

# fibers and filaments

the experts' magazine

issue 17 - january 2014

## Quo vadis, textile demand?

### Per Capita Consumption 2013

A study on the future development of apparel markets



## Glancing into the future

### The apparel world in 2020

Talking to Dr. Klaus Schäfer and Michael Korobczuk of Oerlikon Manmade Fibers



"We master the entire value chain for manmade fibers production."

Ugur Baş,

Oerlikon Manmade Fibers



# From Melt to Yarn

It all starts with a few chemicals. But transforming these into smart clothing, technical textiles or tire cord requires great ideas, outstanding equipment and sophisticated processes.

Oerlikon Manmade Fibers engineers support you in ensuring that your entire project is a total success. We will accompany you on your journey from chemical product to manmade fibers. From jointly developed innovative ideas and outstanding equipment to sophisticated processes. From engineering and polycondensation to spinning, texturing and nonwoven production. From melt to yarn.



For further information visit us at [www.oerlikon.com/manmade-fibers](http://www.oerlikon.com/manmade-fibers)

**oerlikon**  
barmag

**oerlikon**  
neumag

## In focus



### Quo vadis, textile demand?

Per Capita Consumption 2013. A study on the future development of apparel markets.

4



### Glancing into the future

The apparel world in 2020. Talking to Dr. Klaus Schäfer and Michael Korobczuk of Oerlikon Manmade Fibers.

10



### Manmade fibers dominate the textile world

Interview with PCI Fibres' Peter Driscoll on the manmade fibers market.

14

## Innovation and technology



### Everything from a single source for a single destination

Integrated solutions from melt to yarn.

18



### WINGS is getting larger

WINGS POY is now also available with 1,800 mm chuck length.

22

### On the markets

Oerlikon Barmag at the "K" 2013..... 30  
52nd Dornbirn Manmade Fibers Congress..... 31

### People

Hidden Champions ..... 32  
Dedicated to innovative Nylon 6.6 solutions: NILIT..... 34

### Service

Partnering for Performance ..... 37  
Well-oiled cogs – project management at its best ..... 38

### Panorama

HSE – Health, Safety & Environment..... 42

### In brief

News and reviews ..... 26

### In time

Upcoming events ..... 29

### Editorial

..... 3

### Imprint

..... 44

Editorial



Dear Customers, dear Readers,

Following what has hopefully been a contemplative time over the New Year, we welcome you to a new edition of our customer magazine 'Fibers and Filaments'.

After an extremely industrious year – which has characterized by lots of investment – the main topic of this edition is a look into the future of textiles. This includes insights into how the markets will develop, what materials will be dominant in the year 2020 and how we will be clothing ourselves in ten years time.

But 'Fibers and Filaments' does not provide answers merely to questions relating to the markets. Our technology magazine is also a showcase for innovations, new technological solutions and services that will help you prepare yourself for the challenges of the future. And we will be presenting our latest product as well – WINGS POY 1800. It enables you to increase yarn production by 20 percent per position.

If you would like to be more independent of the raw materials market, then the backwards integration of upstream production stages may be the solution for you. Here, we will be presenting our poly-condensation engineering and process know-how.

Furthermore, we will be placing a special focus on service in 2014, whereby our aim is to continue being a trailblazer and offer you interesting and commercially-attractive solutions in line with our motto 'Partnering for Performance'.

You see, there are many options for carving out your own individual path and for successfully planning your future. We hope that this edition of 'Fibers and Filaments' provides you with some food for thought.

Enjoy!

With best regards,

Stefan Kroß

CEO of Oerlikon Manmade Fibers



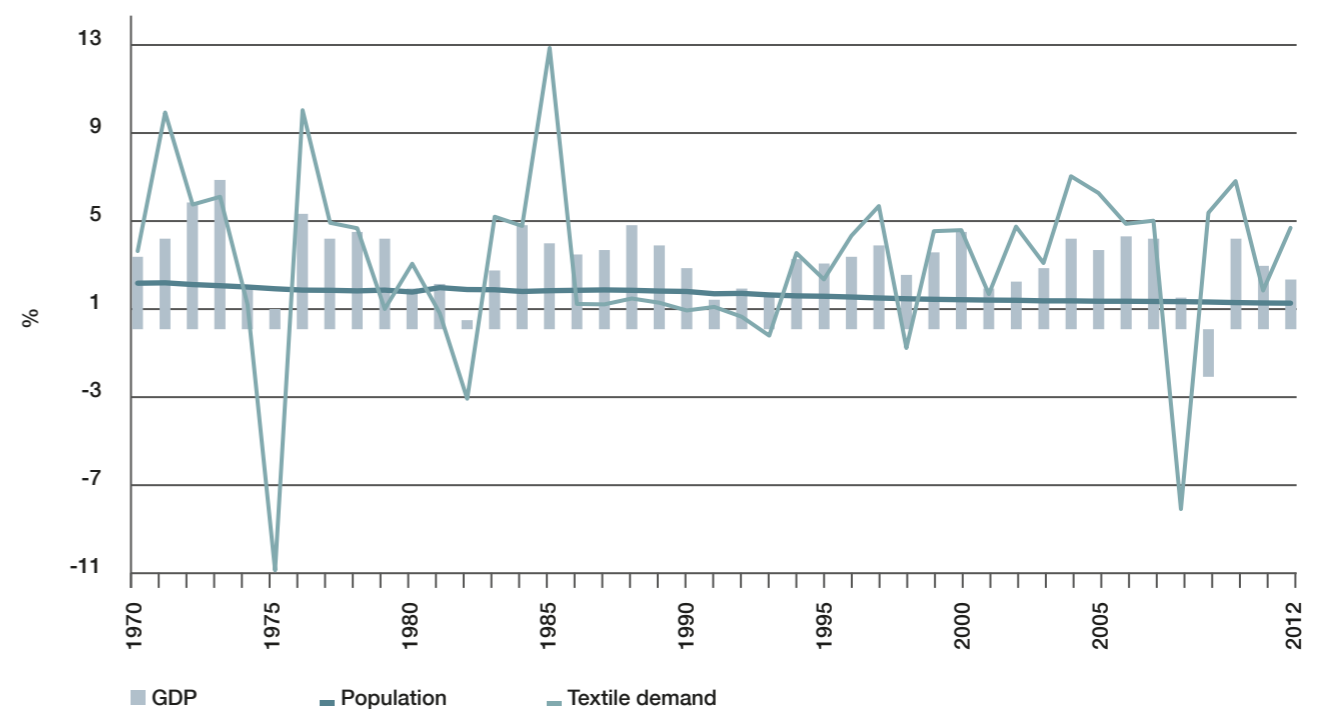
# Quo vadis, textile demand?

Per Capita Consumption 2013

Clothing has been part of our daily lives for around 75,000 years according to anthropologist Alexander Pashos. Hence, the textile value chain has mastered innumerable rebounds and downturns, challenges from technological and fiber innovations, trade restrictions, relocations, fashion trends and politics. The latest trend has been the shifting of manufacturing to low-cost countries in Asia. In the foreseeable future, consumption may gain momentum in this region.

Both disposable income and population growth are generally accepted major factors for textile demand. The chart illustrates their long-term development and concludes that activities along the textile value chain have often been subject to more distinct fluctuations in the past.

Annual dynamics in GDP, population and fiber consumption



Source: The Fiber Year 2013, United States Census Bureau, World Bank

Of course, further factors have an impact on textile consumption and need to be considered, estimated and calculated. A list of these factors would include aspects such as raw material availability, spirit of the time, shortening fashion cycles, climate change, regional weather conditions, government spending on infrastructure, housing and mobility, sustainability, tradition and recycling, among others.

On top of these, the often neglected volume of worn clothing and articles should be considered. The current trade volume accounts for around 4 million tons. This figure only targets flows across borders as items of clothing changing hands within a country would not affect the national consumption level in terms of volume. It represents the majority of textile consumption in a number of countries. Second-hand clothing is widespread in Africa and helps people in low-income countries to save money.



A new study recently published by The Fiber Year GmbH complements the annual 'The Fiber Year' textile yearbook and provides more detailed data on textile and clothing consumption in 115 countries. It includes the national fiber and spunbond availability, trade flows of the textile chapters 50 to 63 and the used clothing balance. A country-specific outlook for the final end-use level in the year 2020 considers the current income category and national dynamics in GDP and population growth. This approach appears to be essential, as both determining factors will be subject to decisive changes. A slowing momentum in both variables is expected for countries and regions with currently above-average textile demand.

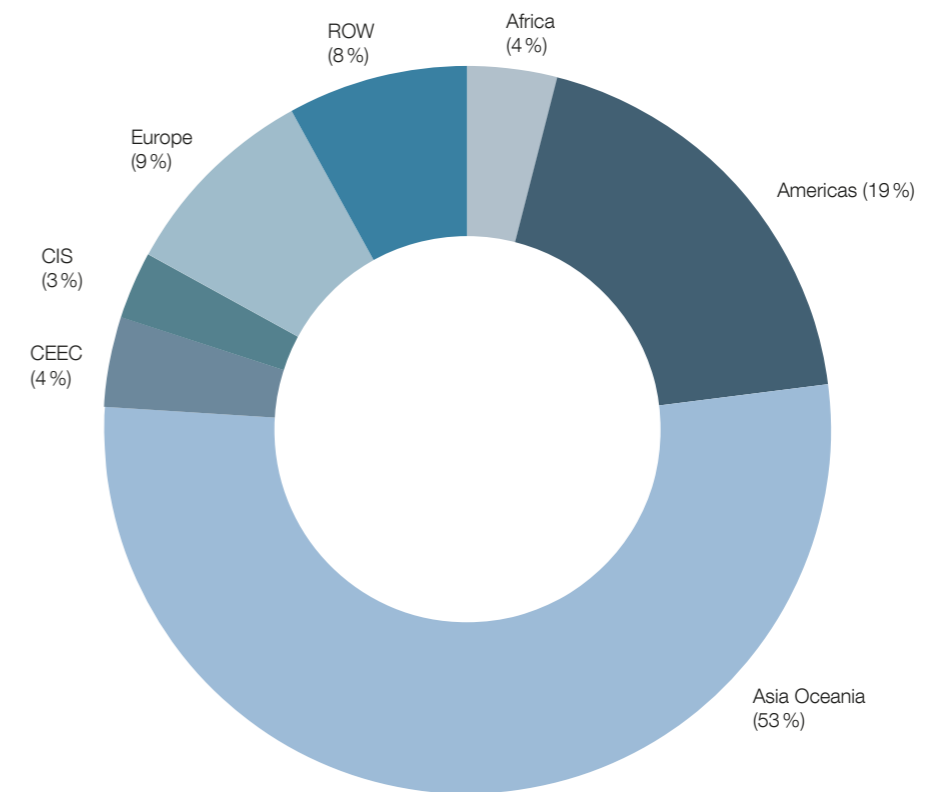
According to the World Economic Outlook published by the International Monetary Fund in April 2013, countries in developing Asia have enjoyed the strongest GDP growth rates in recent years and are expected to continue growing at an above-average pace. The second fastest economic growth rates are projected for Africa. Meanwhile, advanced economies are anticipated to grow much more slowly.

Similarly, more than 50 countries analyzed in the Asian and African region show higher population dynamics than the Americas and Greater Europe. Over the period between 2005 and 2020, the average annual growth rate of the African population will amount to 2.3% (Asia: 0.9%), while the joint population growth in the 22 American nations will average 0.7% and in the 40 countries comprising Europe, the CIS states and the Central Eastern European Countries (CEEC) the figure will be 0.3%.

