a few arguments in favour of Portugal. To help the textile industry in Portugal to shine anew, all of the developments cited here must progress significantly, and important players must identify Portugal as a central solution. This includes assistance from the European Union which, since the crisis, has been required to develop visions and support member states. Only with the help of aid programmes and considerable investment incentives can growth rates improve, helping to make Portugal‘s fairly insignificant textile industry profitable again.

And Portugal would really like that. On the web page portugalglobal.pt, operated by aicep Portugal Worldwide - Trade & Investment Agency, a government business entity created in 2007, is a position paper with the title, „Investing in Portugal - Textile and Clothing Industry“, dated 2013, which recommends the advantages of large investment in these industries in Portugal.

Let’ s hope that Mr. Jean-Claude Juncker has visited the website, because it could be an intelligent plan for the EU Commission President, to spend some money of his 315 billion investment package for the textile industry of Portugal.



http://www.portugalglobal.pt/EN/InvestInPortugal/WhyPortugal/Pages/whyportugal.aspx

A reasonable price and stability with overpressure

ITV Denkendorf und Bionic Composites GmbH develop new material for surfboards

In the field of sandwich technology, Bionic Composites GmbH has patented an astonishing and expandable bionic idea and has, as an initial demonstrator, created this in the form of a surfboard. The idea is based on the principle that the foam core is subject to overpressure. In addition, dovetailing technologies are used for a close connection of a variety of materials.

The new Hydroflex technology is based on two part developments; on the one hand, a three-dimensional, specially designed top layer laminate, and on the other hand, a foam core or sandwich component which remains form-stable under overpressure.

These technologies have been closely examined at the Institute of Textile Technology and Process Engineering because both procedures are economically viable. In addition, they have a very large market potential. They can be used in the entire lightweight construction area in a huge number of individual sectors. This technology is currently used in surfboards. Using a valve it is possible to pump air into the foam core.

The stiffness of the surfboard, the so-called flexing dynamics, can be adapted by variation of the inner pressure by means of infinitely variable pressurisation individually set to the needs of the surfer and to the wave itself. As Bionic Composites GmbH discovered, the structure of the board remains 100% form-stable under high pressure. The hardening pressurisation of the foam enables construction without lateral stiffeners. This additionally improves the flexing dynamics and makes the construction so robust that no other materials are necessary to stabilise the surfboard.

Surfboard

The construction can be stabilised by increasing the inner pressure without increasing weight. Another advantage is that the characteristic of the component can be adapted according to requirement by pressure increase or pressure reduction, dependent on the prevailing conditions. The rule is as follows: The higher the inner pressure, the stiffer the board.

At ITV Denkendorf, investigations were carried out with specially made sandwich components to test this theory. In the initial attempts, foamed plastics made from expanded polystyrene (EPS) were used. It appeared that these, depending on the density, were able to withstand pressure of approx. 2 bar. The core material failed when the pressure was increased. Even higher inner pressure was applied to cork sandwich materials, and the inner core of the material was able to withstand this increased pressure. However, the fibreglass top layer began to leak as the pressure rose to 5 bar.

Initial bending test results of pressurised sandwich components with an EPS core show that with a pressure of 2 bar, an increase in maximum bend of more than 11% can be achieved. Crush tests showed that inner pressure increase causes compression in the material. For example, the pressure increase required for a material thickness compression factor of 80% in a laminated cork test was from approx. 20 kN to approx. 60 kN at 2 bar inner pressure. At this point, partial rear distortion was to be observed. In tests using EPS as a core material and under 2 bar inner pressure, the completely laminated units showed distortion of only 25% after previous compression of about 80%.

With no inner pressure, maintainability is over 50%. With dynamic attempts at low penetration depths, complete relaxation is possible.

If a fibreglass and foam-sandwich laminate is dynamically challenged, high shearing forces are released due to the high density of the fibreglass and the low density of the foam core. The fibreglass top layers can thereby free themselves from the foam core when under the influence of powerful forces and high oscillation rates. So the standard two-dimensional connecting surface (adhesion surface) was replaced with a three-dimensional connecting structure with an essential increase of the connecting surface area of the laminate layers („rooting“). This procedure serves to hinder delamination between the foam core and fibreglass grouping, increasing the breaking strength of the group components.

A big advantage is created by the possibility to increase the rooting in especially stressed areas. In stress zones, the rooting provides for additional stability. The advantages of rooting technology have clear cost advantages compared to similar technologies because no additional cost of materials results. It is automatable and can be implemented manually at low cost. It is easy to apply and the connecting degree can be steered individually. The initial investigations into the area of connecting technology between top layer and core material showed that components with a three-dimensional rooting display much better resistance to peeling than tests without rooting technology. Attempts with which the rooting was strengthened by glass thread displayed even firmer connections. This improvement is actually more effective with a higher weight.

