

# fibers and filaments

the experts' magazine

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## Textile tales from the Orient

### Portrait of four textile countries in the Middle East

The wealth of the region no longer lies in manufacturing textiles as the reports from Egypt, Iran, the United Arab Emirates and Saudi Arabia showcase.



## More customized solutions for staple fiber production

### Talking to CEO Georg Stausberg

With the acquisition of the staple fiber division of Trützschler Manmade Fibers, Oerlikon Neumag strengthens its portfolio of staple fiber technology.



*"Our customers' success is very important to us and is based on excellent product quality at low operational costs. Together with them, we are developing innovative spunbond solutions."*

Johanna Brunner  
Process Engineer, Oerlikon Neumag



## Get more for less – reduce your conversion costs up to 30%

Want the highest quality for the lowest costs?  
Our innovative spunbond solutions offer you:

- A reduction of your conversion costs of up to 30% compared to traditional spunbond lines
- Savings in raw material consumption of at least 5%
- Product quality levels better than conventional products available on the market



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## In focus



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## Editorial



Dear Customers, dear Readers,

We are thrilled to present you with a Special on the Middle East textiles region in the form of this edition of Fibers & Filaments. This is a region experiencing exciting development despite its comparatively small market volume. Here, each of the four countries showcased has a very specific starting position; and the future plans for Iran, Egypt, Saudi Arabia and the United Arab Emirates are equally diverse.

There is activity in all four countries, but a strong pioneering spirit is detectable particularly in Iran. A VDMA symposium held last fall already alerted the industry to the country's increased need for German machines and systems and the pent-up demand following years of sanctions is immense. A great example of this is Savis Spadana, a company that recently successfully commissioned POY systems with WINGS for manufacturing high-quality yarn specialties.

And specialties are currently particularly in demand. For this reason, this edition showcases our innovative technologies for manufacturing bicomponent filaments and mother yarn. Here, the spotlight lies on their efficient manufacture.

But we have also expanded our portfolio of solutions for producing staple fibers: read about how the takeover of the Trützschler staple fiber technology will benefit our clientèle.

As a solutions provider, one of our focuses is on the aftersales service market. With our onsite maintenance workshops, we are able to provide customers with local support. You can read how this works in detail on Page 30.

We hope you enjoy reading this edition of Fibers & Filaments.

With best regards,

Georg Stausberg  
CEO Oerlikon Manmade Fibers Segment

## Outstanding results from DOMOTEX asia/CHINAFLOOR 2016 S+ and RoTac keep attracting BCF yarn producers

The 18<sup>th</sup> edition of DOMOTEX asia/CHINAFLOOR took place on March 22-24, 2016 at the Shanghai New International Expo Center, gathering 1,303 exhibitors from 39 countries and attracting more than 50,000 trade visitors from more than 110 nations. An increase of 9.3% in the visitors' number compared to last year, which was reflected at the Oerlikon Neumag booth resulting in even more visitors than may have been expected, clearly showing an upward trend in the carpet sector.

Oerlikon Neumag displayed its diverse range of products and services with a strong focus on solutions for the efficient manufacture of carpet yarns. Main point of attraction was the S+ BCF system as well as the new tangle unit RoTac<sup>3</sup>. The exemplary success of the S+ BCF system over many years clearly shows that there is also a focus



In China the carpet sector is on the rise. This is shown by the increased number of visitors at Domotex asia/CHINAFLOOR.

on efficiency in BCF yarn manufacturing. Since being launched in 2011, the S+ is the world's biggest-selling BCF

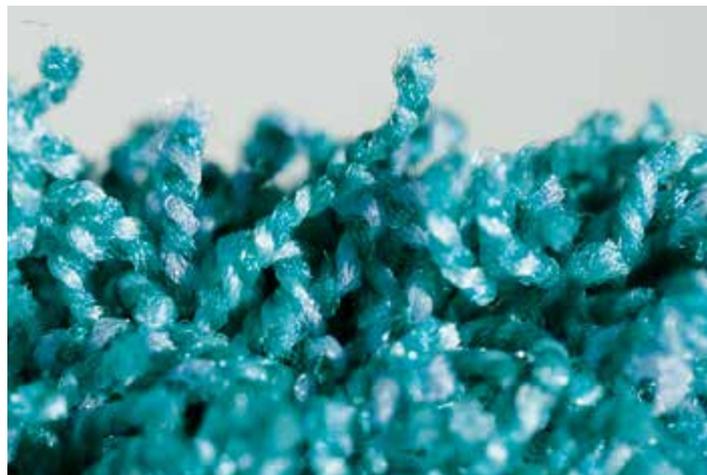
machine, efficiently manufacturing high-end BCF yarns across the globe. (rst)

### BCF market in Asia

#### Trend towards high-end yarns with fine filament titers

In Asia high end polyamide 6 BCF yarns with fine single filament titers are increasingly in demand.

Due to consumer behavior in the flooring segment, the Asian market has to date been considered a small market with a strong focus on contract products. However, there seems to be



turnaround taking place here: high-end PA6 yarns with fine single filament titers are increasingly in demand. The reasons for this are generally believed to be the extremely low price of oil and the newly-established PA6 capacities in Asia, causing a price fall of approx. 30% for PA6 granulate in the last six months alone. "The current market conditions particularly in China have resulted in low prices for PA6. In turn, this has created an extremely interesting new market for high-quality carpets. Our systems are particularly well-positioned in the premium-price segment, which explains the currently stronger interest in our systems especially within the Chinese market", comments Alfred Czaplinski, Sales Manager BCF at Oerlikon Neumag. (rst)



**ITM 2016, Istanbul, Turkey**  
**From Melt to Yarn, Fibers and Nonwovens**

The ITM 2016 International will be held at the TÜYAP Fair Convention and Congress Center, Istanbul, Turkey between June 1 and 4, 2016. More than 1,000 textile technology companies will be presenting their latest models in operation. ITM is the largest exhibition both in Turkey and the region and is also one of the most important exhibitions of its kind in the world.

The Manmade Fibers segment of the Swiss Oerlikon Group will be represented in Hall 3, Stand 312 (Tekstil Servis), with its two Oerlikon Barmag and Oerlikon Neumag competence brands. Here, Oerlikon is latching onto the successful product developments of the past few years. In addition to unveiling the strategic expansion within the polycondensation business by means of the joint venture with Chinese partner Huitong, the segment is above all focusing on offering its customers total manmade fiber spinning systems solutions. “From Melt to Yarn, Fibers

and Nonwovens’ is our maxim”, stated André Wissenberg, Head of Marketing, Corporate Communications and Public Affairs. “Currently, we are the world’s only manufacturer that has the know-how and the capacities to offer complex manmade fiber spinning systems for polyester, nylon and polypropylene from a single source”. Furthermore, Oerlikon Barmag will be showcasing ground-breaking innovations in the areas of POY/DTY, FDY and IDY filament spinning and texturing, as well as for the manufacture of monofilaments. Here, the focus is on further new product developments and optimizations in line with the Oerlikon e-save philosophy, which promotes the manufacture of products oriented on sustainability. Oerlikon Neumag will be concentrating on its BCF, staple fiber and nonwovens core competencies and presenting all interested visitors with the latest product developments by means of its virtual reality technology in a 3D showroom. (lka)

**Events**

**VDMA Symposium**

July 5-8, Ho Chi Min City, Vietnam  
[www.germantech-vietnamesetextile.de](http://www.germantech-vietnamesetextile.de)

**UTECH Asia**

August 2-4, Shanghai, China  
[www.utech-asia.com](http://www.utech-asia.com)

**Fujian China International Textile Machinery Fair**

August 12-14, Fuzhou, China  
[10times.com/jinjiang-fair](http://10times.com/jinjiang-fair)

**Caitme Uzbekistan**

September 7-9, Tashkent, Uzbekistan  
[www.caitme.uz](http://www.caitme.uz)

**Texmed Tunisia**

October 5-10, Tunis, Tunisia  
[www.texmed-tunisia.com](http://www.texmed-tunisia.com)

**Floor Tek**

October 18-20, Dalton, USA  
<http://floor-tek.com>

**ITMA Asia 2016**

October 21-25, Shanghai, China  
[www.itmaasia.com](http://www.itmaasia.com)



As in previous years Oerlikon’s segment Manmade Fibers presents its technologies on the stand of Tekstil Servis.

