

# textile.4U

THE TEXDATA INTERNATIONAL MAGAZINE

ISSUE NO.1-2 2020

**TEXDATA**  
INTERNATIONAL

**COVID-19**  
WHAT NEXT?

IS **RECYCLING** CHANGING THE  
TEXTILE LANDSCAPE FOREVER?

**20** BRILLIANT INVENTIONS  
PRESENTED AT **ITMA**

INTERVIEW  
**MAURO SCALIA** (EURATEX)

INTERVIEW  
**ANDRÉ WISSENBERG** (OERLIKON)

INTERVIEW  
**DR. CHRISTIAN SCHINDLER** (ITMF)

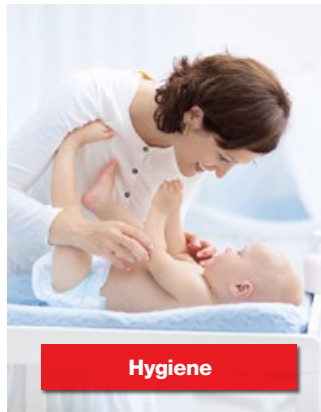
**CINTE TECHTEXTIL CHINA CONFIRMED  
FOR SEPTEMBER 2020**



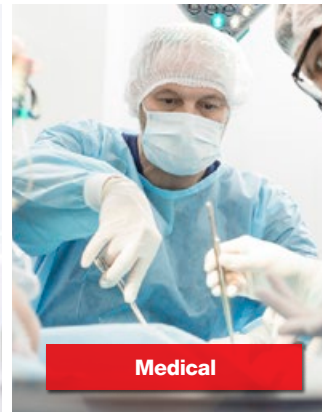
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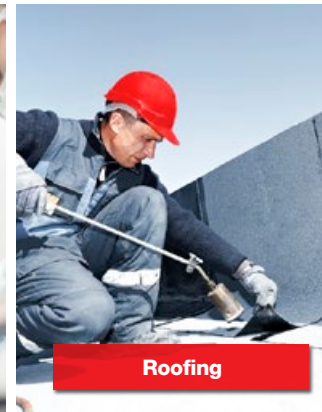
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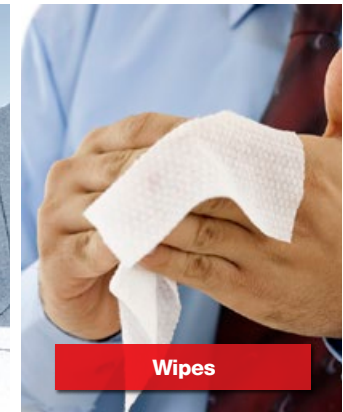
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Wipes

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MATERIALS

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## FROM THE EDITOR

# DEAR READER,

isn't life crazy? You make plans and something unexpected comes out of the blue. Nobody could have seen the SARS-COV2 virus and the COVID-19 pandemic coming. Now it has completely altered our way of life and world of work. We are at risk and for the moment just grateful if we and our loved ones are healthy and remain that way. We also feel for those for whom that is not the case. They have our sympathy and remind us that health is far more important than work or business.

However, bringing all of life to a halt is simply not an option. We cannot freeze and remain in limbo. Life and work must go on, even if not in the way we are used to. For starters, there are no trade fairs for the time being. There are restrictions on travelling and meeting face-to-face. Working from home has caught on in a big way. We are communicating virtually and digitally and are having to improvise.

**BEST REGARDS**  
**OLIVER SCHMIDT**

#Editor-in-chief

This applies to us too. The preliminary and follow-up reports for INDEX and ITM have been scrapped - unfortunately. We have accepted this, however, and have found other exciting themes instead. We naturally asked ourselves how the crisis is changing and affecting the textiles landscape.

Most experts think it will accelerate the megatrends that were developing anyway, such as digitisation and the circular economy. In our title story "COVID-19 Crisis – What next?", we take a look at the current situation and ideas on how to relaunch the industry. In addition to this, in our exclusive interviews we spoke to two key figures in the sector who both offer the latest first-hand information. We spoke to Dr Christian Schindler, Director General of ITMF, and to Mauro Scalia, Director of Sustainable Businesses at EU-RATEX, who also comments in depth on the circular economy.

This aspect, which will shape the sector in the years to come, was put on the backburner by the threat of the crisis, but significant steps forward were made in Europe just before the shutdown began. The action plan for a circular economy presented by the European Commission at the beginning of March could shake up the textile industry in Europe and beyond. We take a look at what might be coming.

Last but not least, we are excited to be able to push-start a project that has been a long time in the planning. From now on, in each issue of the TexData Magazine you will find a selection of specialist articles produced by ITA Aachen. The researchers under the leadership of the institutes' director, Professor Thomas Griess, look forward to giving you an understanding of their latest industry-related research findings.

We hope you enjoy reading this issue, and that you continue to stay healthy!