Using the example of populous nations may illustrate the impact of shifting growth drivers. The group of populous nations including Bangladesh, India, Indonesia, Nigeria and Pakistan, with a joint population of nearly 2 billion at present, represents 28% of world population. The forecast for these five countries will account for the addition of virtually 225 million new consumers by the year 2020. The average per capita consumption in these countries currently accounts for 6.6 kg and is forecast to rise to 8.4 kg. Thus, population growth may only partly help to produce the worldwide industry growth figures we have been accustomed to in the past.

Quite the contrary in fact: the ten-year Multifiber Arrangement (MFA) phase-out period has prompted international companies along the textile chain to shift their manufacturing and sourcing in search of lower production costs and increased competitiveness. The world textile market has even been enhanced by this build-up of new capacities in mostly Asian countries. Increasing job creation and, hence, higher disposable income in emerging countries have spurred textile consumption. The abolition of the trade-distorting MFA regime at the end of December 2004 has drastically changed the global industry and led to tremendous efficiency gains. Recent textile consumption growth rates were clearly higher than in the past, driven by enormous investments to boost the economies in emerging countries.

## Regional share in fiber consumption in textiles and clothing 2012



Source: Per Capita Consumption 2013

Looking at regional changes in growth drivers, the regional outlook for economic and population growth suggests a slowdown in global fiber demand as the advanced economies' share of fiber consumption is expected to decline. The current distribution of fiber demand for the 115 analyzed countries is shown in the following chart. The majority of textiles and clothing consumption is located in Asia and Oceania. The 26 countries analyzed in this region, with a joint population of 3.8 billion and equal to 55% of world population, consume 53% of the world market. The per capita consumption comes in at 12.8 kg, just below the global average of 13.3 kg. The regional share in world fibers and spunbond supply rose from 66% in 2005 to 76% last year. This region holds a leading position in every single fiber segment. Consequentially, the gap between local production and final end-use has further widened.

The warp knitting process requires extremely high yarn quality in order to guarantee an even fabric



In contrast, per capita consumption in the Americas totals 19.1 kg and, in Greater Europe, 17.3 kg. Both regions are anticipated to witness a decline in their market shares. The two regions' joint share of 35% at present is predicted to fall to 32% in 2020. However, a closer look at the regions reveals significant differences. The three countries in the NAFTA region and Brazil, all among the top twenty nations in terms of the final end-use level, are predicted to raise their textile consumption faster than the remaining American countries. Conversely, the regional differentiation in Greater Europe concludes that the CEEC nations will experience above-average growth, while demand in the CIS states is expected to grow slowly.

Africa, having the fastest population growth during the reviewed period, has a per capita consumption of 4.4 kg, with almost a quarter being met by worn clothing and second-hand articles. The highest growth rate in textile consumption is assigned to Africa, averaging almost 4% annually until 2020. Nevertheless, the low basic value needs to be taken into account – the actual demand in volume terms is about a third of Greater Europe despite the greater population.

The segment of worn clothing and articles is a new aspect in showcasing national textiles and clothing consumption levels. According to data from the International Trade Centre, the export value of this subchapter has continually grown: from USD 1.7 billion in 2005 to USD 3.9 billion last year. Consequently, the relevance in volume terms has increased in importance as well. The share in total consumption rose from 3.1% in 2005 to in excess of 4% last year.

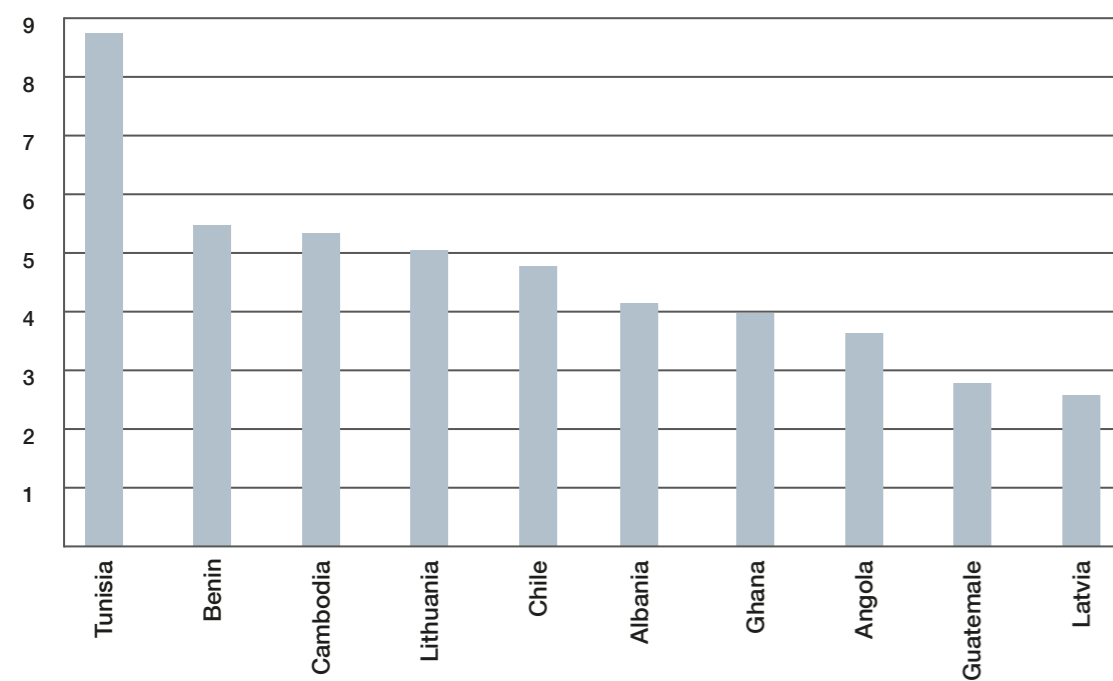
As expected, leading exporters are industrialized nations with the United States, the United Kingdom, Germany and South Korea accounting for half of the previous year's exports by value. The majority of trade flows was destined for Africa and Asia. The top ten consumers of worn clothing and articles are listed in the chart, with an average per capita consumption ranging from between 2.6 and 8.8 kg.

In summary, the conservative consumption outlook projects a volume of 115 million tons for the year 2020. This would imply an average annual growth rate of 2.6% for the period between 2012 and 2020. The relative share in Asia is expected to grow, while participation of Greater Europe and the NAFTA region may decline further. (ae)



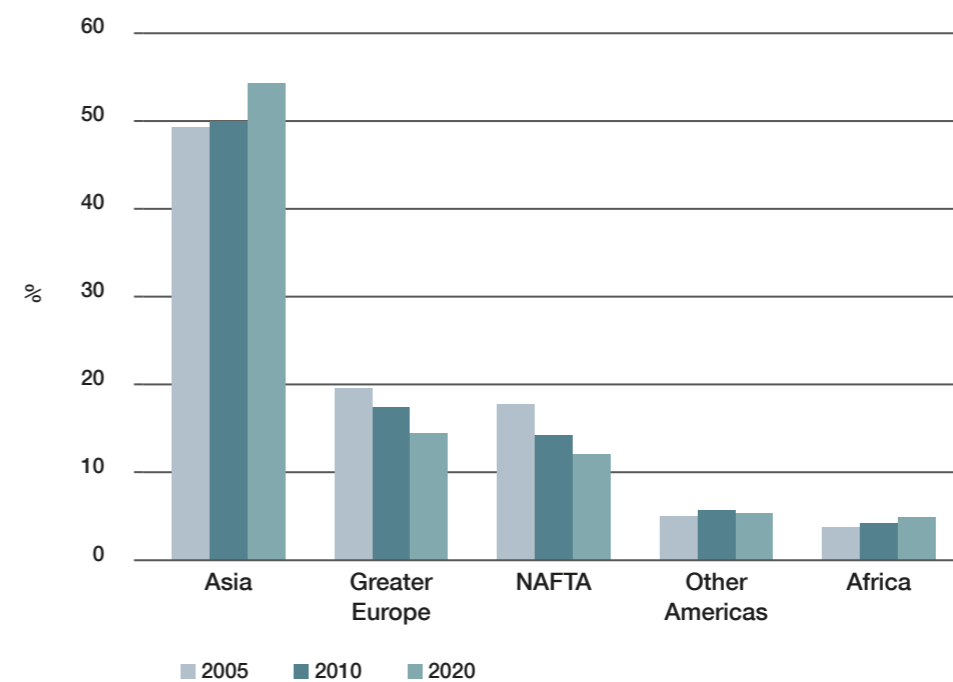
## Leading countries in used clothing consumption

kg per capita as average 2005-2012



Source: Per Capita Consumption 2013

## Shifting consumption patterns



Source: Per Capita Consumption 2013

**THE FIBER YEAR**  
CONSULTING

This new statistical report, published by The Fiber Year GmbH, analyzes 115 countries representing 94% of world population and 92% of global textiles and clothing consumption. It shows national per capita consumption for the period 2005 to 2012, including a forecast for the year 2020. This new service complements the 'The Fiber Year 2013' textile yearbook and may help in understanding the history of textile dynamics as a basic prerequisite for drawing conclusions for future development.

All relevant details, including table of contents, are available at [www.thefiberyear.com](http://www.thefiberyear.com) where the report can be ordered.



What will be?  
Qué será?  
会是怎样

Was bringt die Zukunft?

Что привело будущее?

Những gì mang  
lại tương lai?

क्या भवषिय में लाता है?

Ne geleceği getiriyor?



## Glancing into the future

### The apparel world in 2020

Five-year programs, future projections and scenario techniques – the whole world is looking forward to 2020 and beyond with the aim of improving the planning of their own businesses. How will the markets develop, how will consumer behavior change and what will textile manufacturers require and demand from their suppliers? Fibers and Filaments spoke to the Oerlikon Manmade Fibers managers Dr. Klaus Schäfer, Head of R&D, and Michael Korobczuk, Head of Sales, about the future.

Dr. Schäfer, Oerlikon Manmade Fibers is considered something of a trend setter in the industrial textiles sector. What will we be wearing in the future? What do you see as the trends?

Dr. Klaus Schäfer: "More than seven billion people around the world want to clothe themselves – comfortably and at sensible prices. To this end, the trend will continue towards inexpensive production methods at all stages of the textile production chain. As the global market leader in manmade fiber production systems, we will be able to profit from the anticipated growth in polyester and polyamide; for example through increased sales of functional apparel and also as a result of the replacement of natural fibers. Furthermore, there are many ideas for smart or intelligent textiles that are quite feasible, but are currently not being deployed on a larger scale for cost reasons. I am, for instance, thinking of networked apparel, which

monitors body functions, self-cleaning apparel, but also products with every-day-compatible properties such as anti-static and antibacterial fibers. More technology in conjunction with textile wearing properties. And Oerlikon Manmade Fibers is also benefiting from this."

Mr. Korobczuk, natural fibers or manmade fibers – is that the real question? The figures actually speak a clear language: the manmade fibers market share meanwhile makes up around 70 percent of the market. Will manmade fibers continue to make inroads or do you see a reversal of the trend in the future?

Michael Korobczuk: "I am convinced that manmade fibers will extensively replace natural fibers in many areas of the apparel industry in the medium term. There are numerous reasons for this: firstly, the natural fiber market is subject to strong price fluctuations, just like the mar-

kets for all other agricultural products. Here, raw material scarcity plays a major role. In contrast, manmade fibers are independent of this and can be manufactured anywhere in the world at comparatively consistent prices. Furthermore, the process of manufacturing manmade fibers is also the cleaner and more sustainable solution when viewed from an ecological perspective. For example, tons of pesticides and many cubic meters of water are consumed before a cotton fiber is 'wearable'. Thanks to our direct spun-dyed process, it is now possible to virtually dispense with water altogether when producing manmade fibers and still achieve excellent yarn quality."