## Polyester prices reduce cotton's market share

The currently very low prices for polyester fibers have dealt the market share of cotton a severe blow. While polyester was 0.48 US\$/lb on average during the first half of the year, the mean price for cotton was 0.70 US\$/lb.



According to the PCI, China registered a 1.5% drop in cotton processing last year. In contrast, the country reported a growth in polyester staple fiber output totaling 1.5%. In India, the market for processing polyester staple fibers grew positively, expanding by around 10% in 2015, with cotton growing by around just 5%.

For the current year, experts anticipate an increase of around 1% for polyester staple fiber, with a simultaneous fall of about 2% for cotton in China. In India, slowing growth both for cotton and polyester staple fiber is predicted according to estimates: processing of cotton is expected to increase by 4%, while polyester staple fiber output is expected to grow by approx. 7%. (sr)

## Egy Stitch & Tex exhibition 2016

### Distinct movement within the Middle East markets

This year's Egy Stitch & Tex exhibition took place at the Cairo Conference Center between February 25 and 28. The international trade fair for textile, weaving, spinning, sewing, embroidery, knitting, dyeing & finishing machinery and accessories was a complete success. With 320 exhibitors and more than 11,000 visitors, the event registered considerable growth compared to previous years.

The Oerlikon Manmade Fibers segment provided textile manufacturers from the region with information at the stand of its Egyptian representative, ATAG. "The four trade fair days were extremely intense. We held a series of highly promising, very concrete discussions", summarizes Regional Sales Director Jilali Lakraa. Above all, the visitors – predominantly from Egypt and Syria – were interested in information on Oerlikon Barmag's texturing technology. Further interest focused



VIP visit at the ATAG stand: Dr Ahmed Mostafa, Chairman Cotton & Textile Industry Holding Company (2nd left) and Hamdna Allah Boghashi, Procurement Manager Cotton & Textile Industry Holding Company (2nd right), informed themselves on Oerlikon Barmag technology.

on extrusion technology – and here especially tape yarn systems – along with spinning systems for BCF, POY

and industrial yarns. And the demand for chip manufacturing solutions was also considerable. (bey)



## 'Get more for less' at the IDEA in Boston

With its familiar combination of trade fair and conference, the IDEA opened its doors again on May 3, 2016 – this time in Boston, Massachusetts. For three days, the more than 7,000 visitors were able to acquire information and insight into the trade fair innovations of approx. 500 exhibitors from 70 different countries.

In keeping with the 'get more for less' trade fair motto, Oerlikon Neumag presented itself with its technologies for spunbonds and meltblowns, airlaid nonwovens and staple fibers for manufacturing carded nonwovens.

The prime focus was on the Oerlikon Neumag spunbond technology, which was extremely convincing in terms of its efficiency: up to 30% lower conversion costs compared to conventional spunbond systems available on the market. This is made possible by energy savings totalling almost 20% in the spinning system alone, compared to traditional systems. Furthermore, raw material utilization has been optimized, with the consequence that 5 percent fewer raw materials are consumed for the comparable output quality using standard European products.



Concrete project discussions were also held both for Oerlikon Neumag meltblown and airlaid technologies. With their excellent product qualities, both technologies are perfect solutions for future-oriented spunbonds nonwovens.

"Once again, the IDEA showed that we are extremely well positioned with our diverse product portfolio and are further strengthening our position within the global market", states Dr Ingo Mählmann, Product Manager Nonwovens, summing up the company's trade fair attendance. (che)



Lively discussions underlined the great interest in Oerlikon Neumag's spunbond, meltblown, airlaid and staple fiber technologies.

# Textile tales from the Orient

Flying Persian carpets, magical cloaks and ornamentation – the Orient has a ‘1000 and One Tales’ about textile products. Today, the wealth of the Middle East no longer lies in manufacturing textiles and apparel in all regions, as the country reports from Egypt, Iran, the United Arab Emirates and Saudi Arabia admirably showcase. Maybe the cause for this could actually provide renewed impetus for this industry: ‘black gold’.

If we look at the facts and figures, Africa and the Middle East continue to trail in the rankings as far as production capacities for polyester fibers are concerned: of the in excess of 69 million tons used across the globe in 2015, the region has a capacity of 573,000 tons, according to information supplied by the market researchers at PCI Fibres. This is not even one percent of the total market. Although the forecasts up to 2020 anticipate a growth in capacities to 702,000 tons, global availability is expected to rise to more than 75 million tons over the same period.

This example already demonstrates: as in the case of many other regions as well, the Middle East has not, or has no longer, been actively characterized by fiber manufacturing since Asia assumed the scepter in this sector. A marked exception is the production of BCF carpet fibers. Here, Africa and the Middle East are – with 47,000 tons capacity – ranked third in the PCI rankings, behind North America and China, which overtook the Middle East for the very first time in the 2015 report year (global capacity: 617,000 tons).

Now, in particular, there seem to be promising opportunities to further develop in the synthetic and manmade fibers sector. Because with the rich reserves of oil as the starting material for many textile (preliminary) products, it is the oil-producing countries of the Middle East in particular that could strengthen themselves. In view of the fallen oil prices, these countries are attempting to diversify their economies and industries and to become less dependent on trading oil.

“One opportunity would be to expand the textile value added chain to include raw materials for manmade fibers and filaments and textile preliminary products, to invest in polycondensation systems and hence establish an additional industrial foothold”, recommends Regional Sales Director, Jilali Lakraa, responsible for the region at Oerlikon Barmag. Potentially very good advice for some of the countries in the following reports.

## **Egypt:** **highly-diversified textiles sector**

Egypt is the only Middle Eastern country that is able to boast a vertically-integrated textiles and apparel industry. This ranges from growing the raw materials (predominantly cotton), the production of yarns and fabrics, filament yarn and fibers all the way through to the manufacture of clothing as the largest product group. Man-made fiber production can be expanded. To this end, PCI Fibres reports a current annual capacity of 44,000 tons of polyester fibers, with



around 30,000 tons of staple fibers, 10,000 tons of textile filaments and 5,000 tons of industrial yarns (high denier). No significant increase is expected before 2019. However, Oriental Weavers – one of the world's largest carpet manufacturers – has its headquarters in the capital Cairo. And Egypt is home to a leading nonwovens manufacturer in the form of Pegas Nonwovens, a Czech company.

The textiles sector plays an important role in the processing industry, with around 25 percent of national industrial production and a

quarter of the jobs, according to GTAI information. In February 2015, 4,594 textiles and apparel companies had total investments of just under 6 billion US\$, according to the General Authority for Investment and Free Zones. 196 of these were operating in free trade zones. Around 50 to 60 percent of the spinning and weaving capacities are in state hands, while private enterprise is responsible for 90 percent of apparel production.

In Egypt, there are four decisive textile regions within the area covering Cairo, Alexandria, Suez Canal and the Nile Delta, where the state-owned Misr Spinning and Weaving Company





### Egypt

 87 million



- Current annual capacity of 44,000 tons of polyester fibers.
- The textiles sector plays an important role in the processing industry, with around 25 percent of national industrial production.
- Egypt imports 90 percent of its machines and systems for the textile industry.

### Saudi Arabia

 31.4 million



- The textile-manufacturing industry is a marginal sector within the Saudi economy.
- Manufacturing capacities for polyester staple fibers total 25,000 tons, with no increase expected before 2019.
- With its population of relatively young people and rising incomes Saudi Arabia, the largest economy within the Arab region, is however a promising location for the sale of high-end apparel.
- The retail sector in particular can anticipate strong growth and profits.

In terms of polyester fiber production capacities, the Middle East is not a big player. However, with rich reserves of oil as a starting material for many textile products, it is the oil production countries in the region in particular that could strengthen themselves. Especially in Egypt, Iran, Saudi Arabia and the United Arab Emirates, the textile industry is in a state of flux.