# TEXDATA

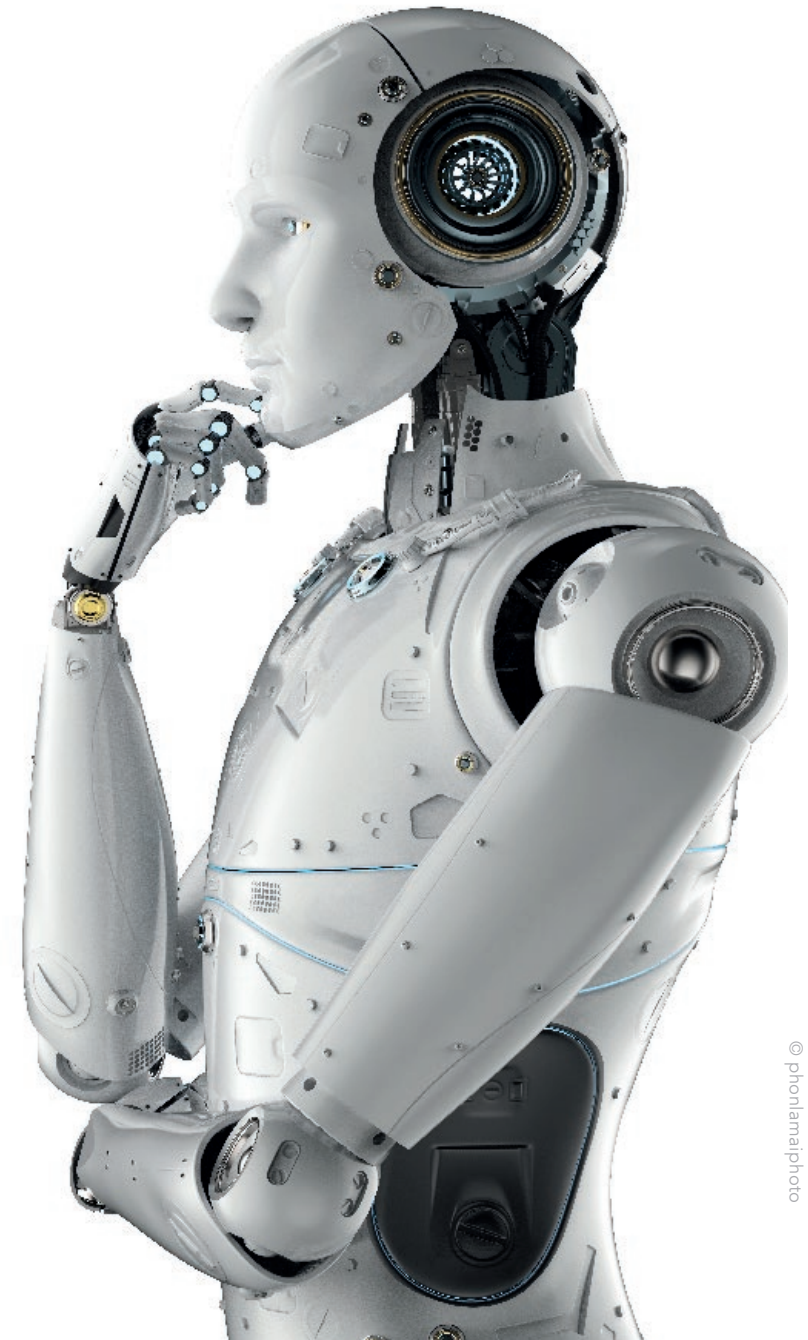
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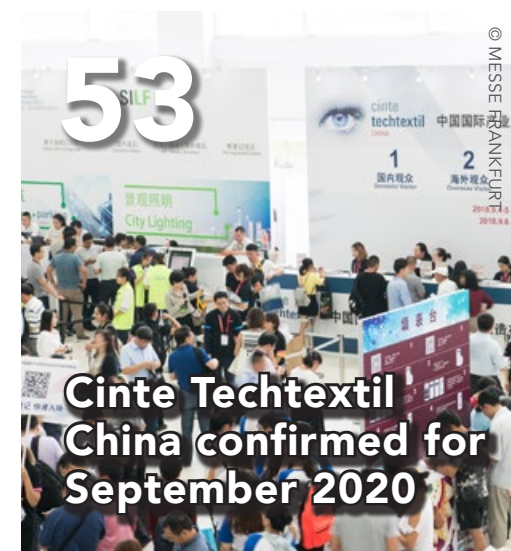
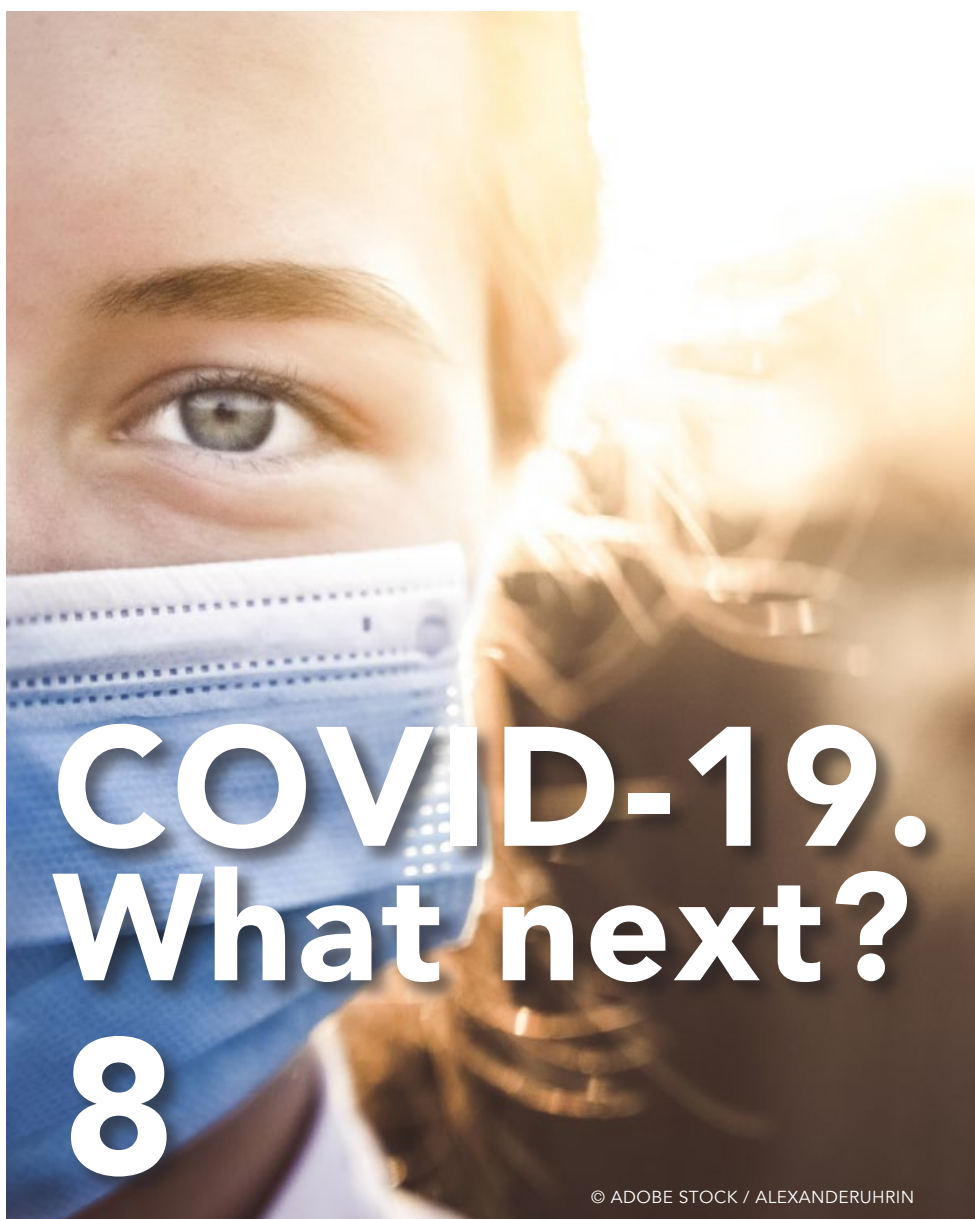
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Vevey, Switzerland, 1819: François-Louis Cailler invents the now-familiar **tablet format** for chocolate. His simple idea makes chocolate available and **affordable worldwide**. Today, **one billion** Swiss-made chocolate bars are produced each year.