Dr. Schäfer, which polymers will be prevalent in the future?

Dr. Klaus Schäfer: "We are seeing a constant trend towards polyester in the manmade fibers sector. In terms of their properties, polyester fibers are also increasingly suitable for the, to date, classical polyamide fiber applications. The deployment of spun-dyed yarns will also increase, a trend that is already very noticeable in the automobile industry. The quality requirements of the consumer are rising; spun-dyed yarns are more color-fast and more even. In addition to this, their manufacture is considerably more environmentally-friendly. A further topic is other filament cross-sections, providing a better handle or a different visual impression. Functional fibers with anti-bacterial and anti-static properties, with UV protection, cotton-like and non-iron fibers will increase when prices fall. As many of these properties are determined in the polymer or in the melt, it increasingly makes sense for filament manufacturers to also focus their efforts on polymerization and the polymer modification. However, this polymer will continue to play an interesting and important role as a result of cost reductions in polyamide raw materials and the extremely good product properties of polyamide. Furthermore, the polymers manufactured from renewable raw materials will continue to expand their position within the polymer sector."

Which topics do you believe textile manufacturers will be thinking about in ten years time, Mr. Korobczuk? And how do you prepare for these topics?

Michael Korobczuk: "Sustainability remains a decisive topic: energy, resource scarcity and one's carbon footprint. These trends are already being focused on heavily, but will become even more important in the future in view of rising energy and raw material prices. This applies to both textile manufacturers and machine constructors. With our e-save energy efficiency program, the topic of sustainability is at the very top of our product specification whenever we develop new technologies and improve existing solutions. For this reason, we already have a substantial head-start on our competitors and have every intention of further extending this competitive edge for the benefit of our customers."

At home in the textile markets for decades:  
Dr. Klaus Schäfer (top) and Michael Korobczuk  
(bottom).



Clothing should not just look good. With falling prices, the textile future is characterized by intelligent fibers.

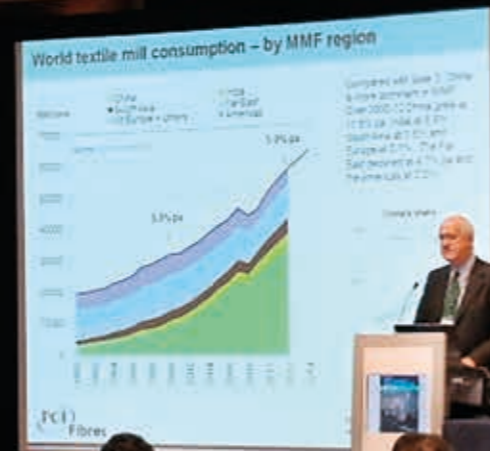
Talking of markets: Mr. Korobczuk, China is currently dictating the pace within the textile industry, with India hot on its heels. How do you see the world in ten years? And what role will the markets in China and India play then?

Michael Korobczuk: "Until then, the world will continue to develop. Population growth is further increasing and we are sailing towards the eight billion mark. This represents an increase of around 70 million people each year from today, with most born in Asia. In parallel to population growth, Asia's middle classes will also grow in numbers; in other words, purchasing power will rise, which will have a positive impact of the sales of textiles. Thanks to rising affluence, China will establish an increasingly stronger domestic market and hence remain the global driving force within the textile industry. However, China is also increasingly manufacturing to satisfy its own requirements. Here, India will only be able to catch up slowly. The demographic structures in India differ from those in China, with lower average purchasing power. Above all among younger people. By 2025, it is estimated that India will be home to more than 500 million people under the age of 18. However, the development of the sales markets for manmade fibers depends not just on population growth in emerging countries, but also on the deployment of innovative fibers in other areas, such as industrial textiles, for instance. Here, there is still huge potential, potential that we will be benefiting from as a machine constructor."

Thank you both for talking to us! (bey)

# Manmade fibers dominate the textile world

Peter Driscoll has been a consultant to the fibers industry since 1986, being a founder member of the PCI Consulting Group, which was established in 1988. PCI Fibres is an independent member of the group, and its managing director Peter Driscoll has shared his current outlook on the world of the manmade fiber industry with us.



Peter, you have just returned from the PCI Fibres Conference in Hong Kong. What was the final conclusion of all the experts, and you in particular, regarding the development of the world fiber market up to the year 2020?

There is great uncertainty concerning the short and medium term, since it is generally agreed that the market, especially in China, is suffering more and more from over-capacity: at the raw materials level, in caprolactam and PTA and – to come next year – in paraxylene. At the fibers level, in viscose staple and in nylon and polyester filament as well as at the textiles levels in both weaving and circular knitting. And much of this extra product has to find a home in the developed world where consumer demand is still growing at a very slow pace.

We have seen steady growth in the world's fibers consumption over the past few decades and a clear shift towards manmade fibers. The average growth between 2000 and 2012 was 3.6% p. a., with consumption anticipated to reach 84.1 million tons for 2013. What do you expect over the next few years?

Firstly, we must note that output and consumption in any given year might not be the same, although they will tend to come to a balance cumulatively over a period of several years. For 2013/14, we expect strong fibers output, partly influenced by continuing easy monetary policy in China. Thereafter, there could be a slowdown in output, since we expect demand growth in the next five years to be a little slower, nearer 3% a year. The effects of the recession are still being worked through worldwide, and there will eventually be a need for some adjustment within China. Our production estimate of 84.1 million tons for 2013 involves year-on-year growth of 4.1%, and our forecast for 2014 of 87.6 million tons yields a 4.2% increase; with slower growth thereafter. This position was not always shared by other speakers at the conference, some reckoning that 2014 would see a marked slowdown in output, with a strong recovery thereafter. We thus need to be prepared for every eventuality; and, in boxing terms, to stay balanced on both feet!

Will the ratio of manmade fibers grow further?  
What ratio do you anticipate for 2020?

Cotton now has a share of 28%, and, allowing for other natural fibers such as wool (but not hard fibers such as jute and sisal), this leaves manmade fibers with 71%. In recent years, manmade fibers has also benefited from the problems of cotton pricing. There was the price-spike of 2010/11 when the market acted in the belief that there was a structural shortage of cotton, and since then we have had the Chinese authorities buying for stock domestic cotton at a reserve price. While the effect of this has been to stimulate cotton yarn spinning outside China, it has also helped international cotton prices stay relatively firm, encouraging, in our opinion, demand for viscose staple and polyester textile filament – and, it should be noted, some over-production of cotton. Now Chinese policy appears to be changing, and cotton prices have started to weaken. This process, even if it takes place gradually, will help cotton hold, if not recover, some market share. For 2020, we therefore put cotton still at 28%.

The PCI Conference held in Hongkong on November 7-8, 2013 gave interesting insights into the world of textile fibers and raw materials.



If you differentiate between polyester, polypropylene, nylon, acrylic and cellulosic – which fiber has developed best since 2000 and which one will experience further growth? And why?

There can be no doubt about this: polyester wins and, within the polyester family, filament wins over staple. And this will remain the position while present raw materials sources apply. Polyester offers value-for-money when compared with all the other synthetics, even when it is not necessarily the optimum fiber for a given application. And the number of end-uses that exclude polyester, such as pantyhose, special purpose tires and certain low-denier industrial applications (such as those for some airbags) are quite few in number and by weight. What polyester lacks is true absorbency – but, again, the situations where this is seen to apply are less and less; a good example being sportswear. This aspect has however opened the way for a resurgence in the use of cellulosic fibers, but, as noted above, cotton is not dead yet and will fight to keep some of the market for 'comfort fiber'. Coming back to the raw materials issue, for now the synthetics have only one strong story on sustainability; and that is recycling, where the easy collection of used bottles has been of great benefit to the polyester business. But work is progressing on the development of new routes to fiber intermediates from bio-mass. Without going into all the issues surrounding the use of such feedstock, it does seem as if producing nylon in particular from bio-mass might allow some reduction in those upstream processing costs that currently put it at a disadvantage to polyester.

There is a strong growth in polyester industrial filament, especially over the last four years. Looking forward, what do you expect for the deployment of manmade fibers in technical textiles in general? What new applications and markets do you see?

To some extent, polyester industrial filament has enjoyed a short-term surge in volume, mainly in China, but this is expected to ease and settle back in the medium term. And the gain worldwide might be less than first thought since the Chinese fiber producers are also busy investing in the downstream, through to finished articles; as for example in tires and automotive applications. And this is to the detriment of demand and growth elsewhere. Our current global forecast for the period between 2010 and 2020 is for polyester textile filament to grow at 5.0% pa and polyester industrial filament at 4.6%. Much is made of the Chinese investment in infrastructure, but this appears to be encouraging a growth in output rather than in demand, in applications that are already well-known. The market for ladies' fashion wear is more substantial, and more likely to add significant volume when compared with applications for high-tenacity yarn.

Looking at the long term trends in the consumption of manmade fibers in various regions such as China, India, the USA and Europe – what will happen in the period up to 2020 and in the following years up to 2030?

Apparent consumer demand for fibers in a given market is a supply-side measurement based on fiber production with allowance for net trade in fibers and fiber-containing products. In brief, China's apparent consumer demand for fibers is considerably inflated at 17.1 kg per capita for 2012, versus Turkey at 17.0 kg, and both Japan and West Europe at 20.9 kg. Comparison with these and other markets suggests that China should be nearer 12 kg per capita. To reach such a figure, a significant correction would be needed, with reduced fiber output and increased exports. And, for obvious reasons, this would need to take place very gradually. The long-term prospects for growth in fiber demand in China have therefore to be treated with some caution. Meanwhile, we see the USA and Europe gradually moving out of the present slump, led by the USA, since it already has a policy of growth, whereas Europe, at least in the euro zone, is yet to find one. India is growing very strongly, but off a very small base, with per capita demand for manmade fibers at 2.9 kg and for cotton at 2.4 kg. The Indian polyester filament producers have run ahead of their overall economy and must now go through a period of consolidation before further expansion. Our demand analysis suggests that final demand for manmade fibers in India will not gather pace for a few more years yet. In the meantime, what would help the fiber producers is an increase in exports of textiles and apparel in manmade fibers, but India is behind in this, and for now is concentrating on exports of cotton products.

What are the reasons for this development? How might the Chinese government's latest decision regarding its family policy change the expectations of the experts today?

Our demand analysis for China appears to contradict the prevailing wisdom on three fronts. Firstly, the gradual change in the one-child policy, as discussed in the April issue of the PCI Fibres 'Textile Pipeline' will not affect the present poor prospects for China's demographics any time before 2030 at the very earliest, and probably not before 2050. Meanwhile, fiber applications might change, but overall there will still be the constraint of having to work within the current surplus of fiber material. Secondly, both urbanization and infrastructure should be seen as consequences of increased demand and not as drivers of demand. Their premature development should therefore be seen as leading to yet more surplus fiber material. Thirdly, there is a move to increase household consumption from the current 35% or so share of GDP up to 50%, but this is unlikely to be achieved while resources are still being channeled into further investment in capacity, infrastructure and exports. And even without such investment, the arithmetic shows that household consumption can only grow its share quickly if the rest of the economy runs more slowly.

How important are the domestic markets in China and India for a balanced and steady growth of the global fiber market?

A strong market in manmade fibers within China reduces the need to export its surplus to other markets, especially to the developing world. A strong market for manmade fibers in India would be an indication of a developing economy with all the benefits that this can bring.

How important are energy costs for the production of manmade fibers?