#### Iran

 75 million



- There was a pioneering spirit detectable within the Iranian textiles sector even before the lifting of the economic sanctions in January 2016.
- Iran is increasingly putting its faith in modernizing its machinery.
- The Association of Iran's Textile Industry stated that around 10,000 operations were active in textiles and apparel production in 2013; 11 percent of all industrial enterprises in Iran.

#### United Arab Emirates

 9.3 million



- The federation is considered to be one of the world's largest trading hubs and re-export centers for fashion and apparel with an estimated growing market potential of 17.5 billion US\$.
- After oil, the textiles industry is considered the second-largest sector of trade and one of the largest employers within the federation.
- In 2014 the existence of around 150 textile-manufacturing companies was reported. The focus lies on automated production and quality.
- The future also offers opportunities within the industrial textiles sector, as reported by a market assessment conducted by the German Federal Ministry of Economics and Technology (BMWi).

## Egypt is also the gateway for exports to the Arab world and Africa.

factory is located in al-Mahalla (El-Mahalla El-Kubra), which manufactures a large part of Egypt's textile filaments. All sites are located close to important ports. The Suez Canal is one of the most important international shipping routes to trading markets in Africa, Asia and Europe. Furthermore, Egypt has signed free trade agreements with the USA (QIZ) and Europe (EU and EFTA), which also cover the textiles sector and simplifies trade with potentially 1.6 billion consumers. According to the American Chamber of Commerce, the Egyptian textiles and apparel industry manufactures apparel according to the designs of the major global apparel chains such as Calvin Klein, Disney, Gap, Timberland and Zara. The country is also the springboard for exports to the Arab world and Africa.

To this end, exports of goods manufactured in the textiles and apparel industry rose by almost 120 percent to more than 2.6 billion US\$ between 2004 and 2008. The majority of these exports continue to go to Europe and the USA. A target of 15-percent compound annual growth rate (CAGR) to 10 billion US\$ up to 2020 has been set. However, these plans have been dealt a blow over the past few years. Although textiles and apparel were still Egypt's fourth most important export in 2014, achieving revenues of just under 2.7 billion US\$ according to the United Nations Commodity Trade Statistics Database (UN Comtrade), a decline is expected for 2015, as exports only totaled just over 1.8 billion US\$ in the first nine months of the year. With this, exports look likely to be below-target for the third year in succession. In 2013, the volume was still in excess of 2.8 billion US\$.

This is the result, on the one hand, of the energy crisis and the lack of foreign currency within the country, which have also impacted on the textiles sector. But there are also other reasons.

Furthermore, the sector in Egypt is waging a battle against smuggled apparel, mainly from China and Southeast Asia; according to sector representatives, the market share for these illegal product was estimated to be around 40 percent in 2010.

Although Egypt is a major producer of high-end long-staple and extra-long staple cotton, the local spinning plants are increasingly demanding short- and medium-staple cotton. So, while high-end raw cotton is predominantly exported and therefore has to compete with Pima cotton from the US, scarce foreign currency flows into imports of foreign cotton. And imports of other textile products are also increasing: here, the import of yarns, fabrics and finished spun products increased by

4.9 percent from 1.8 billion US\$ in 2008 to just under 2.4 billion US\$ in 2013. Imports predominantly come from Turkey and, increasingly, China and include such products as POY, FDY, PSF and DTY. Furthermore, the sector in Egypt is waging a battle against smuggled apparel, mainly from China and Southeast Asia; according to sector representatives, the market share for these illegal products was estimated to be around 40 percent in 2010.

And around 74,000 workers lost their jobs during the global crisis of 2008/2009 – more than in the ten years before this (around 60,000). Some factories have been forced to close as a result of a lack of basic materials during the past few years. Others have only low levels of liquidity and are under extreme cost pressure as a result of competitors from Asia. This is making





The textile industry is an important factor in Egypt. However, the focus lies rather on downstream production.

employing qualified staff more difficult. Correspondingly, the level of qualifications is low and employee turnover is high. For these reasons, companies are introducing training courses for their staff, with further support provided by state-run institutions such as the Industrial Modernization Center, in the form of education and training programs. Among others, the University of Alexandria is also providing higher qualifications, training many textile engineers each year.

Retaining competitiveness also requires – in view of old and obsolete machines and equipment – investment in modern systems and more technical expertise for all phases of the manufacturing process. There is a slow-rising awareness for energy- and resource-efficient machines. In 2008, imports of textile machines rose dramatically compared to the previous year. According to the UN Comtrade, imports of textile and leather-processing machines had a total volume of almost 204 million US\$ in 2013, but fell to around 152 million US\$ in 2014, coming in at 135 million US\$ during the first nine months of 2015. Here, Germany – with a share just shy of 23 percent – is one of the primary exporters of textile equipment to Egypt. As Egypt imports 90 percent of its equipment, the country remains an interesting market for machines and systems.

Positioning itself for the future also requires improved interweaving of the manufacturing stages, along with greater cooperation with local suppliers. However, there are gaps; particularly in the upstream supply chains such as spinning, weaving, finishing, printing and dyeing.

The aim is for apparel manufacturing to increasingly focus on the production of fashion with short order and delivery times. Because there has to date been a concentration on high-quality apparel at low prices, for which short delivery times do not play a major role – also a consequence of importing low-quality cotton. There is no independent export fashion, despite artisans being able to draw on centuries of tradition. There are diverse materials and ancient ornamentation that would be perfect for ‘Made in Egypt’ design. However, there is a lack of designers able to successfully bring together the traditional and the modern.

Despite many challenges, the current situation offers scope for optimism. According to the GTAI, Egypt has been economically and politically stabilizing since the middle of 2014. Annual real GDP growth between 2011 and 2014 was only about 2 percent, but reached 3.5 percent in 2015 and is expected to rise to 3.8 percent in 2016. The energy situation is improving and the



A pioneering spirit is detectable within the Iranian textiles sector. Consequently, Iran is increasingly putting its faith in modernizing its machinery.

exodus of the Syrian textiles industry to Egypt has had a positive impact on the country, resulting in several investments and projects. In 2015, the Egyptian government announced the establishment of two further industrial areas for textiles in Borg El Arab and near Cairo. And in August 2015, the Chinese Gondong Group, the country's second-largest spinning and weaving company, conducted discussions on a potential investment. In accordance with GTAI statements, a survey carried out by a US management consultancy provides arguments in favor of increasingly processing domestic long-staple cotton in the future instead of imported short-staple cotton.

**Iran:  
spring awakening for textiles**

There was a pioneering spirit detectable within the Iranian textiles sector even before the lifting of the economic sanctions in January 2016. This has been showcased, for example, by the signals sent by the Iranian Ministry of Industry as far back as April 2015 dur-

ing a VDMA textile machine symposium held by the Textile Machinery Association in the capital Tehran. There, Golnar Nasrollahi – General Director of the Textile & Garment ministerial department – spoke to more than 1,000 decision makers from the Iranian textiles and carpet industry and attendees from the German Textile machine sector about the government's targets in view of the thawing of political relations: exports within the national textiles industry, still heavily focused on the domestic market, are to be strongly supported and increased. Exports currently totaling 1 billion US\$ for textiles and carpets are to rise to 2 billion US\$ over the next few years.

To achieve this, Iran is increasingly putting its faith in modernizing its machinery. According to the VDMA, this provided German textile machine constructors with an increase in Iran exports of around 170 percent to 37 million euros in 2014. This figure had increased to 41 million euros for the first eleven months of 2015. Further



orders of this scale could follow. Standard machines from the main supplier China will be less in demand in the future.

This also shows just how deep the impact of the years of sanctions has been. Investment backlogs have been created in virtually all areas. Much business with the West failed as a result of the banks, unwilling to have anything to do with Iran. Which is also why Iran's exports and imports were strongly oriented on Asia. To this end, China was – with a 25-percent share and 8.0 billion US\$ – the leading importer of Iranian products.