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**COVID-19.**

WHAT NEXT?

**T**he COVID-19 pandemic has turned our whole lives upside down in no time. Of course, this initially affects our health and then also our coexistence, our private life and professional life. The pandemic has caused many cuts. The storm that has swept across the entire planet from China since February has first reached the individual and then also the organizations and companies in which they are employed. The economy, trade and industry were swirled vigorously. People who are at home cannot produce anything. And people who are at home and do not know what the future will be do not buy anything. Virus and global shutdown brought the world economy into a crisis that most experts consider to be more serious than the financial crisis.

The textile and clothing industry, as a global industry with a long supply chain, has hit the pandemic particularly hard with all its effects. Especially for the textile countries, whose gross domestic product is significantly dependent on a functioning textile industry, the situation can certainly be described as a disaster. For India, for example, a survey by the Clothes Manufacturing Association of India (CMAI) with around 1,000 participants showed that sales figures for clothing fell to a historic low of -84% due to the pandemic and the closure of contacts.

At least the spread of the virus has meanwhile been reduced in almost all countries, contact bans have been lifted in many countries and social and professional life have normalized at least in large parts of the world. However, it is a normality with limitations, often referred to as „new normality“. Today, we still don't know exactly where we are. If the crisis is over, if it is on its way to being ended, if it is only interrupted and is coming back, or -in the worst case- if we are just at the beginning. All of this cannot be reliably predicted and poses a great dilemma for both people and companies. In great uncertainty, we have to plan different future scenarios for ourselves.

## THE CRISIS CREATES CRISIS

In this article, we first want to look at the effects of the crisis on individual segments of the textile industry and afterwards look at possible future scenarios from a medium to long-term perspective. How badly is the crisis affecting our industry and what strategies and ideas are there to survive and maybe even get out of it stronger. What effects and losses do companies expect and are there current figures that may be more meaningful for the actual situation? To do this, we rely on industry sources such as publications from associations, on annual reports from companies in the industry, as well as on external analyzes by consulting firms.