Clearly, energy costs are an important constituent of manmade fibers production and textile use, and technical development to reduce such costs is a continuing need within any policy to conserve fuels. And such development can give advantages, at least initially, to those manufacturers willing, and able, to invest in reducing costs. However, there is now another consideration within the manmade fibers sector in that North America has moved ahead in terms of feedstock costs. The savings that are being made could in theory be shared all along the supply chain in different and varying ways. But ultimately this will depend on the supply/demand position at each point of production. At any point where there is endemic over-supply, any cost saving will be passed immediately on to the customer downstream.

Will fracking technology in the USA influence production in the future? Will there be more fiber production in the USA again? Or can China still dominate the markets?

Continuing from the point made in answer to the previous question, the decision on any redistribution of manmade fibers production will be determined sector by sector: thus, industries serving the retail sector, such as automotive applications, home textiles and hygiene, might want to be closer to their final market and gather around them as many suppliers as possible, and this might encourage more fiber production, for example, in the USA. On the other hand, industries – such as apparel – might remain close to labor markets as they are now, even if served at long-range with fabrics. And, in this case, China has built itself a pre-eminent position in the global apparel industry as a supplier of modern manmade fibers fabrics of every type and quality. This fabrics position will surely encourage further development in China's fibers capacity – to some extent in volume, but more in quality and variety.

Thank you, Peter. (aw)



"Per capita demand across all fibers reached an estimated 11,6 kg in 2012", says Peter Driscoll, Managing Director of PCI Fibres.

The PCI Fibres logo is at the top, featuring the letters 'PCI' in a stylized font with a blue arc above it, followed by the word 'Fibres' in a bold, sans-serif font. Below the logo, the text reads: "PCI provides services including multi-client and single-client studies. They provide monthly, quarterly and annual reports covering all the textile fibers and certain raw materials. Next year's PCI Fibres Conference will be held 6/7 November 2014 in Istanbul." The background is a solid blue color.

For further information contact [info@pcifibres.com](mailto:info@pcifibres.com)





Everything from  
a single source for  
a single destination

From melt to yarn – barely any customer has managed to implement the well-known Oerlikon Manmade Fibers philosophy as stringently and successfully as Wellknown Polyesters. One of the largest manufacturers of fully-drawn filament yarn (FDY) in India controls its entire textile value added chain: with poly-condensation systems and state-of-the-art spinning machines all the way through to the trailblazing WINGS (Winding INtegrated Godet Solution) winder technology. A complete solution from Oerlikon Barmag, which is fully worthwhile from the customer's point of view.

**T**he market outlook – particularly with regards to the manufacture of specialty yarns and niche products – rises with the product quality. Top-quality yarns require optimum raw materials and processing using state-of-the-art systems and equipment. Some yarn manufacturers have therefore decided to integrate the upstream polymer generating production stages into their overall value added chain. This backwards integration may require investment, but it can also generate extremely handsome returns.

This has been clearly demonstrated by Wellknown Polyesters Ltd. Today, the company is one of the largest manufacturers of FDY, DTY and ATY – and has achieved its strong market position in India by exploiting state-of-the-art 'from melt to yarn' technologies very much in line with the motto: Everything from a single source for a single destination. Because Wellknown has purchased all the systems and equipment for its polymer manufacturing facilities, spinning systems and winding plant from its long-term partner Oerlikon Barmag.

"The fact that we were asked to supply all the technology is a huge advantage for the customer", assures Michael Scholz, Project Manager at Oerlikon Barmag.

"Because as a leading manufacturer of spinning plant and texturing systems, we know the technical challenges and market requirements along the entire value added chain and are able to optimally tailor all machines, components and the complete engineering and processes to each other. And the ordering, delivery as well as assembly and installation procedures can be more efficiently coordinated in this way."

**"As a leading manufacturer of spinning plant and texturing systems, we know the technical challenges and market requirements along the entire value added chain and are able to optimally tailor all machines, components and the complete engineering and processes to each other."**

#### Integration is the key to success

For the founder and CEO of Wellknown, Anil Gupta, the decision to purchase Oerlikon Barmag products and to opt for a comprehensive, integrative manufacturing solution was the result of his overarching business objective: "We wanted to strengthen our market position within the specialty segment with premium technology, something that we have now achieved. The key to this was, and remains, controlling the entire process chain; in other words, also the integration of the polymer manufacturing stage."

The in-house manufacture of PES polymer for yarn production alone has brought us a whole range of benefits: increased efficiency as a result of the independence from polymer supplier prices and delivery times; a combination of the required polymer components optimally tailored to the

end product; continual control over the product quality and the entire production process; no quality fluctuations when processing polymers supplied by different manufacturers.

From a production point of view, there is a whole array of possibilities: by

intelligently adapting the equipment, each CP system can manufacture up to 240 tons of high-quality PET polymers of the most varied characteristics (semi-dull, full-dull, bright, cationic dyeable) for specific market requirements per day. "The polymer transfer system is designed for the highest level of flexibility for transferring the three different types of polymer to the WINGS POY and FDY spinning systems.

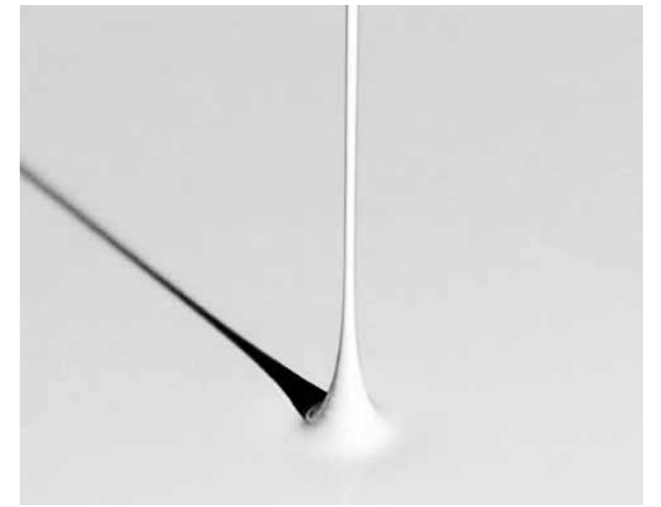
Various special valves, pipes, overpressure pumps and polymer coolers guarantee the transfer of high-quality polymers with the lowest-possible IV degradation from the CP systems to the spinning machines. Numerous switching options offer high flexibility in terms of the choice of polymer feed into the spinning pumps for producing four different types of polymer (full-dull, semi-dull, cationic dyeable, bright)", explains Jörg Langfeld, the responsible process engineer.

#### High flexibility, low energy consumption

In addition to this maximum flexibility, a further key factor for the success of the investment is the low energy consumption. The CP systems perform exceedingly well here, also in terms of their environmental friendliness. Emissions from the systems are collected and can be combusted in an HTM system (Heat Transfer Medium) to generate additional energy. The energy generated within the poly-condensation process is recouped using an absorption cooling unit that produces cold water not just for the CP systems. On balance, the entire process design complies with the strict German environmental stipulations, including TA Luft (Technical Guidelines on Air Quality Control).

And the further processing of the polymers into high-end textile yarn packages using the WINGS POY and FDY technology also generates benefits. The trailblazing, user-friendly concept is extremely space-saving, considerably shortens string-up times compared to conventional godet systems and ultimately permits faster production of tremendously homogeneous quality yarn with simultaneously significant energy savings. The well-known concept of the EvoQuench unit complements these savings with low air consumption.

The implementation project for this integration solution was carried out in record time. "The very-latest engineering instruments, such as 3D modeling, enable us to coordinate all technical and logistical aspects within the shortest possible time", sums up Frank Steinhaus, who was responsible for the project's commissioned engineering. For Wellknown, the benefits of the entire venture have been recorded in the presentation charts: improvement in the costs in terms of energy, dispatch and personnel; improvement in the margins in terms of product quality, operating safety and reliability, and tailor-made market solutions. "Integration is the key to success and has provided us with a competitive edge through cost leadership and improved capacity utilization", concludes Anil Gupta. (tho)



A seagull is shown in profile, flying from left to right across a bright, cloudy sky. The bird's wings are fully extended, showing a mix of white and grey feathers. Its head is turned slightly forward, and its yellow beak is prominent. The overall scene is bright and airy, with soft light filtering through the clouds.

**WINGS ...**

**... is getting  
even larger !**

WINGS POY now also with 1,800 mm chuck length

WINGS for POY is now available with a 1,800 mm chuck length and twelve or optionally 16 packages. With this, the new standard in POY production from Oerlikon Barmag has become a veritable high-flier.

**W**INGS, first launched at the ITMA 2007, established a whole new generation of winders. Actually, it achieved far more than just that: the winder was the first to integrate the draw field into the winder – a Winder INtegrated Godet System. More than 12,000 sold WINGS show just how successful the core POY component has been. Initially available as a ten-end take-up system, WINGS will in future ‘fly’ with twelve packages. However, this revolutionary filament spinning system concept has plenty more to offer: optionally, WINGS will also come in a 16-end version. Currently, a 12-end WINGS for polyester covers an operating window of between 30 and 300 denier.

#### 1,800-mm winder keeps the WINGS promise

As a product with a platform strategy, WINGS 1800 does not deliver any less than the other members of its family – it delivers more! To this end, a parallel lowering between the chuck and the contact pressure roll continues to be possible despite the length. This Barmag-typical winder technology is also the basis for the – for twelve or 16 packages – unique package build and ensures first-class take-off performance for each individual package in downstream processes.

Based on over 25 years of construction experience, the chuck technology has been systematically further developed. Here, the chuck – despite the more than 50% reduction in construction height of the clamp device and the resulting chuck diameter of 114 mm – retains all its well-known properties.

Package weights of 15 kg continue to be standard for a nominal stroke of 120 mm, whereas a nominal stroke of 86 mm in conjunction with a chuck diameter of 125 mm guarantees 10 kg packages. As in the case of all Barmag winders, the WINGS 1,800 can also be used without cardboard tubes all the way up to full speed – particularly advantageous for tests, maintenance and balancing. As a feature from the WINGS FDY technology, the new string-up device has been carried across. During initial string-up, after yarn break for example, this technology not only saves precious seconds, it also reduces waste.

#### Efficiency

To be able to make a comparison, Oerlikon Barmag engineers have calculated the efficiency of the machines and systems on a per-filament basis. To this end, the efficiency calculations show that the WINGS POY 1,800/12-end system requires less space per filament compared to the 1,500/10-end version. The difference in the required space for the zigzag layout of the spin packs is very noticeable (see sample calculation). A major part of the concept is the EvoQuench quenching system in conjunction with double-in-one (DIO) spin packs with the narrow zigzag layout. Both the EvoQuench and the DIO spin pack have a decisive impact on the energy consumption of the spinning system and therefore very much support efficient operation of the POY system.