And the carpet sector – the embodiment of Persian culture – was also hit hard by the trade embargo and the global financial crisis. Just a few years ago, Iran was the biggest player in the global carpet market with a share of 60 percent; since then, revenues have fallen dramatically, comments a member of the Association of Persian Carpet Exporters in October 2014, talking

to the Iran Daily newspaper. In 2014, Iran Daily reported exports totaling 500 million US\$ and a 25- to 27-percent share of the global carpet market, while this figure fell to 142 million US\$ in the first seven months of the 2015/2016 financial year according to information supplied by the Iran National Carpet Center. Despite this decline, carpets will undoubtedly remain an irreplaceable cornerstone of the Iranian textiles sector. According to the Iranian Ministry of Industry, the country is currently ranked fifth when it comes to machine-made carpets, behind China, Turkey, India and Belgium.

In 2015, the Iranian Ministry of Industry reported one million employees working within



the entire Iranian textiles, carpet and apparel industry. The employment figures shows just how important the textiles and apparel industry still remains within this country with its more than 80 million inhabitants. Important sectors continue to include growing and processing cotton, which is predominantly used for the domestic manufacture of hand-knotted carpets. Spinning, weaving and dyeing or finishing textiles are also part of the country's repertoire. Iran produces the most diverse yarns and fabrics, including wool and man-made fibers such as polyester, acrylic and nylon. PCI Fibres reports production capacities for polyester fibers, expected to rise from 397,000 tons per year in 2013 to 485,000 tons per year in 2019.

The lion's share here is attributed to staple fibers and textile filaments, with industrial filaments trailing far behind. The manufactured products also include linen, jute, woven fabrics, knitted fabrics and apparel.

In 2011, the 'Iran Journal' online magazine reported that there were 9,300 textile companies in Iran, basing this figure on a study carried out by the Center for Studies of the Iranian Parliament. The Association of Iran's Textile Industry stated that around 10,000 operations were active in textiles and apparel production in April 2013; 11 percent of all industrial enterprises in Iran. Textile centers are located in and around Tehran (apparel industry), in Qazvin, 180 km northwest of Tehran, and in the Isfahan and Yazd provinces in central Iran. There are also factories in Ardabil and Sanandadsch in north-

**The Iranian government has been trying to strengthen the textiles industry for many years now, with the aim of becoming less dependent on oil.**

west Iran, a large textile plant with a capacity of 8,000 tons per year is located in Arak in the Markazi Province to the south of Tehran. Weaving workshops for carpets are concentrated in and around Ghom to the south of Tehran and in Isfahan.

More than 60 percent of apparel requirements are manufactured in the country using Iranian or imported fabrics, according to information supplied by the Ministry of Industry in 2016. However, demand is high, which is why imports are also considerable: to this end, imports of spun goods and products made from these totaled around 1.367 billion US\$ in 2011, according to GTAI research, a figure that increased around 0.8 percent to 1.378 billion US\$ in 2014.

The Iranian government has been trying to strengthen the textiles industry for many years now, with the aim of becoming less dependent on oil. Compared to other





Carpet production has a long tradition in Iran.

countries, the oil sector's share of GDP in Iran is 15 percent (2014/15), actually a relatively low figure. The supporting activities include development aid for modernizing operations: here, the government provided 500 million US\$ for low-interest loans in 2002 and 2003 and supported technology transfers and joint ventures with companies from Japan, Germany, China and South Korea. Furthermore, the textiles industry has been successively privatized. Currently, the Iranian Ministry of Industry claims that more than 95 percent of the Iranian textiles industry is in private hands. In 2002, 80 percent was still owned by the state, reported the Indian Website BharatTextile.com, this figure on press releases.

However, fundamental work has been neglected. To this end, an increasing number of manufacturers and tailors have left Iran over the past few years, seduced by better conditions, above all in Turkey and China. The fact that even apparel manufacturers are emigrating has good reasons: compared to Turkey and China, production costs in Iran are very high. According to information provided by the Tehran-based daily newspaper Shahrivand, manufacturing abroad is up to 90 percent less expensive than in Iran. The sector is also dealing with another

problem: each year, items of apparel worth 100 million US\$ are smuggled into Iran, according to the state organization tasked with fighting smuggling. In 2010/2011, for example, it was three times higher than in the case of legal textiles imports. These hot goods are very popular, as the quality and prices are frequently better than in the case of domestic products. So, the Iranian government still has plenty to do to level the ground for the renaissance of the textiles industry. It can in any case build on the growing interest from abroad. To this end, a meeting

**To this end, an increasing number of manufacturers and tailors have left Iran over the past few years, seduced by better conditions, above all in Turkey and China. The fact that even apparel manufacturers are emigrating has good reasons: compared to Turkey and China, production costs in Iran are very high.**

between Iranian exporters and American businesspeople and companies focusing on hand-knotted carpets will be taking place on the island of Kish in May 2016. And Iranian carpet traders will also be taking part in a carpet exhibition in the Turkish city of Antalya. Countries such as Pakistan, India and Italy are

planning roadshows or other projects for their future business with textiles in Iran. In addition to this, GTAI forecasts report that the lifting of the sanctions will lead to a significant upward trend and a successive resolution of the investment backlog. Following GDP growth of 1 percent in 2015/2016, a plus of 6.1 percent is being anticipated for 2016/2017.

**United Arab Emirates:  
hub for fashion and apparel**

The Gulf region, where oil wealth creates huge purchasing power, is more of a center for textiles and apparel trading and less of a producer. This is best demonstrated by the United Arab Emirates (UAE), where 8.3 million of the 9.3 million residents are foreigners. This cosmopolitan spirit is also reflected in the textiles sector: the federation is considered to be one of the world's largest trading hubs and re-export centers for fashion and apparel with an estimated growing market potential of 17.5 billion US\$. Textiles trading is particularly prevalent in the 'Dubai Textile City' free trade zone in Dubai and, according to the German Chamber of Foreign Trade in the UAE, comprises 460 member organizations. Furthermore, the 'Dubai Design District' free trade zone is being created in Dubai, a working environment for designers and associated industrial sectors. Dubai is also a center for numerous trade fairs and events designed to create local and international networks. The sector is cutting edge, also pursuing such concepts as organic and eco fashion and green shopping. According to the customs

authorities and the International Textile Fair (ITF) in Dubai, the value of the traded textiles and fabrics is almost 4.5 billion US\$, of which 2.6 billion US\$ are imports, 35 million US\$ exports and 1.5 billion US\$ re-exports.

After oil, the textiles industry in the UAE is considered the second-largest sector of trade and one of the largest employers within the federation. In 2014, the Dubai Ministry of Finance and National Economy reported the existence of around 150 textile-manufacturing companies, predominantly located in Dubai and Sharjah. The focus lies on automated production and quality. Locally, mainly home textiles are manufactured, although also textiles for car seats, tents, drapes and curtains. PCI Fibres reports that the UAE is also home to capacities for producing polyester staple fibers: in 2013, the figure was 11,000 tons,



with volume increases to 15,000 tons per annum planned between 2014 and 2018 and to 20,000 tons in 2019. Demand is highest (around 50 percent) for knitted fabrics, followed by woven materials. The companies include many apparel manufacturers. One of the most important textiles manufacturers is Abu Ghazaleh Trading Company. This manufacturer of apparel, shoes, handbags, home textiles and uniforms supplies large supermarket chains, such as Carrefour and Geant. Overall, textile exports from the UAE go to more than 50 countries in Africa, the Middle East, South Asia and Europe. Imports originate above all from China, South Korea, Japan, Italy and Indonesia.

The future also offers opportunities within the industrial textiles sector, as reported by a market assessment

conducted by the German Federal Ministry of Economics and Technology (BMWi) in collaboration with the German Chamber of Foreign Trade in the UAE. To this end, deployment potentials are seen in the areas of safety and facility protection, in the medical segment particularly for nonwovens, in protective clothing and in functional textiles, geotextiles and roofing for the construction sector. The US-American Department of Commerce ranks the UAE 18th among the top markets for industrial textiles for the years 2015 and 2016. Increasing its focus on non-oil sectors could pay off for the UAE in the future, as the low oil prices are reducing state revenues, dampening the investment climate. According to GTAI information, GDP is likely to fall for the third time in succession from 4.6 percent (2014) and 3.0 percent (2015) to now 2.6 percent (2016). Nevertheless, the UAE have relatively good financial reserves. Oil and gas have a GDP share of around 40 percent; hence the dependency on oil is considerably lower than in the case of Saudi Arabia.