## ITMF SURVEY SHOWS A DISASTROUS SITUATION FOR THE MOMENT

Between April 16 and 28, 2020, the ITMF conducted three surveys among its members and affiliates and associations to investigate the effects of the corona pandemic on the global textile value chain, especially current orders and expected sales in the year 2020. In total 600 companies from around the world participated. Results for current orders for world average dete-

riorated within the three phases of the survey, from a decrease of 8% to a decrease of 33% to a decrease of 41%. In the third phase, participants from the East Asia region reported a decline of 28%, Southeast Asia of 43%, South Asia 41%, Europe including Turkey of 45%, Africa of 48%, South America of 41% and North America of 48%.

Orders in East Asia dropped visibly less (-28%) than in all the other regions (-40% and more). It can be assumed that this region, which was hit first by the Corona-crisis, is also recovering first from it. Especially China and Korea were able to contain the epidemic successfully. In the last few weeks, most Chinese textile companies have ramped up production significantly. Likewise, off-line retail stores have reopened, and consumption is picking up again in East Asian countries. It remains to be seen what the consumption behaviour will be like in China, Korea and other places once shops are open again.

### SIGNIFICANT DIFFERENCES IN EXPECTED SALES

A similar picture emerged for the expected turnover in 2020 compared to the previous year. Here, too, the result deteriorated on average worldwide between

the individual phases from initially -10% to -30% to finally -33%. Companies in Europe are expecting turnover in 2020 to be down by "only" -22%, a figure significantly better than the -33% reported in the second survey. Companies in East Asia are expecting turnover to be down by -26%, which is close to what was reported in the second survey (-24%). Companies' turnover expectations in South East Asia and South Asia on the other hand have deteriorated significantly. These regions were hit later by the Corona-pandemic and hence the full impact was felt with a delay. Compared to 2019, expected turnover for 2020 is down to -38% in South East Asia and to -31% in South Asia. Turnover expectations in Africa (-42%), South America (-45%) and North America (-29%) have not changed much since the second survey.

### PARTICIPANTS OF THE ITMF SURVEY HOPE FOR QUICK RECOVERY



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If you compare the values of the current orders with the expected turnover, it is noticeable that the forecast slump in turnover for most regions is less than the current situation for orders. Since it cannot be assumed that a particularly high turnover was generated before the crisis, it must be assumed that the survey participants trust the situation to improve over the course of the year. Only the values of the East Asia region are a mystery here. While the current orders are only valued at a minus of 28%, turnover for the full year is almost the same (-26%). One possible reason for this could be the missing sales in the time of the Chinese New Year, which maybe cannot be recovered. Otherwise, the figures would connote that a significant improvement in consumer behavior is not expected. In all other regions, the difference between a minus on current orders and a minus on expected sales is significantly higher, but not high enough to assume a quick return to normal sales. Confidence in a complete revival of the situation in the second half of the year would have to lead to better values if sales were otherwise distributed more or less equally over the months. The only clear exception here is the Europe region. While the value of current orders has dropped drastically by 45%, the participants here only expect a 22% drop in sales for the full year.

### EURATEX PICTURE FOR EUROPE DOESN'T LOOK SO GOOD

Let's take a closer look at Europe. On 17th April, Euratex, the European Apparel and Textile Confederation, announced that according to a recent survey among European textile and clothing companies, short term prospects for the industry are dramatic: 60% of companies expect sales to drop by half (and 30% expects a reduction of even 80%). 70% of companies has serious financial constraints and 80% of the sample has (temporarily) reduced workforce, using temporary unemployment schemes where available. Production companies report problems in their supply chains, whereas retailers face the problem of a "lost Summer season". One out of four companies is considering to close down.

### THE TEXTILE INDUSTRY IN INDIA IS AT A STANDSTILL

That sounds worrying, but the bottom isn't reached yet. To do this, we have to look to Bangladesh or India, because it looks even more dramatic here.

In the survey conducted by CMAI, over 83% of the factories surveyed reported sales of less than 5% in May compared to the same month last year. By the end of May, only 22% of the factories were in normal operation, while 40% made personal protective equipment (PPE). CMAI estimates that the apparel market will shrink 15% from a value of 6.5 billion rupees in 2019 to around 5.85 billion rupees and assumes that most companies will not be able to generate in the April-June quarter more than 15 to 20% of their sales of the corresponding 2019 quarter. So, it looks even more dramatic than the ITMF forecast suggests, but it has to be taken into account that the survey happened against the background of being able to present facts for a government relief programme.

### MCKINSEY GLOBAL FASHION INDEX REVIEW SEES 30% DECREASE

The management consultancy McKinsey provided an assessment of the situation from the buyer's perspective, published in May. It says: „Our large-scale survey, conducted between April 14 and April 22, 2020, draws on the perspectives of 116 sourcing executives predominantly in North America and Western Europe; among them, they manage more than \$120 billion

in sourcing value. Sourcing executives indicate that the crisis has already led to steep cuts in sourcing volumes. The impact will hit hardest in the second quarter of 2020, when two-thirds of fashion-sourcing executives expect a cut in volumes of at least 20 percent." Furthermore, they say: "In our recent McKinsey Global Fashion Index review, we estimate that revenues for the apparel and footwear sectors will contract by 27 to 30 percent in 2020 year on year with even deeper declines in some subsectors and geographies following five years of positive growth." That roughly corresponds to the ITMF figures.