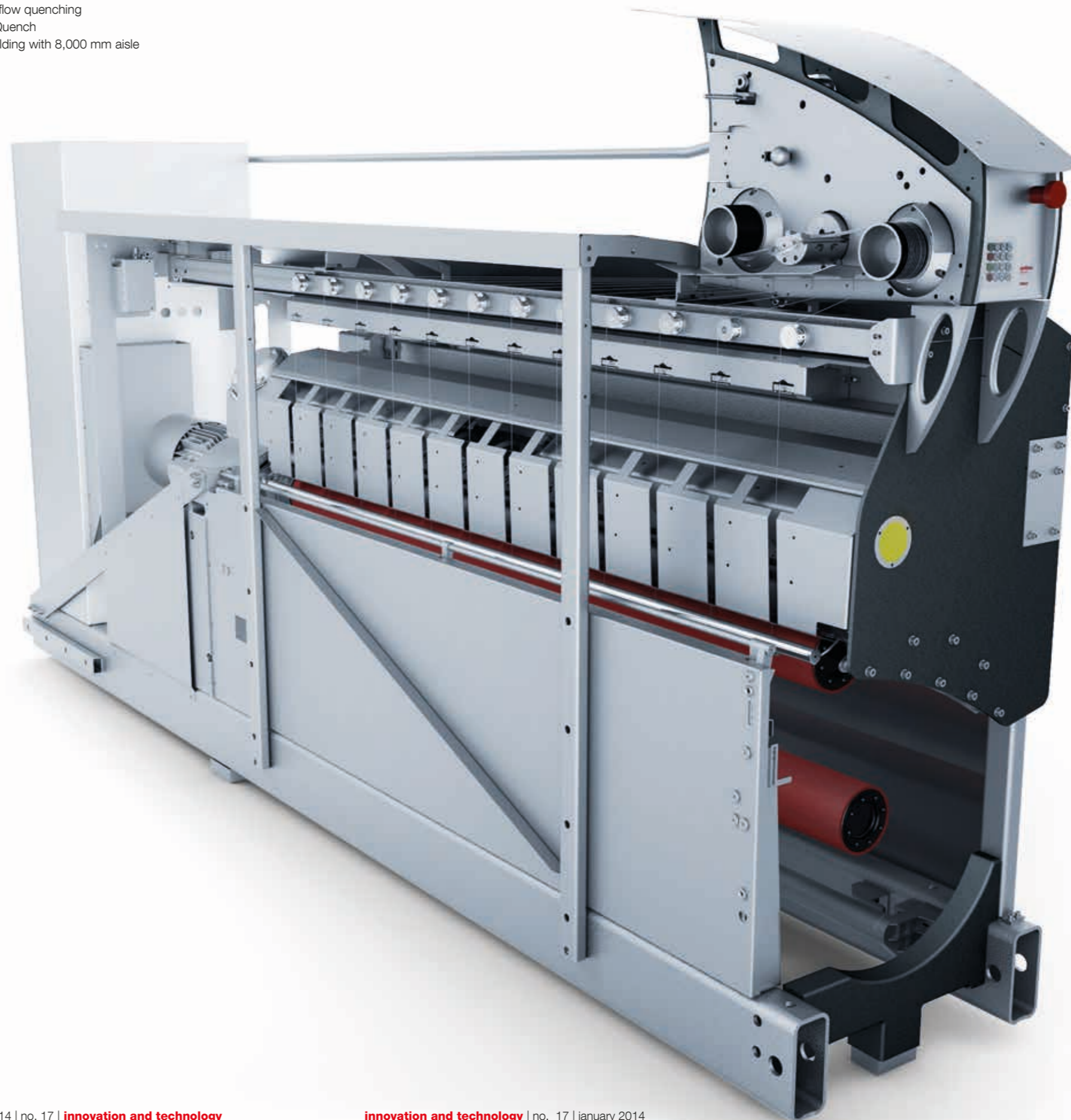
Therefore, the new WINGS for polyester clearly demonstrates that the innovation potential of its technology has by no means reached its end. (ad, bey)

#### WINGS 1500 vs. 1800

##### Space requirement and efficiency:

- 288 positions
- 104 DIO, EvoQuench
- 20-end or 24-end
- Inline: cross-flow quenching
- Zigzag: EvoQuench
- Standard building with 8,000 mm aisle

	1,500/20	1,800/24 line	1,800/24 zigzag
<b>No. of ends</b>	5,760	6,912	6,912
<b>Area total [m<sup>2</sup>]</b>	3,794	4,362.6	3,794
<b>Column pitch [mm]</b>	10,000	11,500	10,000
<b>Aisle [mm]</b>	8,000	8,000	8,000





Regional Sales Director Klaus Hufschmidt (left) was rather busy during the event: visitors were very interested in Oerlikon Barmag's latest innovations for tape production.

## 'Open House' event in Chemnitz A complete success

Film tape manufacturing was the primary focus of the Chemnitz 'Open House' event, which took place in parallel to the 'K' plastics trade fair between October 16 and 23. Head organizer Annett Hofmann sums up the event positively: "This was an extremely busy 'open house' with around 30 visitors from around 15 different film tape manufacturers. We conducted concrete discussions, which we have now been able to follow up with quotations and subsequent appointments."

Focal topics included polyester extrusion, carpet backing fabrics, geotextiles and BigBags. The new EvoTape FB9 film tape system in conjunction with the also newly-developed, automatic WinTape winding system proved to be particularly popular with the visitors. With a speed of up to 800 m/min, the EvoTape operates considerably faster than comparable systems available on the market. (bey)



Product Manager Dr. Ingo Mählmann (left) and his Chinese sales colleague Hallwean Zhang gave insights into Oerlikon Neumag's latest nonwoven technology.

## SINCE 2013 One base – many possibilities with the modular line concept for technical nonwoven applications

The latest developments in technical nonwovens were the focus of Oerlikon Neumag's presentation at the 15th Shanghai International Nonwovens Exhibition. For the first time, the show took place at the old EXPO 2010 location, with Oerlikon Neumag promoting its spunbond production lines for geotextiles, roofing underlayments and bitumen roofing substrates. Making the most of the 50-m<sup>2</sup> stand, the company once again showcased its 'Virtual Reality System', where prospective visitors took an in-depth 'walk' through of the latest meltblown, spunbond and airlaid technologies.

"Visitors were extremely interested, and I am thrilled with the quality of discussions conducted with visitors at this exhibition," stated Senior Sales Area Manager Chen Fang from Shanghai.

Nonwovens Product Manager Dr. Ingo Mählmann – accompanied by his Shanghai colleague Hallwean Zhang – also presented insights into the technical nonwovens market situation along with Oerlikon Neumag's technology and customer benefits at the 'Exhibitors Symposium' during the week. (ste)



The automatic WinTape winder (left) correlates perfectly with the new EvoTape system (right).

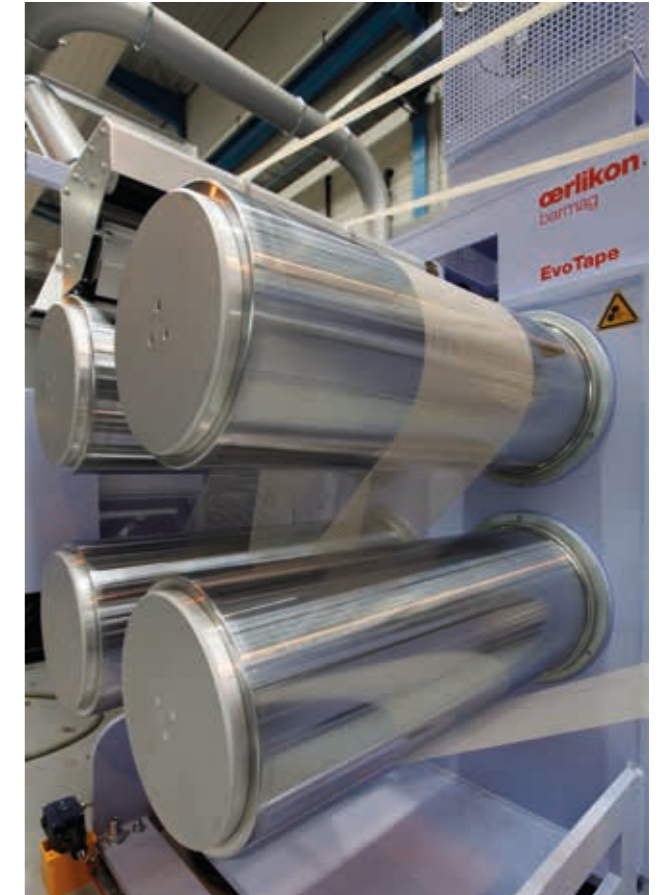
## Successful duo EvoTape and WinTape systems revolutionize tape production

EvoTape and WinTape are the new Oerlikon Barmag efficient tape production solutions. A completely new process enables profitability increases of up to 50 percent vis-à-vis conventional standard systems, with which the Chemnitz-based specialty yarn and extrusion specialist has managed a quantum leap in efficiency.

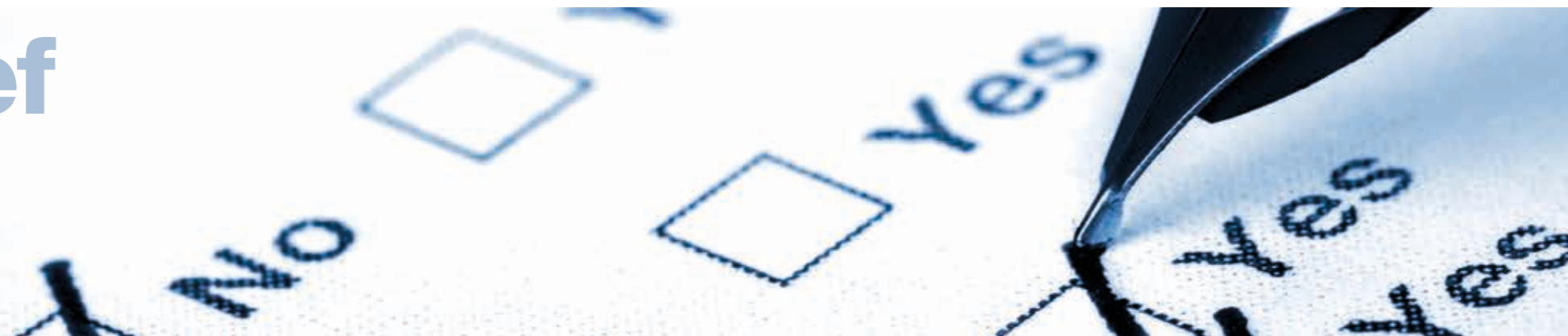
'More, faster' is the philosophy of the EvoTape tape system: with an operating width of 800 mm, the new development – first unveiled at the 'K2013' plastics trade fair – promises outputs of up to 800 kg per hour with up to 800 meters per minute.

Further features of the system include its extremely high process stability, a noticeably lower energy consumption and reduced raw material consumption due to the considerably improved tape properties.

The downstream, also newly-developed, automatic WinTape winding system also scores highly with its low level of operator involvement: the system operates without any operating staff for up to 24 hours. The automatic precision winder processes both single and dual tapes.



Its central control system with recipe management and supervision with protection against unauthorized changing as well as the electronically-adjustable crossing angles guarantees superlative package build. Its automatic package transfer and the storage of up to two full packages and up to four empty tubes ensure that the new WinTape winder has an outstanding price-performance ratio. (bey)



## WINGS POY

### 1,800 already successfully operating

The first 30 type WINGS POY 1,800, 12-end take-up machines were commissioned at the end of last year. Mr. Fang Xianshui, General Manager of long-term Oerlikon Barmag customer Zhejiang Hengyi, feels confirmed with regard to the quality of the polyester POY manufactured: "We are convinced by the technology leadership of Oerlikon Barmag's systems; this was crucial to our decision to purchase and a decision we arrived at very consciously." The global player, located in the Chinese silk province, has been putting its faith in Oerlikon Barmag technology and both companies have had a partnership-like relationship for many years now. With its over 8,000 employees and sales totaling more than US\$ 10 billion, Zhejiang Hengyi is considered one of the largest manufacturers of polyester filament yarn in China. The core competences of the private company, established in 1994, lie in PTA (purified terephthalic acid) manufacturing, polyester spinning and chemical fiber elasticizing. (bey)

## Oerlikon Manmade Fibers

### Strong player in China for 40 years

In early November, our Chinese colleagues celebrated a series of anniversaries: Oerlikon Manmade Fibers has maintained an office in Hong Kong for the past 40 years and the sales and distribution office in Shanghai looks back on a quarter of a century of tradition.