### **Saudi Arabia: profiting from enthusiastic textile consumerism**

According to the GTAI, investment in Saudi Arabia will significantly decrease in 2016 as a result of falling oil prices. Forecasts predict that GDP growth will fall from 3.3 in 2015 to 1.7 percent in 2016. The strong decline in exports will result in a negative balance of trade in 2015, the first time in 16 years that this has happened. And imports have also fallen. The kingdom plans to further diversify its industries by 2022, with the aim of becoming less dependent on oil. However, this venture is being made more difficult in view of the fact that limiting public investment is also slowing down current stable growth in the non-oil sector.

The textile-manufacturing industry is a marginal sector within the Saudi economy and is not one of the focus



areas for investment support. And the sector could also be subject to burdens: in January 2016, the to date very low prices for electricity, water and fuel were raised and are to be increased step-by-step over the coming five years – although the competitiveness of the industry should not suffer as a result. Furthermore, value-added tax of up to 5 percent will be introduced in all Gulf Cooperation Council (GCC) states in the next two years.

Saudi Arabia spins, weaves and finishes textiles. According to market surveys conducted by PCI Fibres, manufacturing capacities for polyester staple fibers total 25,000 tons, with no significant increase expected before 2019. And for polyester industrial fibers, a stagnation – following the increase over the last few years – is expected, with capacities of 17,000 tons (12,000 tons

of high-denier yarns, 5,000 tons of BCF carpet yarn). The production portfolio also includes yarns made from acrylic, nylon, cotton and blends as well as (coated) fabrics and textile articles for use in medicine.

In accordance with a 2014 study carried out by the market researchers at Euromonitor, the Saudi market for spinning textile fibers and weaving textiles grew by 31 percent to 4.7 billion Saudi Riyal (SR) up to 2012, which currently equates to around 1.25 billion US\$. The local manufacturers reported sales increases of 859 million SR (229 million US\$) between 2007 and 2012, when

The country offers them not only a good location at the gateway to surrounding market regions, but also shopping-focused and brand-conscious consumers.

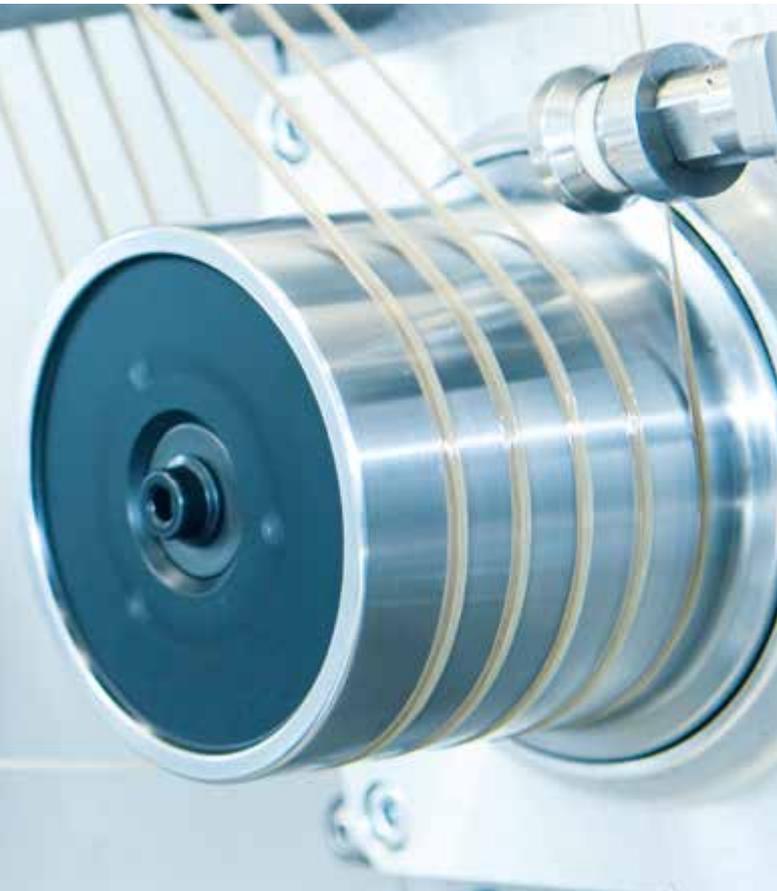
Among all manmade fibers production processes, BCF yarn production is represented rather strongly in the Middle East.



sales reached 1.6 billion SR (427 million US\$). This represents net growth of 93 percent. In addition to the UAE, target destinations for the Saudi Arabia's textiles industry are increasingly Egypt and India.

According to Euromonitor, textile imports totaled 2.7 billion SR (720 million US\$) in 2012. In 2013, the Jeddah Chamber of Commerce and Industry outlined annual growth in imports of between 13 and 15 percent in press releases. More than 85,000 tons of textiles are imported from various Asian, European and Arab countries. The import market for textiles and ready-to-wear has been estimated to total 10 billion SR (2.66 billion US\$). With its population of around 31 million, relatively young people and rising incomes, Saudi Arabia, the largest economy within the Arab region, is

however a promising location for the sale of high-end and fashionable apparel. The retail sector in particular can anticipate strong growth and profits. Many international brands are already present within the kingdom, including Fawaz al-Hokair with 50 franchise stores with international brands and 750 fashion stores. The country offers them not only a good location at the gateway to surrounding market regions, but also shopping-focused and brand-conscious consumers. This is demonstrated, above all, during the months of Sha'aban and Ramadan, as well as during preparations for Eid Al-Fitr, the Breaking the Fast Feast. Families traditionally buy new dresses during these periods. The Jeddah Chamber of Commerce and Industry estimates family spending on these events and wedding dresses totals 6 billion SR (1.6 billion US\$). (tho)



Bicomponent yarns offer diverse application possibilities

# New spin beam for sensitive bicomponent filament yarns

A new spinning concept now makes it possible to transform sensitive polymers into bicomponent filament yarns in the area of filament yarns as well.

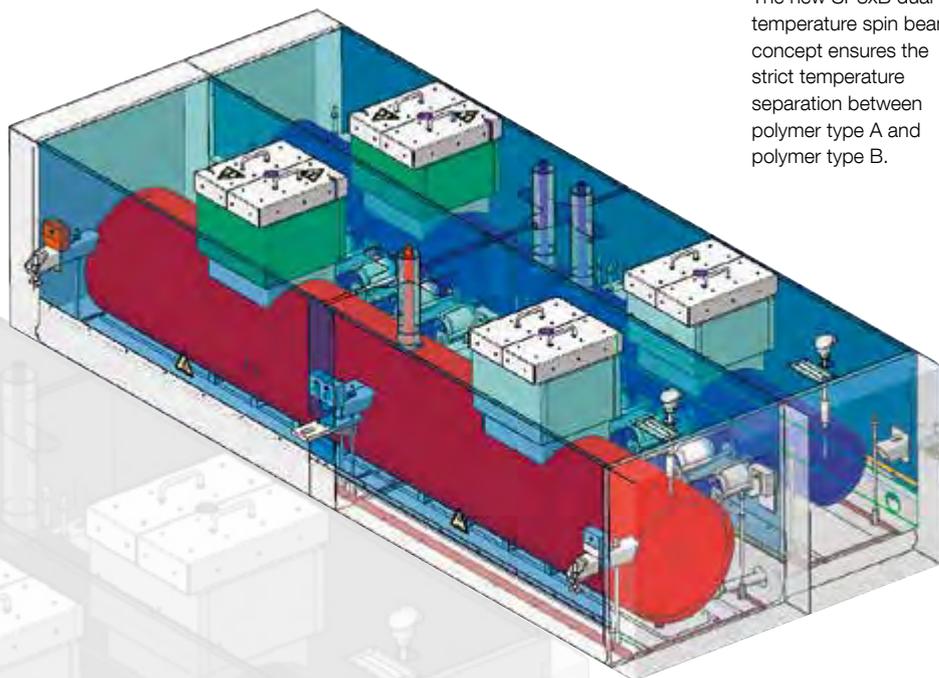
**T**he new technology is based on a temperature separation of the two polymers that feed into the Bico yarn.