Let's have a further look at current business figures from various segments of the textile business. We want to start with some of the largest fashion companies in the world, which, as listed companies, publish figures quarterly.

### H&M LOSES HALF OF SALES

H&M, fashion giant from Sweden, also has a fiscal year that differs from the calendar year. In the second quarter 2020, i.e. in the period 1 March 2020 to 31 May 2020, the H&M group's net sales decreased by 50 percent to SEK 28,664\* m (57,474) compared with the corresponding period last year. In local currencies net sales decreased by 50 percent. Online sales

increased by 36 percent in SEK and 32 percent in local currencies during the same period. The sales development during the second quarter was severely affected by the Covid-19 situation. In most markets, stores had to be temporarily closed and in the middle of April around 80 percent of the group's stores were temporarily closed. From the end of April onwards the H&M group started gradually reopening stores in a number of markets. Reopenings in each market are in line with local restrictions. The pace of the sales recovery varies at a large extent between markets. At present approximately 900 stores, representing around 18 percent of the group's 5,058 stores, are still temporarily closed. Online sales are open in 48 of the company's 51 online markets. The H&M group's total sales during the period 1 – 13 June this year decreased by 30 percent in local currencies compared with the same period in 2019.

### ADIDAS WITH STRONG DECREASE IN THE ASIAN PACIFIC REGION

Adidas reported in its Q1 2020 statement that global spread of the coronavirus during the first quarter of 2020 led to a significant number of store closures – both own- and partner-operated – and a pronounced traffic reduction within the remaining store fleet,

with a corresponding negative impact on adidas' top- development. Continued strong currency-neutral growth of 35% in e-commerce – the only channel that has remained fully operational in most parts of the world – could only partially offset the material revenue decline in the physical channels. As a result, the company's currency-neutral revenues decreased 19% in the first quarter, reflecting a 20% sales decline at brand adidas, while Reebok sales were down 12%. In euro terms, revenues also decreased 19% to € 4.753 billion (2019: € 5.883 billion).

### REVENUE DEVELOPMENT BY REGION REFLECTS PHASING OF GLOBAL CORONAVIRUS OUTBREAK

The significant revenue declines the company has been experiencing in Greater China since the end of January as well as in Japan and South Korea in March drove the combined currency-neutral sales of the adidas and Reebok brands in Asia-Pacific down by 45%. This development was mainly driven by a sales decline of € 800 million (-58%) in Greater China. The adidas report shows quite clearly that it refers to the months from January to March, when business in Europe and the USA was hardly affected.

### INDITEX SHOWS FIRST SIGNS OF RECOVERY

INDITEX is one of the world's largest fashion retailers, with eight distinct brands. The group's report for the first quarter gives a quite good impression of the situation, because INDITEX has a different fiscal year. It begins on February 1, and therefore includes a longer period in the lockdown. Inditex writes its' 1Q2020 has been materially impacted by COVID-19. Initial collections for Spring/Summer have been very well received by its customers. At the end of the period, 965 stores were open in 27 markets. It is expected that most key markets will have reopened by the end of June. Net sales in 1Q2020 reached €3.3 billion (€5.9 billion in 1Q2019), down 44%.

By contrast, online sales rose 50% in the first quarter and online sales in April increased 95%. Since the beginning of May, most markets on lockdown have been gradually reopening, albeit with social distancing measures in place. Sales trends began to improve in May, though they are not yet at normal levels. As of 8 June, 5,743 stores (78% of total) were open in 79 markets. Store & online sales in local currencies in May decreased 51%. Store & online sales in local currency from 2 June to 8 June decreased 34%. In the markets that

were fully open (54% of total stores) sales decreased 16%. The figures indicate a rapid improvement, but not a complete recovery.

### HUGO BOSS BELIEVES IN RECOVERY IN THE 3RD QUARTER

HUGO BOSS reported that in the wake of the COVID-19 pandemic and the related temporary closures of retail stores, the global apparel industry, including the upper premium segment, faced significant challenges in the first quarter of 2020. For HUGO BOSS, this inevitably resulted in a decline in sales, profitability, and cash flow in the first three months of the year. Sales of HUGO BOSS decreased 16% overall to EUR 555 million (Q1 2019: EUR 664 million). This corresponds to a currency-adjusted decline of 17%. After a very encouraging start to the new year, the global spread of the coronavirus led to a significant impact on the business. In the Asia/Pacific region, the effects began to be noticeable from late January, and currency-adjusted sales were down by a total of 31% in the first quarter. On the other hand, the decline in currency-adjusted sales in Europe and the Americas was less pronounced at 14% and 17%, re-

spectively. In both regions, the increased spread of the virus only began around one month later. While the vast majority of the own store network of HUGO BOSS was affected by temporary closures in the first quarter, the Group's own online business continued to enjoy strong momentum. With encouraging currency-adjusted growth of 39%, the first three months of 2020 marked the tenth consecutive quarter of strong double-digit growth of the own online business. Furthermore, HUGO BOSS expects both sales and earnings declines in the second quarter of 2020 to be more pronounced than those recorded in the first quarter. This will mainly be a result of the continuing closures of the Group's own stores as well as points-of sale at important partners in Europe and the Americas. Overall, these two regions combined usually contribute around 85% to Group sales. In total, HUGO BOSS hence expects currency-adjusted Group sales to decrease by at least 50% in the second quarter. Nevertheless, the company is confident that from the third quarter on, the retail environment will gradually improve. This should also positively impact the Group's sales and earnings development in the second half of the year. Hugo Boss is one of the few companies to give a small outlook for the future. Furthermore, the numbers also show exactly how the decline in sales spreads with the wave. So the Boss people suspect a curve with an apex located in the second quarter. This seems logical under normal conditions with the situation remaining roughly the same.