"The textile machine business has changed dramatically over the course of the past few decades", comments China Sales Director, Felix Chau, who – just like his colleague Wang Jun – has been with Oerlikon Barmag in China for 25 years now. "The markets have shifted; here in China, our customers' purchasing patterns and behavior have changed." So, some very exciting years in which China has developed into one of the world's most important markets – particularly for Oerlikon Barmag.

In parallel, the organization in China has been considerably reinforced: the Wuxi production site will be celebrating its 18th anniversary this year, while the plant in Suzhou was established 12 years ago now. In total, Oerlikon Manmade Fibers is supported by 5 sites and locations in the Middle Kingdom. (jg)



The ITMF conference was once more a forum for vivid discussions.

## 2013 ITMF Annual Conference

### Rebalancing the power between manufacturing and retail

The 2013 ITMF Annual Conference took place in Bregenz (Austria) from September 8 through 10, 2013 under the motto "Rebalancing the Power between Manufacturing and Retail". The objective of the conference was to provide an insight into the changing relationship between producers and retailers following the difficult and volatile business environment the global textile supply chain has faced. For this reason, the conference took a closer look at the role of e-commerce and social media in today's business models.

Topics that were discussed by the more than 20 international experts included dealing with sustainability, the influence of e-commerce and social media on the textile supply chain and the global market development for textile machinery, to name but a few.

Taking place between October 16 and 18, 2014, the location of the next ITMF Annual Conference is Beijing. As a result, the event will be co-hosted by the China National Textile and Apparel Council. (aw)

## Indian Polyester – 2013

### First polyester conference in India sets standards

The 1st International Conference 'Indian Polyester – 2013' took place in Mumbai, India, on August 23. The event, sponsored by Oerlikon Manmade Fibers and Uhde-Inventa-Fischer, attracted around 180 experts from the international polyester industry.

The exciting conference program was opened by R. D. Udeshi, President Polyester Chain, Reliance Industries, and Indian Oil Corporation Director Planning & Business Development A.M.K. Sinha. First-class speakers presented market insights and innovative technologies along the entire textile value added chain.



Oerlikon Barmag's Product Manager Markus Reichwein spoke on efficient production technologies for the apparel industry.

From the Oerlikon Manmade Fibers ranks, Markus Reichwein, Product Manager Apparel, spoke on the topic of 'efficient production technologies for the apparel industry'. Debrabata Ghosh, General Manager Sales at Oerlikon Manmade Fibers in India, gave a speech on 'the modernization of the Indian texturing industry with energy-efficient eAFK auto-doff machines'. (vai)

## Events

### Domotex

January 11-14, 2014, Hanover, Germany  
[www.domotex.de](http://www.domotex.de)

### Oerlikon Neumag BCF Symposium

January 15, 2014, Neumünster, Germany  
[www.oerlikon.com/manmade-fibers](http://www.oerlikon.com/manmade-fibers)

### Heimtextil

January 8-11, 2014, Frankfurt Germany  
[www.heimtextil.messefrankfurt.com](http://www.heimtextil.messefrankfurt.com)

### Vision® - Consumer products conference

January 27-30, 2014, Dallas, TX, USA  
[www.inda.org](http://www.inda.org)

### JEC Composites Show 2014

March 11-13, 2014, Paris, France  
[www.JECcomposites.com](http://www.JECcomposites.com)

### Domotex Asia

March 25-27, 2014, Shanghai China  
[www.domotexasiachinafloor.com](http://www.domotexasiachinafloor.com)

### SYFA Conference

April 3-4, 2014, Charlotte NC, USA  
[www.thesyfa.org](http://www.thesyfa.org)

### index14

April 8-11, 2014, Geneva, Switzerland  
[www.index14.ch](http://www.index14.ch)

### inglemash 2014

April 22-25, 2014, Moscow, Russia  
[www.inlegmash-expo.ru](http://www.inlegmash-expo.ru)

### Techtextile North America

May 13-15, 2014, Atlanta GA, USA  
[www.techtextilna.com](http://www.techtextilna.com)

### ITMA Asia

June 16-20, 2014, Shanghai China  
[www.itmaasia.com](http://www.itmaasia.com)

Oerlikon Barmag at the 'K' 2013

## Efficiency in focus

With 3,200 exhibitors and 218,000 trade visitors from 120 different countries, the 'K' plastics trade fair in Düsseldorf was once again THE industry event of the year. Between October 16 and 23, Oerlikon Barmag exhibited in two halls, showcasing pump construction and extrusion system innovations.

### New tape production process sets standards

New tape production solutions were the primary focus of the Chemnitz-based specialty yarn experts in Hall 16: with profitability increases of up to 50 percent vis-à-vis conventional standard systems, Oerlikon Barmag has managed a quantum leap in efficiency. This increase in efficiency has been made possible by the revolutionized process in the new EvoTape tape system in conjunction with the also newly-developed, automatic WinTape winding system. At the 'Open House' event – which took place at the Chemnitz site in parallel to the trade fair – interested customers were able to inform themselves of the benefits and advantages of the company's new developments. Steffen Husfeldt, Head of Sales and Managing Director of the Chemnitz plant knows full-well that the event at the Chemnitz R&D center perfectly complements the trade fair: "Our customers want to see the systems and equipment in operation and look concretely at the details with our specialists. Hence, an 'Open House' event offers completely different possibilities to a trade fair."



### Pumps for the plastics industry

In Hall 10, Oerlikon Barmag's pump specialists presented the new high-speed extruder pump, which generates higher throughputs for lower investment. The higher speeds permit a considerably greater throughput adjustment range with simultaneously lower pulsation. Furthermore, the reduced friction surfaces ensure lower melt temperature increases and hence more efficient and energy-saving production.

Furthermore, Oerlikon Barmag showcased the GM Control system, a self-sufficient metering unit that it premiered at the end of last year. With this, the leading provider of gear pumps has responded to the demand from many users for an easy-to-operate plug-and-play version of the company's proven series of GM metering pumps. The unit can be directly controlled, but can also be retrofitted to existing process control units. (bey)



Oerlikon Barmag presented its latest innovations for the tape production (left) as well as its pump technology for the plastics industry (right).

52<sup>nd</sup> Dornbirn Manmade Fibers Congress

## Meeting the global challenges of future

800 participants from more than 30 nations discussed the global social and economic challenges at the 52nd Dornbirn-MFC held between September 11 and 13. With this, the number of visitors reached a record level. This time, a disproportionately-high number of attendees came from Korea, Taiwan, Turkey, France, Portugal, and Italy.

"The enormous potential of the manmade fiber industry for innovation and bandwidth of performance will develop valuable contributions to save our environment and resources through sustainability, energy- and cost-saving production methods and processing. This will also be the gateway to completely new fields of applications. In order to shape and design a future worth living in, younger generations will be encouraged to take part", stated the MFC organizer at the press conference.

The new cooperation with the national roof organizations in Japan, the JCFA, and Korea, the KOFOTI, has been growing in importance. Both countries were represented by high-ranking delegations and lecturers. The traditionally excellent cooperation with the AFMA/USA, the CIRFS/Brussels, the IVC/Frankfurt and the EURATEX/Brussels were underlined by some parallel meetings during the MFC.

The opening speech in the plenary session was held by the President of the Austrian Manmade Fibers Institute, Friedrich Weninger, giving an overview on current factors and developments that will considerably influence the further economic success of manmade fibers. Karlheinz Rüdiger, Vice Governor of the Province of Vorarlberg, delivered a welcome address to the participants. Dr. Christian Schindler from the ITMF (International Textile Manufacturers Federation), which staged its annual meeting in Bregenz immediately before the start of DORNBIERN MFC, delivered another welcome address. For the first time, it was possible to have an exchange of ideas involving users of cotton and manmade fibers.



Dr. Stephan Walter (left), RWTH Aachen, was awarded the 2013 Paul Schlack Prize and Till Batt (right), ITV Denkendorf, received the Honorary Prize. Both have been supported in their research projects by Oerlikon Barmag in China and Oerlikon Neumag in Neumünster.

Giulio Bonazzi, President of the CIRFS (European Manmade Fibres Association, Brussels), spoke about the European manmade fibers industry and how it will meet the challenges of tomorrow's world, followed by Professor Hilmar Fuchs, from the STFI/Chemnitz and member of the Paul Schlack/Wilhelm Albrecht Foundation. He presented the 2013 Paul Schlack Prize to Stephan Walter from the RWTH Aachen in Germany for his work 'Development of piezoelectric sensor fibers based on polyvinylidene-fluoride', which he presented in a short version. The Honorary Prize was awarded to Mr. Till Batt from ITV Denkendorf in Germany for his work on 'Economical production of ultrafine thermoplastic fibers for filtration'.

### Enlarged spectrum of lectures for a better overall picture

There were a further 104 separate lectures on the main topics of 'Sustainable solutions for the fiber industry', 'Fiber innovations', 'Unconventional fiber applications', 'Finishing', 'Sportswear and functional wear' and 'Market specials', presenting a unique cross-section of the innovative potential and vast applications harbored by the manmade fiber world. The 'Who's Who' of academic research, the fiber industry and the processing chain were represented with their latest developments, key technologies and visionary outlooks.

### Further cooperations planned for 2014

In 2014, the cooperation with further roof organizations and leading industrial companies will be intensified. An additional topic is the increased cooperation with universities/research institutes/clusters in Europe, the Americas, and Asia. This will ensure the continuous expansion of the MFC as a communication platform for the international fiber world. (aw)

The next MFC will be taking place between September 10 and 12, 2014, focusing on the following topics:

#### Fiber and filament innovations

(Oil- and bio-based fiber raw materials, carbon fibers / others, functionalities, unconventional applications, waste management...)

#### Nonwovens and filtration

Automotive (transportation - train / ship / air) key technologies (finishing, coating, spinning / extrusion)

#### Market specials and new business models

In case of participations from our side please contact: office@austrian-mfi.at



# Hidden champions

**Around half the world**  
Systems and components  
en-route to the customer

Most Oerlikon Manmade Fibers systems and machines embark on substantial travels before reaching the customer. By plane, ship, truck or courier, they have in part traveled halfway around the world, although you would never be able to tell by simply looking at them.

And this is precisely how it should be, as life for the high-tech products begins in earnest when they arrive at the customer. As of then, they must operate perfectly and manufacture the highest quality virtually non-stop. Sophisticated logistics ensure that the high-performance machines reach their destination both on time and in excellent condition. This is the work of the 'Export & Import Administration' department at the Oerlikon Manmade Fibers site in Remscheid.

The twelve members of staff under the guidance of Jochen Könemund are true export experts.

There are specialists for each country to which Oerlikon Manmade Fibers exports products. These specialists have expertise in specific requirements – be it sea freight, air freight or courier – and have comprehensive knowledge of their respective areas. They coordinate the national and international dispatches both from the Remscheid site and within the international Oerlikon Manmade production network. Other employees focus their work on export control, origin of goods and preferences as well as import processing.

Determining the origin of goods and the preference of goods enable customers to import the machines with considerably reduced customs charges. In part, the fees are dropped entirely. The employees draft the documentation required for importation, therefore supporting customers with the extensively smooth importation of their goods.