## **SP8xB dual temperature bico spinning unit**

Depending on the application, polymers are processed at great temperature differences to be able to guarantee the produced yarn's good spinnability and high quality. The new SP8xB dual temperature spin beam concept

ensures the strict temperature separation between polymer type A and polymer type B. With that, the polymers' quality and viscosity can be adjusted to match the exact process requirements. The strict separation of the HTM heating of both polymer supplies as well as the spinning pump ensures the least possible damage to each type of polymer up to just before the point where both components are combined in the spin pack. This in turn guarantees optimal spinning conditions.





The new SP8xB dual temperature spin beam concept ensures the strict temperature separation between polymer type A and polymer type B.

The new system is based on the SP8xB spin beam concept and naturally offers the same energy advantages over the rectangular concept. Less sensitive polymers can also be manufactured with the standard SP8xB bico spinning unit without problems.

Over the past few months there has been a clear trend towards rising demand for bico yarns. One reason for this development is that the market for commodity yarns is currently considered saturated and many yarn manufacturers are searching for niche markets. Moreover, new applications

and treatment possibilities have been developed in the further processing of yarns.

Bicomponent yarns offer a huge range of possible cross-sections. In general, these yarns comprise two different polymers, which give them specific properties. Bicomponent yarns with the corresponding cross-sections are manufactured depending on the desired application. Here, the four best-known cross-sections are core sheath, side-by-side, segmented pie and islands in the sea. (bey)

Talking to Georg Stausberg,  
CEO of Oerlikon Manmade Fibers segment

# “New technology diversity promises customized solutions for their staple

Along with BCF and nonwovens systems, the Oerlikon Neumag staple fiber systems business is one of the three core technologies offered by the Neumünster-based manmade fiber systems builder. This segment has now been supplemented as a result of the takeover of the staple fiber technology of Trützschler Manmade Fibers, formerly Fleissner.

**F**ibers & Filaments spoke with Georg Stausberg, CEO of the Oerlikon Manmade Fibers segment, about the acquisition, the technology and the outlook for the staple fiber business.

» Mr. Stausberg, with Oerlikon Neumag you are a player within the staple fiber sector. What is the technology supplied by your company all about?

Staple fiber systems construction has been one of our core businesses for decades now. To this end, we have built up extensive competencies in various processes over time. We offer our customers solutions for virtually all polymers and applications, for standard fibers and also for specialty products. And we have been successful with demanding processes, such as the manufacture of bicomponent fibers, for many years as well.

Our 1- and 2-stage systems are capable of capacities of up to 300 tons per day. They can be operated both

with an upstream polycondensation system or an extrusion unit. And – as a total solutions provider – we supply everything: customized solutions, ranging from the melt preparation all the way through to fiber production.

» You recently announced that the Manmade Fibers segment would be taking over the staple fiber technology of Trützschler Manmade Fibers, formerly Fleissner. To what extent does the recently acquired Trützschler technology complement the Oerlikon Neumag portfolio?

In the past, both companies had slightly different focuses in the development of individual components. Depending on the application and required fiber quality, it is sometimes one variant that offers advantages and sometimes the other. For this reason, our customers can choose from an even broader range of technology, allowing them to acquire the best-possible configuration for the respective process.

The Trützschler Manmade Fibers SDD (Single Drive Drawframe) draw unit for small systems is new in our portfolio, for instance. With this concept, each godet is driven separately, which provides stability particularly in the case of critical processes.

» What does this takeover mean for all staple fiber manufacturers equipped with Trützschler technology?

We will jointly continue to offer the established staple fiber technologies from Oerlikon Neumag and Trützschler Manmade Fibers. All our customers will continue to receive the, for them, best technology and process solutions from a now expanded portfolio.



Staple fiber systems is one of the three core technologies of Oerlikon Neumag.

# our clientèle even more fiber production”

“Needless to say, we will systematically continue to provide all accustomed customer services for systems and equipment installed.”

Needless to say, we will systematically continue to provide all accustomed customer services for systems and equipment installed. Smooth provision of spare parts and catering to the agreed warranty service as well as continuing to provide support through the Customer Services staff are assured for all customers. In the near future, we will also have the support of the experts at Trützschler Manmade Fibers, providing us with a technology transfer.

» Where and how do you see the future of staple fibers?

We have recently considerably strengthened our staple fiber plants business division. We did this because we anticipate significant positive development within the staple fibers segment. Currently, staple fibers already make up around one third of total global manmade fiber production, a figure expected to rise in the future. And we are prepared for this development: we want to continue to offer our customers innovative solutions that provide they remain competitive. We are ensuring this with our intensive investment in research and development.

Mr. Stausberg, thank you for talking to us. (str)



## Oerlikon acquires Trützschler's staple fiber technology portfolio

Oerlikon has signed an agreement to acquire the entire staple fibers technology portfolio of Trützschler Nonwovens & Man-Made Fibers GmbH, Egelsbach, Germany. This company is part of the German Trützschler Group, which is a specialist in fiber preparation for the yarn spinning and nonwovens industries.

With the acquisition of the former Fleissner staple fibers technology portfolio and the intellectual property (IP) of Trützschler Nonwovens & Man-Made Fibers GmbH, the Manmade Fibers segment becomes the leading technology and equipment provider in the global staple fibers market. The acquisition expands the Manmade Fibers segment's staple fibers technology expertise and broadens the segment's customer base and service business in the respective areas. As staple fibers projects are increasingly tied to continuous polycondensation facilities, already now the Manmade Fibers segment is well positioned to operate as a provider of complete solutions. Both parties have agreed not to disclose details of the transaction. Trützschler Nonwovens & Man-Made Fibers GmbH is discontinuing its staple fiber business as it has decided to focus on its core business activities. (nwe)

Efficient monofilament production

# Mother yarn with rising market potential

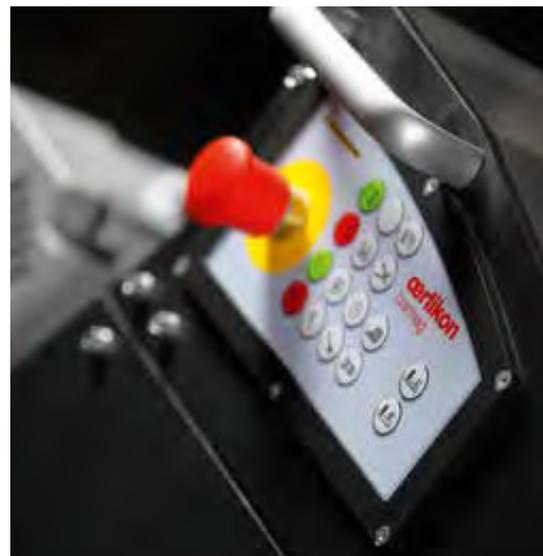
Mother yarn is the term used to describe multifilaments that – following the spinning process – are split to create monofilament yarns. Their area of application is broad: in addition to drapes, mosquito nets, apparel (organza dresses, saris, etc.), monofilaments made from mother yarn are also used in the automobile sector, in items of luggage and in sports apparel (shoes).

**C**onsequently, the demand for mother yarn is also increasing: according to market insiders, there was a global growth potential of more than 10 percent last year alone. Particularly in India, the changed requirements of the textile further processing sector have resulted in increased demand for mother yarn. The monofilaments manufactured using a two-stage process to date no longer provide the necessary profitability to ensure economic success.