Let's take a quick look at the United States to complete our overview. Here we can even look at figures of textile manufacturing companies, because three of these are listed on the NYSE: Albany International, Culp and Unifi.

### USA HARDLY AFFECTED IN THE FIRST QUARTER

Unifi, Inc., one of the world's leading innovators in recycled and synthetic yarns, reported net sales of \$171.0 million for the third quarter of fiscal 2020 ended March 29, 2020, compared to \$180.0 million for the same period in the previous year. The decline has been driven by lower polyester raw material costs, lower nylon volumes and unfavorable foreign currency translation, they stated. Despite a significant shutdown in China during the coronavirus outbreak in that country, the Asia segment was able to recover quickly and restore its continued sales growth, with a 28% increase in sales volumes led by REPREVE®-branded products. Albany International Corp., a global advanced textiles and materials processing company, reported net sales of \$235.8 million for its first quarter of 2020, which ended March 31, 2020. This is 6.2% lower when compared to the prior year, caused by sales declines of 7.4% in Engineered Com-



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posites and 5.4% in the Machine Clothing segment. Here, too, the decline was not explicitly linked to the COVID-19 crisis.

Culp, Inc., one of the world's largest marketers of mattress fabrics for bedding and upholstery fabrics for residential and commercial furniture having operations located in the United States, Canada, China, and Haiti, does not have a current financial report on the period, but gave a COVID-19 statement on Apr. 3, 2020: "Culp has experienced significant reductions in demand in many of its markets. The company has temporarily closed its facilities in Canada and Haiti due to government-mandated closure requirements and has reduced production schedules at other facilities due to declining demand resulting from customer and retail store closures."

Although these are only excerpts, they support the thesis that the decline in sales in the individual regions took place one after the other and happened relatively quickly and violently.

## TEXTILE MACHINE MANUFACTURING ALSO WEAKER

Now let's take a look at a completely different segment. As you would expect, the crisis also hit mechanical engineering companies hard in many segments. Rieter, leading manufacturer of spinning machines, explained at May 28th its business situation against the backdrop of the COVID-19 pandemic. Due to COVID-19, a large number of spinning mills have stopped production worldwide. Since the end of March 2020, this has led to low demand for spare parts and wear & tear parts and delays in testing programs during the development of new machines. Customers are postponing investment projects or are unable to implement them due to restrictions imposed by national governments. This results in low demand for new machines. Rieter expects sales and earnings in the first half of 2020 to be significantly below the prior year level. The effects of COVID-19 will place an additional burden on the first half of 2020. Rieter therefore expects sales in the first half of 2020 to be less than CHF 300 million. Despite the countermeasures implemented at the net profit level, this will lead to a loss in the mid double-digit million range.

Also, Oerlikon reported in the financial first quarter report that Group order intake, sales and EBITDA were negatively impacted by the COVID-19 pandemic due to the extended shutdowns in China and the beginning of lockdowns in Europe. Sales for the Man-made Fiber segment decreased by 19.3% to CHF 205 million, attributed to the lockdown in China and to lower demand for equipment and systems for special filament (carpet and industrial yarn) and plant engineering (polymerization, staple fibers and nonwovens), particularly in North America, Europe and Asia. On the other hand, Oerlikon also announced positive news. The segment received new large contracts for filament spinning systems from three of the world's leading manmade fibers manufacturers in China. The three projects have a total value of more than CHF 600 million. A very small proportion of these projects will be recognized in order intake in 2020, and the majority will be accounted for in 2021 and 2022. Despite the new contracts, the segment noted a decline of 51.4% to CHF 144 million in order intake, partly due to the delay in financial clearance in China as a result of the shutdowns. However, due to its financial strength, Oerlikon was also able to make an acquisition in the first quarter. The company took over the majority stake in Teknoweb Materials s.r.l., which was established in 2017 as a joint venture to extend the nonwoven production system portfolio to include the attractive market for disposable nonwovens. Furthermore, due to the COVID-19 pandemic, a strong glo-

bal demand for Oerlikon's meltblown (nonwoven) technology used to produce surgical face masks has been noted. This demand is expected to grow in the upcoming quarters, driven by government regulations and the need for greater self-sufficiency and reduced reliance on imports for critical medical items. To support this growth, production capacity for the meltblown technology has been ramped up and the delivery times of these systems significantly reduced. At Oerlikon, the mix of good and bad news shows once again how positive diversification of services and markets is in a crisis.

So much for our considerations on the forecasts and figures for the development of the global textile market in 2020 with individual regions and countries and different segments from retail to textile machine manufacturers. Let's look ahead.