Both of the technologies examined have the potential to lower the production costs of fibre group components and to simultaneously increase the firmness of the component. Variably controlling the inner pressure permits regulatory targeting of the qualities of the components (stiffness, firmness, oscillation behaviour). In addition, the continuous measurement of the inner pressure permits supervision of the material‘s structural integrity.

The special construction of the entire component and a co-ordinated cooperation between the different materials provides for the fact that the construction remains form-stable and does not arch under the inner pressure into a cylinder. Because the concept of „pressurised foams“ is concerned with a generally valid construction or production principle for an increase in stiffness, Bionic Composites GmbH and ITV Denkendorf see great potential in this new technology, as well as in fibre group technology and metal foam technology. There are many applications which can be served by these versatile technologies, for example, in sport, boatbuilding, and in the automobile industry.

Constraining fire with textiles

Manufacture of flameproof Polyamide using a new process

Both of the technologies examined have the potential to lower the production costs of fibre group components and to simultaneously increase the firmness of the component. Variably controlling the inner pressure permits regulatory targeting of the qualities of the components (stiffness, firmness, oscillation behaviour). In addition, the continuous measurement of the inner pressure permits supervision of the material‘s structural integrity.

The flame of the Bunsen burner eats into the bright fabric of the polyamide thread. Hot melted pearls drip onto the base. That which takes place in a lab-run fire test can have drastically different effects in practice. For this reason, the researchers at ITCF Denkendorf are working on an improvement to the flame-resistant characteristics of textiles made from polyamide. Polyamide textile surfaces are not only widely used in clothing materials and home textiles like carpets or wall textiles. High tensile strength and good solvent resistance predestine technical polyamide fabrics for varied industrial uses, e.g., for paper machine clothing and conveyer belts.

Flame resistance is of considerable significance in all of these areas, and the main concern here is human safety and the protection of property. Polyamides have many varied uses, but its lack of fire-resistance has hindered its popularity up until now. To comply with modern safety requirements, polyamide now has to be additionally treated: A chemical substance intended to „armour“ the thread is applied to its outer surface. But this treatment is not permanently effective. The armour wears off, either removed by washing of the textile, or by external mechanical effects, causing the flame resistance to become ever more ineffective.

The researchers at ITCF Denkendorf are breaking new ground in integrating flame protection components in the condensation process directly into the polymer chains. This causes the flame protection connection to be firmly integrated chemically, and is permanently effective due to this fact. Although this procedure has been applied to polyester for a long time, and flame-proof polyester thread is already commercially available, the situation with polyamides is different.

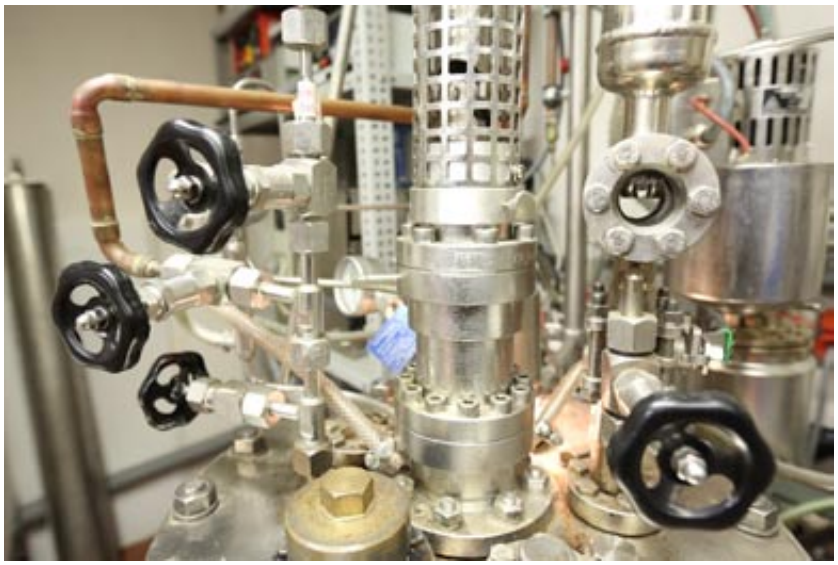
A polyamide with built-in flame protection comonomers such as the one developed in Denkendorf, is not currently available on the market. A complicated technical process for which a patent has been applied for, has enabled this new material group.

It is worthwhile emphasizing that these flame protection components offer excellent fireproofing and are free of halogen.

Halogens are still widespread in fire protection even though they can cause problems as they are known to release noxious hydrogen halide during combustion.