## WinFors winder makes the mother yarn process profitable

When manufacturing mother yarn made from polyester or polyamide, the later separation of the filaments must be monitored even during the spinning process. The yarn guides and take-up are attributed a central role: a good splitting process is dependent on the package build and the yarn path within the draw unit. In conjunction with the WinFors winder, the Oerlikon Barmag spinning system configuration, designed especially for manufacturing mother yarn, guarantees profitable monofilament production. The monofilaments produced in this way are also extremely convincing in terms of their excellent yarn quality.

With this challenging PET or PA process, Oerlikon Barmag technology provides the necessary gentle yarn handling. Special yarn guides in the draw unit ensure successful splitting of the yarn, while the system for applying the spin finish especially tailored to the requirements of mother yarn is equally superb. For take-up, the yarn is transferred to the WinFors winder, which has been developed specifically for delicate yarns. Its cam shaft guar-



The WinFors winder guarantees gentle yarn treatment.

antees excellent package build and stable edges for packages even in the case of the critical, high single dpf in mother yarn filaments. The precise and gentle yarn displacement of the cam shaft concept in conjunction with the tried-and-tested Oerlikon Barmag ribbon breaking process ensures that the downstream splitting process is carried out trouble-free and without any loss of yarn quality.

The Oerlikon Barmag FDY mother yarn concept has been optimized for the typical monofilament thicknesses of 15, 20 and 30 dpf and the associated mother yarn types such as 180 den F12, 200 den F10 and 300 den F10. Proven components are deployed: from the extrusion unit, the type SP8 spinning system with its special design and long quenching unit for high single filament titers all the way through to the FDY draw unit with 4 godets or – for polyamide – with 5 godets. (rei, bey)



Monofilaments made from mother yarn are - among others - used in the automobile sector or in sports shoes.



# Fire at Turkish textiles manufacturer **Isiksoy Tekstil relies on Oerlikon Barmag**

December 27, 2015 will quite literally have been burnt into the memories of Turkish textiles producers Ertugrul and Mustafa Isik. A major fire, triggered by a cable fire in the forklift truck battery recharging room, completely destroyed one production hall at their company, Isiksoy, in Bursa.



The fire at the Turkish textiles company Isiksoy was hard to control...

**D**ue to the immense heat, the local fire departments could do nothing more than let the building burn down in a controlled manner, preventing the fire from spreading to neighboring buildings. A blessing in disguise: the fact that the fire broke out around lunchtime on a Sunday presumably prevented a worse outcome. Fortunately, there were no fatalities to report. In contrast, damages totaling millions of euros were caused by the fire.

Isiksoy, a fully-integrated textiles company – covering weaving, knitting and printing all the way through to manu-

facturing fabrics – has been an Oerlikon Barmag customer for many years now. The fire also claimed 16 texturing machines supplied by Oerlikon Barmag.

The two brothers contacted Oerlikon Barmag immediately following the fire with a request to provide fast support in rebuilding the capacities within the plant. This brought about swift and problem-free agreement on the number and designs of the machines. Within the scope of its capabilities, Oerlikon Barmag has been very accommodating with the customer in processing the order. To this end, the first machines will be delivered as early as May 2016.

The brothers are grateful for the swift support: “Unfortunately, the fire has resulted in us losing our entire texturing machines capacities. To be able to texture our products again, we had to reinvest virtually immediately. For us, it was clear that we would once again work with Oerlikon Barmag. There were many reasons for this: the company’s branding, the quality of the products and the service and, above all, the excellent personal contact between the two partners over many years. Oerlikon Barmag reacted immediately, confirming the fast provision of the machines.” (wa)



... and completely destroyed one production hall in Bursa.

# Savis Spadana focuses on quality yarns and specialties

## Quality ambassador in Iran

When Savis Spadana CEO Mehdi Molla Ahmadi first made contact with Oerlikon Barmag at the ITM in Istanbul in the summer 2013, he had a vision: he wanted to bring high-end textile technologies to Iran so that he would be able to manufacture quality polyester yarns for his country.

**T**wo years later, in September 2015, his idea had become reality: the first POY extruder spinning plant with WINGS technology started manufacturing in Iran. 3 times 8 positions were installed to manufacture various yarn types in small batch sizes. The recipe for success: high-quality specialty yarns. The system comfortably copes with titer ranges of between 70 and 300 denier, microfiber yarns, spun-dyed yarns and high-count yarns, hence allowing the Iranian newcomer to the filament spinning sector to set new standards in the country. "Now that the economic sanctions imposed on Iran by the West were lifted in January of this year, there is enormous pent-up demand in the country. Quality products are currently very much in demand", explains Molla Ahmadi, talking about his investment.

In addition to the systems, the project scope also included all the engineering services. Solutions provider Oerlikon Barmag assisted Savis Spadana in everything – from planning and erecting the buildings all the way through to procuring personnel. Hugely important purchasing criteria for the newcomer to filament spinning. "We want to manufacture first-class quality. For this, we require both first-class technologies and a first-class staff that is familiar with the complex production process and able to keep it under control. With Oerlikon Barmag, we have found the right partner for training our employees and accompanying them over the first few months of production."

Here, the comprehensive range of customer support offerings and the strong international network of the Remscheid-based market leader

triumphed. The on-site liaison is provided by Oerlikon Barmag Engineering employees with a high level of expertise particularly in the areas of process technology and engineering.

But the Savis Spadana group of companies actually specializes in downstream textile operations: the company was founded in 1993 as a weaving plant; after 7 years, in 2000, the company expanded into cotton spinning and installed lines from Trützschler, Zinser, Rieter and Schlafhorst. In 2005, the group installed the most modern denim fabric production line, equipped with a choice of European suppliers of high-tech machines and systems. Now, Savis Spadana supplies best quality products to the Iranian market.



For the last 23 years, the family enterprise has also been focusing on in-house texturing. Here, there are also plans to update the texturing facilities with Oerlikon Barmag eFK machines in the near future. Moreover, the vertically integrated textile company has plans for the set up of an FDY spinning production with WINGS technology in the future. Located in Isfahan, the main center for textiles in Iran, the company employs a staff of 1500 in cotton and filament spinning, texturing, weaving, sizing, dyeing, finishing and printing. (bey)



Savis Spadana CEO Mehdi Molla Ahmadi is the first yarn producer in Iran relying on POY spinning with WINGS.

The texturing facilities, also equipped with Oerlikon Barmag technology, will be updated with eFK machines in the near future.

Oerlikon Barmag is represented by Sinatex in Iran. 5 employees under Managing Director Khosrow Rahimi are familiar with all textile processes offered by the Oerlikon Barmag Manmade Fibers segment. They are our first competent contact partners and accompany Iranian customers both during and after the completion of their projects. Furthermore, the company provides customer support for mechanical engineering, electrical engineering and process engineering services outside Iran: the Sinatex experts are also deployed for Oerlikon Barmag projects in Turkey and Pakistan.



Ready for Industrie 4.0

# On-site 'Connected Workshop' maintenance issues

As part of our Partnering for Performance portfolio of customer-oriented solutions, Oerlikon Barmag partners at customer site to provide onsite maintenance and service solutions, letting the customer focus on product and production.

**T**he 'Connected Workshop' provides customers with a robust solution, with fixed monthly costs, guaranteed equipment availability, on-site spare parts stock, and the best of Oerlikon Barmag's support. The customer can focus on productivity, and Oerlikon Barmag takes care of maintenance.

The 'Connected Workshop' brings industry best practices for:

1. Health, safety and environment with the right equipment and qualified workers.
2. Operational excellence with visual and transparent workshop management.
3. Standardized maintenance procedures and processes according to Oerlikon Barmag's recommendations, supported and monitored by qualified staff in Germany.
4. Minimized equipment downtime, with all critical components, spare parts and consumables available onsite
5. Industry 4.0 ready with POC-connected test stands that provides KPIs and trends providing greater insight into maintenance status, service history of each equipment and the potential to identify breakdowns before they happen.