### OUTLOOK: LIQUIDITY AND SOLIDARITY IN THE SHORT-TERM

It is evident that in-depth short-term strategies that can bring companies through the crisis cannot be presented here. The respective general situations in the countries and markets are too different. In addition, it differs too much in terms of how far the crisis has

progressed or has subsided. In most countries and regions, there are aid programs and support services provided by states and large NGOs, although the details vary considerably. All major textile associations had accordingly asked their governments to support the textile industry and guide them through the crisis. For example, Euratex stated in April, "to safeguard the industry short term measures are needed, such as accessing liquidity, re-opening shops as quickly as feasible (to create demand), guaranteeing a smooth functioning of the internal market and avoiding any disruption in export markets." Also, the ITMF made some suggestions for Government support like loans with low interest rates and deferred repayment, delayed tax payments, delayed social security payments, short-work schemes and reduction of power costs.

How the individual can survive the crisis also depends on the behavior of the community and the solidarity of all participants. This was not necessarily the case at the beginning of the crisis when numerous market participants acted very selfishly and ruthlessly, and many orders were canceled unilaterally. Thereupon the International Labour Organization (ILO) started a Call to Action to set out urgent priorities and specific commitments for organizations across the industry to endorse as the first step to collective action. The paper "COVID-19: Action in the Global Garment Industry" aimed to catalyse action from across the global garment industry to support manufacturers to survive

the economic disruption caused by the COVID-19 pandemic and to protect garment workers' income, health and employment. Many other organizations and companies followed the demands expressed there.

For example, ITMF called upon brands and retailers to act responsibly and sustainably. The statement says: „The textile value chain is only as strong as the weakest link in it. It is important to realize that in a situation of global demand and supply disruptions, cooperation and dialogue are paramount for the entire supply chain. Our industry is facing demand shocks due to lockdowns around the world, which have posed enormous challenges to the retail industry. Passing the loss and pain to suppliers by cancelling orders cannot be the answer. To the contrary, cancellations will create even more problems by weakening the supply chain further. Textile and apparel companies are willing to do their utmost part to overcome this demand shock by delaying shipments or deferring payments, when necessary. But this has to be within reasonable limits. It is imperative that brands and retailers and their suppliers cooperate closely and look for solutions that support each other."

There is nothing to add.

### KEY QUESTION: WHAT WILL THE VIRUS DO?

It is equally evident that we still do not know enough about the virus and therefore a forecast of the end of the crisis cannot be given reliably. However, some trends, that are very likely to influence the strategies of companies, can already be identified in the markets. At the latest with an end to the crisis and a return to normal. Companies that have been able to implement all short-term measures for crisis management now have the opportunity to put themselves in an improved position for the future with a revised strategy and implementation plans derived from it.

### MEDICAL TEXTILES AS A SHEET ANCHOR

In conclusion of its survey on the situation in the COVID-19 crisis, the ITMF gave the companies some recommendations for action to survive the crisis and to be prepared for the future. Companies should increasingly think about diversification and should currently focusing on medical textiles. They are intended to streamline organization and production processes and should accelerate the reassessment of their existing supply chains.

The acceleration of digitization and investments in sustainable production are also mentioned.

### DIGITALIZATION, OPTIMIZATION AND SUSTAINABILITY AS A PERSPECTIVE

Euratex looks at the future in line with its task from a European perspective and writes: "In the longer run, a strategic plan needs to support the relaunch of our industry and enhance the global competitiveness. Critical supply chains should be brought back to Europe, and we need to ensure a level playing field on the global market and, especially, on imported goods. Innovation, digitalisation and green economy remain a target for the industry, but they need to be reviewed in light of a relaunch programme for the sector."

INDITEX writes in its quarterly report that the company has three key strategic areas: digitalisation, integration between stores and online, and sustainability. Stores will play a stronger role in the development of online sales due to their digitalisation and capacity to reach customers from the best locations worldwide. Furthermore, Inditex announced online sales are expected to reach more than 25% of total sales by 2022.

In all of these recommendations and strategies for the future, digitization and sustainability emerge as two dominant topics. Both are part of the so-called megatrends, which were mentioned as essential cornerstones of a successful future strategy - even before the crisis. Now, due to the crisis, they may get a further acceleration. The management consultancy McKinsey provoked in an analysis paper on digitization in the fashion industry entitled „Fashion's digital transformation: Now or never“.

### PUSH FOR DIGITIZATION?

In this article, the authors report that some fashion companies have detected, that they are better equipped than others, mainly because of their digital expertise. The authors look at the previous effects of COVID-19 on the apparel, fashion and leather industry (AF&L industry) and propose measures how AF&L companies can expand their digital and analysis functions. On the one hand to ensure business continuity and minimize the disadvantages of COVID-19 and on the other hand to get out of the crisis in a position of strength. The focus is initially on expanding sales and e-commerce. It is interesting to note, for example, the analysis mentioned that not all consumers in China had returned to the POS in stores and malls



when they were open again. This is seen as a tendency that the online routes to the customer, which grew during the crisis, are partially preserved. We found similar statements and forecasts in the reports of the big fashion companies. Inditex e.g. in its forecast increased the share of online purchases in total sales significantly to 25%.