The flame-resistant qualities and physical and mechanical qualities of the new flameproof polyamide fibres were compared extensively to fibres without integrated flame protection in the Denkendorf laboratories. They were able to ascertain only slight differences which are irrelevant for the other processing of the fibres into textile products. The present ranges of application of polyamide fibres are therefore clearly extended by the improved fire prevention qualities.

Not only the textile area is of interest with regard to the application of fireproof polymers. Plastic moulded parts also have to be protected from fire – anywhere where it gets hot: as within electronic casings or beneath machine coverings. In the end, modern plastics find comprehensive use in lightweight construction. In particular in the automotive and architectural sectors, fibre-reinforced composite materials are increasingly being used. Thermoplastics like polyamide are used as a matrix in group materials and often have to fulfil particularly challenging roles when it comes to fire prevention.



Reactor for the manufacture of Polyamides

Carbon-fibre surface modifications

Improvement in the mechanical characteristics of carbon-fibre composite materials

Fibre group materials have asserted themselves over the last few years on account of their excellent mechanical qualities and their extensive lightweight construction potential in leading industrial areas. In particular it is carbon-fibre based composites that have attained widespread recognition. The unusual firmness and toughness linked with their low weight predestines them for application in motorised vehicles, wind farm construction, as well as in other technical fields.

The special firmness of this material group is derived, on the one hand, by the mechanical qualities of carbon fibre, and on the other hand, from its interaction with the surrounding matrix, e.g., epoxy resin. This interaction guarantees that a work piece can optimally stand fast against external forces. However, the adhesive quality of carbon fibre is not always good enough to bond to the matrix. If the fibre surface is loosened from the epoxy resin by external forces, the results are usually fatal. The force absorption is concentrated only upon the fibres, and material failure can result: The work piece breaks.

The standard way to improve fibre - matrix bonding is a specific chemical treatment of the fibres themselves. This comprises of an oxidisation treatment on the fibre‘s surface. It is precisely here where functional chemical groups can improve the fibre matrix bonding qualities. However, the firmness of the fibres is decreased through the roughening of the fibre‘s surface, damaging the fibre itself.

They are breaking new ground at ITCF Denkendorf in an attempt to increase the bonding qualities of carbon fibre with the epoxy matrix. In a complicated chemical process, polymer chains are grafted onto the surface of the fibres. This involves polymers that bind themselves into functional carbon fibre groups and polymerise there. They grow on the surface of the fibres to form larger and larger polymers chains, creating three-dimensional structures. Like small anchors, they increasingly form in the epoxy resin, creating an excellent fibre matrix bond, enabling the fibres to retain their original stability.

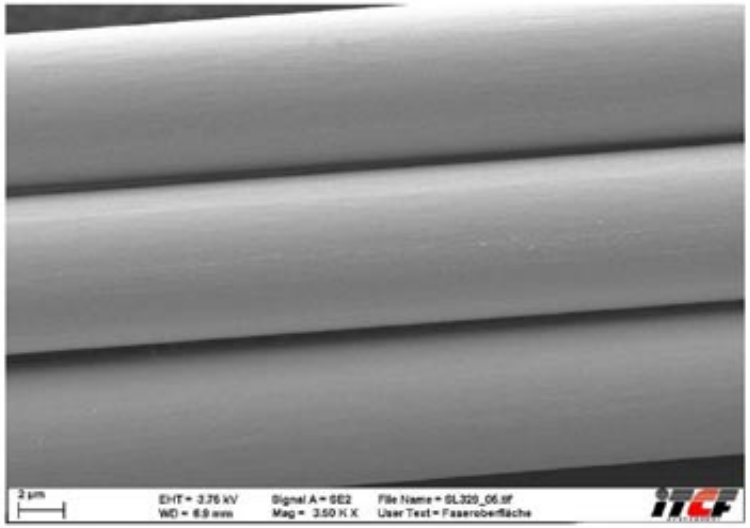
The chemical surface modification procedure is easy and simple to transfer to an industrial production scenario: The fibres are preserved with a liquid (monomer solution) and subsequently submitted to temperature treatment.

A washing and drying process follows this.