**"Maintaining our 'known sender' status is a major part of our work."**

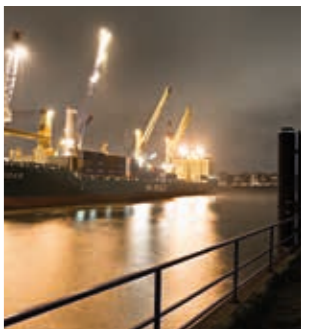
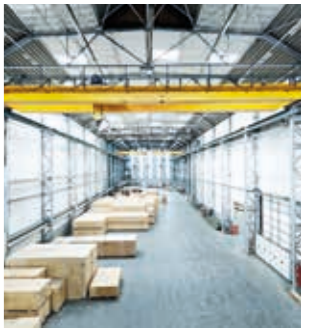
#### **Success factors: safety and speed**

The legal requirements in terms of safety and safeguarding people and/or goods during air transportation have increased substantially over the past few years. Today, worldwide goods flows are subjected to considerably greater controls and checks – a further important topic for the 'Export & Import Administration' department.

As an export-heavy company with approx. 600 tons of air freight per annum, Oerlikon Manmade Fibers has been certified as a 'known sender' by the Luftfahrtbundesamt (LBA/Federal Office of Civil Aeronautics) since early 2013. This offers both the company and the customers several benefits: the new time-consuming checks at the airport are circumvented;

the freight is not subjected to additional safety checks; there are no problems with the warranty as the original product packaging does not have to be opened for further checks. Jochen Könemund: "We are obligated to ensure and verify how we protect our air freight against third-party access – and this throughout the products' entire passage: from the manufacturing stage, warehousing, packaging through to the dispatch to the airport." Berta Körte, Export Control and Air Freight Security Officer at Oerlikon Manmade Fibers, who accompanies the project across all sites, adds: "The processes that we have now established must be constantly checked and monitored and brought in line with the latest legislation. Maintaining our 'known sender' status is a major part of our work."

To ensure that the Oerlikon Manmade Fibers machines continue to reach their new owners on time and are able to assume their operation in the future. (wa)



The twelve members of the "Export & Import Administration" department under the guidance of Jochen Könemund (front row middle) make sure that machines and components reach their new owners in time.



NILIT's General Manager Zion Ginat (left) and Director of Operations Yariv Gratz (right) enjoy a long term partnership with Klaus Kürten, Sales Director at Oerlikon Barmag.

# Dedicated to innovative nylon 6.6 solutions

## Interview with the NILIT management-team

Founded in 1969 and headquartered in Migdal HaEmek, Israel, NILIT today is a fully integrated manufacturer of nylon (polyamide) 6.6 for thermoplastics and apparel applications. For more than 40 years, the company has been customizing nylon 6.6 solutions to help the customers meet the demands of an increasingly competitive market. Operating in more than 70 countries, NILIT's motto is "no customer is too small, too big or too far away." Fibers and Filaments talked to NILIT's management team.

NILIT has been a successful player within the manmade fiber sector for decades now. What do you believe are the decisive factors for this achievement?

Noam Livni: "We, at NILIT, believe that there are essential factors that determine our global positioning and are vital to our future achievements, growth and development. These are our values:

**Excellence** – we believe that achieving our goals depends on the individual performance of each and every employee. As a result, NILIT has created a corporate culture that inspires excellence in all endeavors and at every level, from line workers to senior engineers. We manage an 'Excellence Program' that is embraced by all NILIT employees around the globe. There are dedicated groups

dealing with specific projects focusing on improvement of procedures, processes and innovative solutions in our daily chores. We constantly encourage excellence in every field at NILIT.

**Integrity** – honesty, trust and credibility must be the basis of all relationships with our employees, our customers and our suppliers.

**Quality** – at NILIT, we believe that quality pays for itself. Therefore, we constantly strive for excellence in both product and service quality.

**Commitment to nylon** – from the beginning, NILIT has focused on nylon 6.6. We are true specialists in our field and committed – in resources, investments and spirit – to advancing the entire nylon industry.

**Innovation** – NILIT is a global leader in innovation and trend setting. We take pride in thinking, creating and designing tomorrow's nylon 6.6 yarns and ensure that plants are always equipped with state-of-the-art equipment. Our customers are often inspired by our latest innovations, among other things: NILIT BREEZE (the cooling yarn), NILIT ECOCARE (the only patented recycled nylon 6.6 yarn). "

NILIT is a globally-active enterprise with subsidiaries in seven different countries. In the spring of this year, you expanded your business facilities at your Suzhou/China location. What do you manufacture there and what prompted you to embark on this expansion?

Fabio Kahn: "The new facility in Suzhou is a nylon 6.6 spinning factory producing a wide range of textile multifilament fibers. The plant utilizes the most advanced spinning machinery and technology. This new facility complements our already existing texturing plant, which has been serving our customers since 2008, when we made the decision to start manufacturing in China.

NILIT believes that, being a market leader, we should be close to our customers, providing them with excellent and flexible service of the highest quality. Adding the spinning capacity to our Suzhou site enables us to be much more responsive to ever-changing market needs."

You manufacture nylon 6.6 yarns, which are used in the production of high-end underwear, sports apparel and hosiery. What are your primary markets and how do you see the future development of these markets?

Michal Ron-Gavish and Fabio Kahn: "Being a market leader, NILIT is constantly monitoring the industry around the globe. Our strategy is based on developing high-end innovative solutions for our customers – anywhere and everywhere. We constantly strive to deliver added value for our customers' products through new properties for improved performance. Our backward-integrated process allows us to develop almost endless characteristics in the nylon molecule itself, enabling an extremely broad range of yarn features and performance.

Obviously, we are active in all the major nylon 6.6 markets worldwide with manufacturing facilities in Israel, the US, China and Brazil.

The future of the nylon 6.6 market will be in its ability to continue to provide added value to the final consumer based on its unique properties. We will see these developments in high tech to high fashion in intimate apparel, outdoor and sportswear. The ability to enhance and deliver greater comfort and better performance for the human body will be a hallmark of the future. Everyone is looking for apparel that 'works' with, and for, their body."



The Israeli yarn manufacturer NIIT is specialized in polyamide 6.6. The company is fully integrated from poly-condensation via spinning to texturing.



'Fibers and Filaments' spoke to the NILIT management team about values and visions. Apart from General Manager Zion Ginat and Director of Operations Yariv Gratz these were Noam Livni (top), Assistant to General Manager, Michal Ron-Gavish (middle), Global Marketing Manager - Fibers Division, and Fabio Kahn (bottom), Managing Director - Fibers Division.

NILIT and Oerlikon Barmag have also had a trust-based relationship for decades now. You only recently invested in further eAFK machines at your production site in Israel. What are the primary reasons for this long-term collaboration between the two companies?

Yariv Gratz: "Our partnership was established more than 30 years ago and is based primarily on common values: values of integrity, hard work, and the endless striving for the highest technology and quality. This is a very unique and trustful relationship.

The professionalism and quality that has been demonstrated by Barmag over these many years, the quality of the equipment, the careful design and the excellent engineering have helped NILIT achieve its business goals. The relationship between our two companies' teams, both the commercial and technical, has always been very open and sincere, based on common interests.

At NILIT, we are confident that we have a partner we can rely on, a partner who is committed to our success and is approachable with any technical issue at all times.

The working relationship between the companies enables NILIT to develop the right processes to support high-quality products which are essential for our customers. This was only possible with the support and knowledge of the Barmag technical team and its willingness to accommodate NILIT's special demands."

Looking into NILIT's future: where do you see the main focus and the challenges in order for the company to continue developing successfully?

Zion Ginat: "Our company's strategy over the past few years has been to concentrate on markets and regions in which we see potential to grow our global market share. The global markets are very competitive and challenging. In order to succeed, we must continue our efforts to get closer to our customers and their needs, improving service, increasing flexibility and expanding our product range.

We must remain highly-competitive by constantly seeking better technologies and improving our manufacturing facilities.

We believe that the innovative approach is a key factor for our success. Customization and creativity, followed by excellent execution in our everyday activities, are absolutely essential.

Success and excellence mean believing that it is always possible to do better. These translate into innovation, creativity and commitment to excellence in every aspect of the business. This is the culture we have tried to create at NILIT."

Thank you for talking to us! (kü)



With the reorganization of its worldwide after-sales activities, the Oerlikon Manmade Fibers segment is pursuing a central issue: increasing customer benefit. The new, expanded range of services is targeted at improvements such as more intensive communication, increased availability and shorter delivery times. These are all part of a pledge to the customer: a closer partnership for superior service performance.

**T**ough competition is making things ever-harder for manufacturers to earn money with their products and be profitable. This makes service all the more important. Because only by ensuring consistently smooth production and high levels of efficiency in all areas of manufacturing can market players achieve high productivity and growing margins.

Against this backdrop, the Oerlikon Manmade Fibers segment, with its companies Oerlikon Barmag (filament yarn systems, texturing systems) and Oerlikon Neumag (staple fiber, nonwovens and carpet yarn systems), carried out in-house workshops in March 2013. These focused on explaining and discussing market requirements, in-house technological offerings and improvement potential within the global after-sales service structure. Customer interviews followed in June and July: we joined forces with an external consultancy to survey nine and five top key accounts in China and India respectively on their requirements. Furthermore, customer surveys were carried out in Turkey and the US.

The interviews revealed one very clear finding: "Our customers would like closer liaison, more support and a tighter service partnership. This has confirmed our own considerations and conclusions", sums up Marcel Bornheim, Vice President and Head of Customer Support at Oerlikon Manmade Fibers. In particular, important customer requirements relate to the availability of spare parts, delivery times for orders and the execution of repair work. Many recommendations provided by those surveyed focused on more intensive support, better communication and closer customer proximity

in the event of problem solving and optimization plans as well as greater on-location presence at the plants. "We have taken these wishes on board and have launched a corresponding reorganization of our customer support set-up", states Marcel Bornheim, commenting on the development.

**Greater customer proximity and more service personnel**

The reorganization comprises comprehensive measures: among other things, the local inventories are to be increased to improve availability and shorten delivery times. To be able to offer customers intensive service support in all fields – including consultation, modernization, upgrades and repairs – throughout the entire life of the machines, we are planning to increase the number of staff and expand know-how. The presence of service employees at the plants will also be increasing. And customers will also be better informed about important offerings such as solutions for increasing efficiency, upgrades, follow-up technologies and maintenance recommendations, for instance, and will be accompanied in their implementation and execution.

The reorganization and expansion of the service offerings will be carried out worldwide, with many of the planned measures starting in the first quarter of 2014. "With this, we want to show that we are doing everything – today and in the future – we possibly can to be the right service partner with the best solutions in order to help improve the performance of our customers, even following installation of the machines themselves", promises Marcel Bornheim. (tho)

# Well-oiled cogs



It is particularly apt when talking about project management: the familiar image of lots of cogs that have to interact with each other as smoothly as possible to ensure success and customer satisfaction. At global player Oerlikon Manmade Fibers, project management demands interdisciplinary competencies in many areas. Here is a glance behind the scenes of the project world in which forward-looking planning and rapid-response problem solving assume the same significance.

“Basically, something unexpected always happens with projects.” And Michael Scholz should know. He is the Head of Project Management at Oerlikon Barmag, the global market leader for filament yarn systems and texturing equipment. Their implementation and the required plant design for customers across the globe demand the highest levels of planning and organization – particularly due to the fact that incidents can never be ruled out.