# - a solution for

- 1 Oerlikon Barmag's expert service technicians provide best-in-class on-site service. From inspection to troubleshooting, and maintenance and repair, everything is possible. Supported by service and R&D from Remscheid, Germany.
- 2 A clear interface between customer's operations and Oerlikon Barmag's 'Connected Workshop' is provided. The customer has simply to deliver the winder (or other equipment) to the input area, and Oerlikon Barmag takes care of the rest.
- 3 Fixed costs with service technicians provided by Oerlikon Barmag under a long-term agreement. Variable labor costs and labor issues are taken care of, letting the customer focus on new products and production optimization.
- 4 The customer naturally benefits from clear and transparent reporting, service history, spare parts consumption reports, and more.



The customer can focus on productivity, and Oerlikon Barmag takes care of maintenance.

## Challenges and solutions

### Customer – Challenge

- Maintenance of specialized equipment requires specialized knowledge and frequent access to original equipment engineers
- High labor costs of maintenance workers, with limited access to high-level maintenance knowhow and skilled workers
- Limited outsourcing knowhow
- Scheduled maintenance in coordination with production plans is already done. What are the benefits that Oerlikon can bring?

### Oerlikon Barmag – Solutions

- Fixed monthly rates for all maintenance and repair
- Guaranteed equipment availability
- Guaranteed spare-parts availability, and ownership/risk takeover by Oerlikon Barmag
- POC-connected test stands and maintenance workshop (and ERP interface)
- Intelligent monitoring for predictive maintenance with additional sensors on the equipment e.g. vibration, energy

### Oerlikon Barmag Customer – Benefits

- Reduced total cost of ownership (TCO) with reduced maintenance costs
- Increased equipment uptime through on-site service
- Professional maintenance for reduced failure rates
- Improved product quality
- KPIs and trends providing greater insight into maintenance status with
  - Service history of each equipment
  - Potential to identify breakdowns before they happen

## Market potential and reference customers

Industry 4.0 and ‘connected solutions’ are a megatrend that is gaining acceptance in capital equipment markets. Some early adopters have already started this ‘partnership’ with Oerlikon Barmag.

Reliance Industries, India, is known worldwide for its manufacturing excellence. Oerlikon Barmag’s first on-site maintenance workshop started here in 2006, and now is at all three plants at Hazira, Patalganga and Silvassa.

Since 2015 Xinfengming Group, runs the first on-site maintenance workshop in China, covering iQOON, ACW and WINGS-POY winders. Wellknown Polyesters, India started with the latest workshop in 2016.

Customers with more than 500 spinning positions can enter this megatrend of Industrie 4.0 with our outsourcing model. (abo)

Service Center Dalton celebrates its first birthday

# Support for the carpet industry

As Oerlikon Manmade Fibers segment approaches one year of operation at its Service Center in Dalton, GA we have reinforced the knowledge that extensive customer support in the local carpet industry is vital. With over a US\$ 1 million in available parts, repair technicians and field service engineers, Oerlikon Textile Inc. is helping the customers grow their business through better support and service.



**S**o Richard Chesley, Manager Engineering Services, Mohawk Summerville BCF, states: "The addition of the Oerlikon facility in Dalton has provided excellent customer service along with a top notch repair department." Furthermore, the Service Center in Dalton is embedded in the global service network of Oerlikon Manmade Fibers with full support of the global service experts and global R&D department.

The experienced staff works with our BCF customers to provide solutions that provide long term value. Our engineers meet with plant engineers to offer upgrades, conversions and maintenance suggestions that will improve machine efficiency and product quality to increase competitiveness for the whole lifetime of a BCF machine. "We have saved tremendously since Oerlikon came to town. It has reduced our downtime because of efficient and fast service", explains Connor Chitwood, Extrusion Manager, Engineered Floors LLC.

With the huge stock of Neumag and Barmag OEM parts, Oerlikon Manmade Fibers segment offers off-the-shelf delivery for most consumable and normal use parts. The direct service from Germany ensures, that special orders are in customer hands quickly. The convenient location, right off Interstate 75 in Dalton, supports quick pick-up and delivery to minimize machine downtime, a benefit which is acknowledged by the customers. "The benefits of having the local Oerlikon



shop have been substantial. A few of the services that I and my company have benefitted from are the quick convenient pickup and delivery of parts, a faster return on repaired parts such as godets, and having a field service technician local. The staff have been very helpful, knowledgeable, and always return calls and emails in a timely manner. I am glad to have Oerlikon as a vendor and thankful for the local shop", states Eric Elrod, Extrusion Maintenance Manager, Beaulieu Group LLC.

Oerlikon offers full repair services for bobbin holders/chucks, godets, scanning rolls, heat controls, Siemens drives, pumps and many other items. As the Service Center Dalton approaches one year of operation on August 13, 2016, we are pleased with the relationships that we have furthered with our customers. (dwa)

To learn more or for immediate support contact our Dalton Service Center at:

General info: Email: [dalton.sales@oerlikon.com](mailto:dalton.sales@oerlikon.com)  
Mr. Chad Mullinax Facility Manager  
Mr. Manuel Wray General Manager, Service Sales  
Mr. Norbert Osterholz Technical Service Sales

Tel.: 1.706.259.9970  
Cell: 1.706.980.9974  
Cell: 1.704.651.3956  
Cell: 1.704.577.3565

The patent for manufacturing polyester turns 75

# A synthetic material for all aspects of life

As with so many groundbreaking inventions and discoveries, polyester has become an integral part of our everyday lives. Most people are constantly surrounded by it without being even consciously aware of the fact.

**A**part from its versatile deployment in apparel (frequently as a mixed fabric), we walk on carpets manufactured from polyester fibers, drive cars to work whose tires are reinforced with high-tenacity polyester fibers and on roads which may have been constructed using geotextiles. Our beverages are transported in light and secure bottles made from polyethylene terephthalate and food packaging, photographic films, gears and cogs, plugs and screws and much more are produced using a polyester.

High-end polyester spunbonds are used in the production of flooring, filters and levee-dike reinforcements. Biodegradable polyester fibers are used in surgical sutures.

And polyesters also play a role as thermoplastic materials for molded articles. The list could be continued infinitely and makes the properties of this synthetic material obvious.

Depending on which additives are attached to the long carbon atoms of polyesters, we can create virtually any property desired: tear resistance, elasticity, abrasion resistance, light resistance and resistance against organic and mineral acids. Textiles made from polyester do not shrink or felt, barely wrinkle, are easy to wash and keep clean and dry quickly.



When British chemist John Rex Whinfield and his colleague James Tennant Dickson discovered the plastic PET during his quest for synthetic fibers, the fact that polyester would one day be a hugely successful product could not be foreseen. Initially, the patent (granted in 1941) was kept secret during the Second World War, as all research into plastics was classed as potentially essential to the war effort by the British Government before Whinfield used it as the basis for developing the synthetic fiber

'Terylene' in 1947, which was also marketed under the Dacron and Diolen brand names.

### **Innovations for successful manmade fibers**

In 2015, the global production of manmade fibers totaled approx. 62.6 million tons, of which polyester made up the largest share with around 76% compared to other materials such as polyamide and polypropylene, for example. The continuing success of polyester fibers has also been paralleled by the success of Oerlikon Manmade Fibers. With its two brands, Oerlikon Barmag and Oerlikon Neumag, the world market leader for manmade fiber filament spinning systems, texturing machines and solutions for the production of BCF carpet yarn, synthetic staple fibers and nonwovens has been supplying the manmade fiber industry with innovative concepts for more than 90 years now. High-tech 'Made by Oerlikon' -

quality machines can be found in the production halls of yarn manufacturers across the globe.

For many decades, the most important, future-oriented developments in the manmade fiber industry have come, and continue to come, from Oerlikon Barmag. If we look at the past eight years alone, it becomes clear that 'history' can be transported to the present: WINGS, the compact take-up machinery for POY and FDY, is the latest example of a revolutionary concept in a long line of ground-breaking innovations in filament yarn manufacturing.

And Oerlikon Manmade Fibers will also be providing the manmade fiber industry with trailblazing technologies to ensure it remains competitive within the global marketplace in years to come. The versatile polyester fiber will also be very much part of this future. (wa)



A true multi-talent: Polyester finds its application in apparel, technical and home textiles, and carpets, to name but a few.

**oerlikon**  
barmag

**oerlikon**  
neumag

## imprint

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