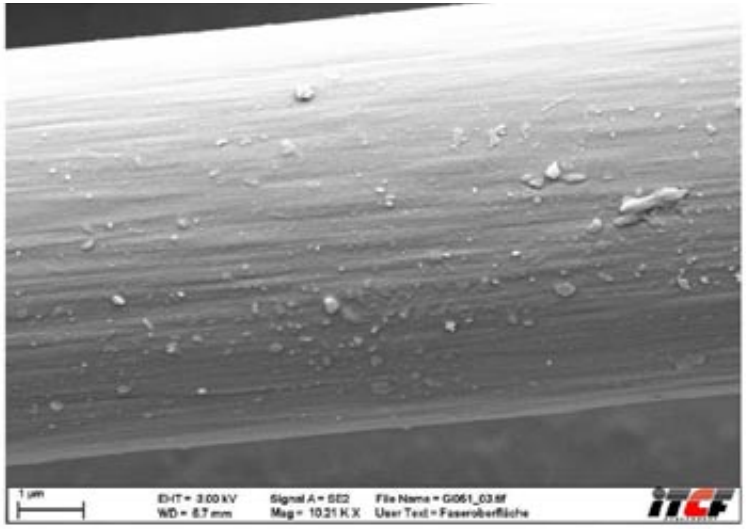
The first test specimens have already been produced following these new methods and have been tested successfully for their mechanical qualities. Their tensile strength increased compared with group materials with conventionally treated fibres by 15%. In addition, the elasticity module, a measure of the resistance of a material subject to elastic distortion, increased by 6%. The greatest effect was displayed by „inter-laminatary shearing strength“ treatment, which increased by about 20% and had the greatest influence. This value describes the cohesion of the material layers within group bodies.

Microscopic pictures of fractured surfaces of the modified materials show a reduction of the so-called Fibre-Pull-Outs‘: In a tensile test, far less of the matrix material was removed.

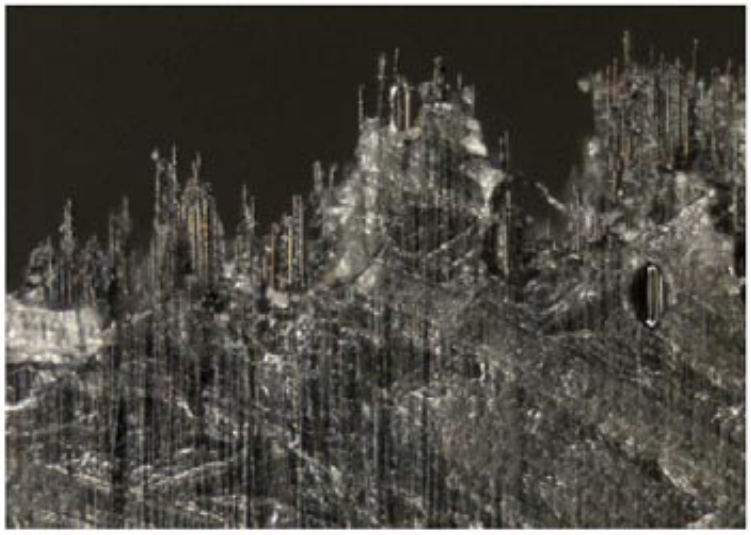
These persuasive results promise a high potential for the transfer to a ready-for-market product.



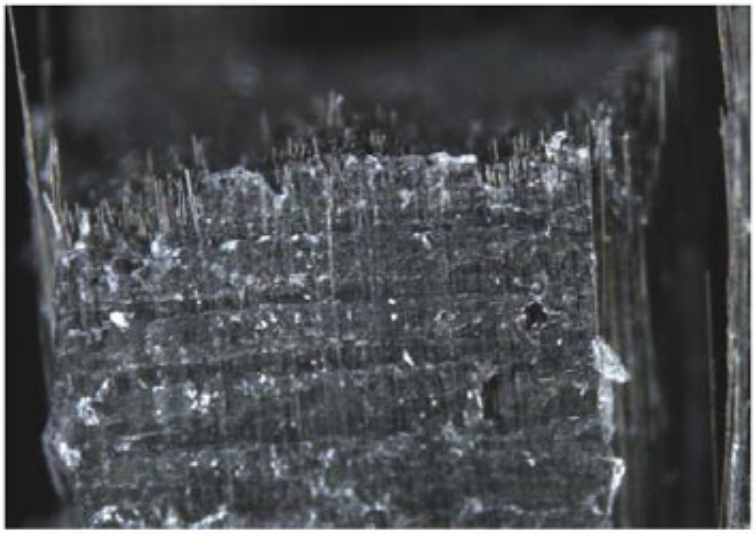
Fibre surface before preparation



Fibre surface following preparation with a monomer solution



Break pattern: Test specimen from conventionally treated fibres.
Aspect ratio = 1.9 mm



Break pattern: Fibre test specimen prepared according to the ITCF method.
Aspect ratio = 1.9 mm

Topics of the next issue 1 /2015

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Sustainability – review 2014 and outlook
Sustainability – Manufacturer Special
Sustainability reports of textile companies

Interview

Country focus: *Italy*

Nonwovens & Technical Textiles:

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Domotex Review
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News from Denkendorf
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Renewable fibres