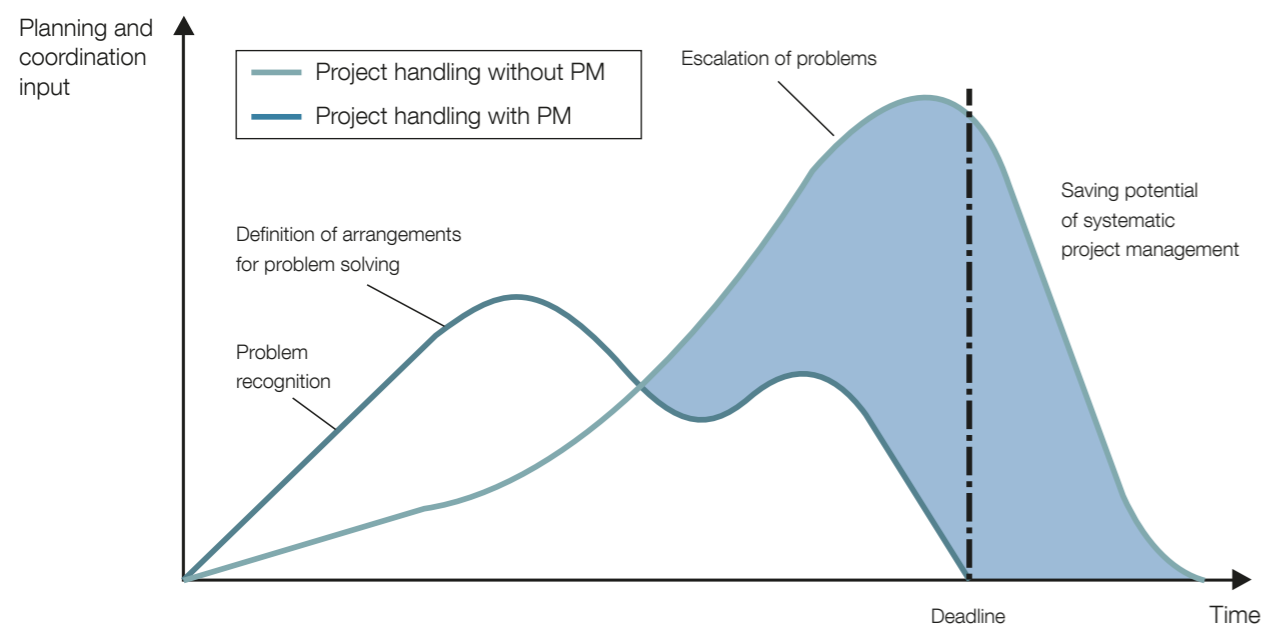
For example, what happens when there are interruptions in parts procurement, i.e. the supplier’s production machines break down? This could even severely impact on several projects at the same time. “We must nevertheless ensure a punctual production start for our customers”, emphasizes Michael Scholz. “In cases like this, all affected project managers must be informed immediately. They will sit down at a table post-haste for a detailed planning meeting so as to prevent a commissioning delay as far as possible.” Early technical and logistical fine-tuning with our customer immediately after signing contracts is the decisive foundation for punctual delivery. For this, the project manager organizes a design conference during which the hall planning and the specification of all utility connections, for example, are defined and agreed. A remarkable statistic proves that this actually works: at Oerlikon Manmade Fibers, the degree of delivery reliability – or more accurately, the Key Performance Indicator (KPI) – comes in at around 99 percent, something that is also very much the result of project management, which was introduced to the company in 1996.

Oerlikon Manmade Fibers always regards a project as an autonomous organization. In other words, an independent budget, team and tasks and objectives are defined for each and every project. Key factors for successful project management processes are reliable and systematic planning and steering, continual monitoring and the early initiation of countermeasures in the event of deviations from plan.

#### Professional software

Here, the professional ‘Can Do’ software project management provides support with planning control, progress monitoring and resource management. It provides greater transparency, enables the optimized deployment of personnel and permits work with realistic planning methods. An integrated workflow module automatically sounds an alarm – when tasks are not concluded within the defined period, for instance. With this centralized software, all departments involved in any project are synchronized; around the world, approximately 100 authorized users access the corresponding program server.

There is a further, even more important interface that brings all threads together: the project manager. He is the primary contact partner for customers throughout the entire project implementation and the first port of call for all important issues relating to the systems, machines or questions regarding export, the construction site or commercial topics. He is responsible for all technical and commercial factors. “A customer will never hear the project manager say: Sorry, but that is not my responsibility”, comments Michael Scholz succinctly.



By systematically planning the project process within the context of the initial phase and later during implementation, risks are identified early on and made manageable using appropriate measures.



Intercultural communication skills belong to the key competencies of the project manager.

Project managers of course also need, and receive, professional rear cover from numerous experts. They have excellent contacts with all departments, from Research & Development, Engineering, Production and Sales & Distribution all the way through to Dispatch and Installation. This is the prerequisite for optimum execution of the projects and customer satisfaction.

As a team leader, the project manager must lead all parties involved towards the declared objective of the project. “This diverse task demands an outgoing personality with interdisciplinary training. A good project manager communicates a lot and must be able to quickly initiate decisions in the interest of the project if necessary”, emphasizes Paul Völpel, Head of Engineering at the Oerlikon Manmade Fibers segment, adding: “Skills such as flexibility, creativity and a well-defined sense of cross-cultural communication are also very important.”

#### Global and local competence

This is particularly evident in our global business, which is basically always local as well. Because country-specific rules and regulations can absolutely delay a project; for example, when export guidelines are not known or whenever the machine design does not correspond to the special directives of the destination country. “And this is always one of the reasons we work intensively within our global network. We are particularly well ‘equipped’ with a highly-qualified team in our primary markets of China and India, countries in which we profit from the diverse local competencies”, comments Michael Scholz. It is for these reasons, for instance, that 70 percent of all projects in China are accompanied and steered by a Chinese project manager, who functions

as the main responsible party. This offers benefits: ultimately, the project manager must visit the customer regularly in person. At the same time, he is in close contact with his project management colleagues at the German headquarters.

Customers, however, not only profit from the fact that they have access to a qualified project manager as their contact partner throughout the entire project. Systematically planned and executed project management processes – from the kick-off phase all the way through to production start – generate a whole range of advantages. These processes allow potential risks to be identified early on and mastered with suitable measures. This ensures that unidentified or unprocessed problems do not stack up towards the end of a project and then result in the need for any inordinate deployment of resources. Project management prevents this form of escalation, hence minimizing unforeseen additional costs. Furthermore, it offers customers consistent transparency at every stage of the project.

And last, but certainly not least, project management also generates internal benefits. To this end, this function is embedded in a matrix organization together with a classical departmental structure at Oerlikon Manmade Fibers. To ensure this system operates optimally, all parties involved carry out their responsibilities on the basis of defined rules and agreements. Nevertheless, typical overlaps may occur because employees are working for both their respective departmental managers and for a project manager. “Mastering situations of this kind smoothly is a skill that we have developed into a fine art. Project management has helped us optimally utilize both resources and personnel”, assures Michael Scholz. (tho)

Health, Safety & Environment

# HSE

Three letters, plenty of opportunities



The Health, Safety & Environment (HSE) trio is moving ever more companies throughout the world. And with good reason: employers who actively and sustainably look after their staff and the environment increase productivity, competitiveness and their image value and increase their attractiveness in the quest to recruit qualified people. To this end, holistic HSE approaches integrated within the company structure are increasingly convincing companies.

**W**hether HSE or EHS – the flexible acronym is setting a trend. Within the context of globalization and growing competitive pressure above all, companies are increasingly realizing that they must in future orientate their work more on the needs of people and the environment – and not merely the other way around. If they fail to do so, the Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA – Federal Institute for Occupational Safety and Health), for example, will continue to report bad news: in 2011, every employee in Germany was officially off sick for an average of 12.6 days – 1.3 days more than in the previous year. Correspondingly, production downtimes resulted in losses totaling € 46 billion. These statistics reveal massive challenges, such as increasing work intensification, excessive stress, increasing depression among citizens and an aging population. The World Health Organization (WHO) estimates that the financial damage caused by occupational sickness and accidents accounts for 4 percent of global gross domestic product.

And there is also need for action on the environmental front. In many countries, there are diverging rules and regulations for climate and environmental protection. And occupational safety also harbors the most varied statutory regulations. Here, global players in particular must ensure worldwide compliance, identify risks and operate sustainably. To fulfill such diverse and complex requirements, there are international environmental standards such as ISO 14001, ISO 14040/44 and ISO 14067 as well as a whole range of increasingly interwoven management systems.

Larger companies, above all, orientate themselves on comprehensive corporate social responsibility principles and establish holistic HSE programs or even departments targeting the integrated drafting, coordination and execution of activities relating to occupational safety and health and environmental protection. In addition to typical occupational safety measures, such as accident prevention seminars, companies are meanwhile developing attractive health offer-

ings targeted at achieving an appropriate work-life balance as well as at strengthening motivation and performance – from Zumba classes at in-house fitness centers, child care to relieve working parents all the way through to € 100 annual bonuses for non-smokers. Businesses are voluntarily investing considerable sums to keep rare, qualified employees healthy or recruit them in the first place: mail order company Otto, for example, invests € 2.2 million annually on behalf of its 30,000 employees, while Volkswagen spends the princely sum of € 130 per member of staff, according to a study carried out by the Europressdienst (Europress Service) in Bonn. The rewards include reduced absenteeism, lower fluctuation rates and higher productivity.

Improving one's corporate image is a further benefit of such activities, something that manifests itself above all when it comes to the topic of the environment. Ever more companies are drawing up ecological balance sheets, or 'carbon footprints'. These are used not just to assess the impact of

products, processes or the entire business on the environment or climate. Ecological commitment has become an obligation for many companies ever since special organizations and the media have been keeping an eagle eye on environmental abuse – also with the aim of scoring highly in various rankings. To this end, 'green awareness' has produced some exciting findings: just one year of making telephone calls and surfing the Internet on a specific Deutsche Telekom tariff is responsible for just under 90 kilograms of carbon dioxide emissions, according to calculations by the researchers behind the 'Product Carbon Footprint' pilot project. (tho)

oerlikon  
barmag

oerlikon  
neumag

## imprint

Fibers and Filaments is the exclusive Oerlikon Manmade Fibers customer magazine. It is published three times per year by

### Oerlikon Textile GmbH & Co. KG

Leverkuser Straße 65  
42897 Remscheid  
Germany

fibers.filaments@oerlikon.com  
www.oerlikon.com/manmade-fibers

### Edition

2,500 copies

### The authors

Fibers and filaments is a compilation of articles provided by specialists for each respective subject. The articles are indicated by tokens attributed to the various authors:

ad	Jochen Adler
aw	André Wissenberg
bey	Susanne Beyer (responsible)
jg	Jessica Gegner
tho	Thilo Horvatitsch
ste	Rickey Steele
vai	Atul Vaidya
kü	Klaus Kürten
wa	Ute Watermann

### Guest writers

In addition to Oerlikon Manmade Fibers' authors external specialists contributing articles to this magazine are:

ae Andreas Engelhardt  
(The Fiber Year)

### Concept and layout

devoti.künne gmbh & co. kg  
www.devoti-kuenne.com

### Print

Köllen Druck + Verlag, Bonn  
www.koellen.de

### Photography

Ralf Buchholz, Rickey Steele,  
Damian Poffet, company archive,  
istockphoto, private

### Disclaimer

All indicated values and descriptions in this document are for indicative purposes only and not to be understood as a guarantee. Please note that actual values may differ from any data published in this document.

### Electronic version (PDF)



In addition to the full compensation of the CO<sub>2</sub> consumption connected with the printing processes Oerlikon Manmade Fibers used a high class recycling paper due to its demand for sustainable economy. The print version of this brochure is printed on "revive" by Deutsche Papier.

Print  compensated  
Id-No. 1334428  
www.bvdm-online.de