Otherwise, the article considers the topic of digitization much further than just sales: "Digital is not only an increasingly important sales channel; it can also help companies adapt cost structures and make each step of the value chain better, faster, and cheaper." In the ongoing article, the topic of sales is extended to the entire digital customer relationship. In addition, there are suggestions for optimizing the supply chain, logistics and warehousing through digitization and for digital product development in the form of a digital design of the collection and corresponding presentation in virtual showrooms. What may be neglected is the link between digitization and sustainability. The possibility of optimizing sustainability through a digitized supply chain is mentioned, but that's not enough. There is still a lot of potential here. You have to prove your own sustainability for each product individually. Maybe even quantify it.

### DO TEXTILE COMPANIES NEED OWN BRANDS AND SALES CHANNELS?

All in all, fashion companies from the brand and retail sector can take a lot from the McKinsey analysis. Textile production companies must certainly perceive the same trends in many areas but deal with them differently. Their biggest problems are likely to be faceless among consumers. They choose a brand or a retailer. They don't care who produced the goods. This means that there is too much dependency on the client to be prepared for such a crisis and to be able to act independently. Quality, price and production time are crucial criteria and also necessary to assert yourself against competitors, but they do not help if the market itself breaks down. The least affected are those textile companies that have a very close and good personal relationship with their clients and who are also heard on strategic decisions. There are a few of them. However, there are much more companies that receive their orders through brokers and therefore have no customer relationship with the buyers of their goods. Ultimately, it would be a big step forward for those companies that can master it, to develop themselves into retailers and integrate vertically from the bottom up.

Such an approach is certainly greatly simplified by the growing willingness of consumers to make purchases online compared to the establishment of a brick-and-mortar store chain. In connection with licenses from strong brands in the field of sports and entertainment, such a path would have to be followed, at least in theory.

And even smaller companies could find a way to new sales and use their flexibility and smaller lot sizes. Many companies are already using the alibaba.com platform to establish customer relationships with smaller dealers in the large sales markets of Europe and America. Here strong relationships can be built through mutual growth at eye level. Relationships that may even be strong enough to master crises together.

### TECHNOLOGY REMAINS CORNERSTONE FOR SUCCESS

One thing is also clear. These are just ideas or approaches that remain niches for a long time even if they are successful. With the return to normality, the return to normal competition also comes.

And, as usual, it will be shaped by the factors of quality and price, which in turn depend on the quality, reliability and productivity of the production tools and employees. And that means, those who can invest in the latest technology in textile machines will have the edge. In addition to the advantages already mentioned, these companies will also be able to produce more sustainably, with lower energy consumption, a lower carbon footprint and with less use of chemicals and water. And that is exactly what will be crucial in the near future. ITMA 2019 has once again underpinned its special position as a showcase of innovations and many companies have introduced new machines and processes that significantly improve the factors mentioned above. In the end, the crisis will widen the gap between strong and weak companies. Strong companies with the appropriate financial strength will surely examine their opportunities to position themselves even better through targeted investments in the machine park or even to diversify and to conquer other market segments. If in near future sustainability turns from a mere promise to a measurable and counterfeit-proof quantifiable factor, a cheap price and a small profit margin will no longer be enough to let companies exist. Checking production for sustainability and leveraging all potential will become a key factor.

## IS THE ANSWER A CIRCULAR ECONOMY?

Some NGOs such as Circle Economy even see the crisis as a turning point, as an unexpected opportunity for a rapid paradigm shift from waste management to a circular economy. „If you start from scratch, why not do it right,” says the credo of corresponding initiatives quite well. For example, the Club of Rome published an “10-point Action Plan to create a circular bioeconomy devoted to sustainable wellbeing” in early June and wrote: “The need to react to the COVID-19 crisis is a unique opportunity to transform our economy and put forward the change that our society needs to create a sustainable and desirable future.” Already at the beginning of March, the globally known and respected non-profit organization published an open letter to all company directors - a „Call to Action from the Planetary Emergency Partnership”. It says: “Covid-19 has shown us that overnight transformational change is possible. A different world, a different economy is suddenly dawning. This is an unprecedented opportunity to move away from unmitigated growth at all costs and the old fossil fuel economy, and deliver a lasting balance between people, prosperity and our planetary boundaries.” And further: “We call on leaders to have the courage, wis-

dom and foresight to seize the opportunity to make their economic recovery plans truly transformative by investing in people, nature and low carbon development”. Finally, they say: “This is the moment for all of us to rise to the challenge of collaborative leadership and work together to find pathways to emerge from this emergency with a global economic reset. People and nature must be at the center of this deep transformation for redistribution, regeneration and restoration. Prosperity for people and the planet is possible only if we make bold decisions today so that future generations can survive and thrive in a better world.”

## BACKING ALSO FROM THE FASHION INDUSTRY

On June 13, the Ellen McArthor Foundation also published a corresponding call in the Financial Times entitled „A solution to build back better: the circular economy”, which had 50 signatures. CEOs of some of the world’s biggest companies, policymakers, philanthropists, academics, and other influential individuals have reaffirmed their commitment to building a circular economy. The call says: “As we rise to the challenges caused by the coronavirus pandemic, the question is no longer should we build back better, but how. Many have already called for a response to the devastating impacts of this pandemic that does not

turn attention away from other global challenges such as climate change and pollution. The circular economy offers a solution for how to do so". Dame Ellen MacArthur said: "Today CEOs of some of the world's most influential companies, policymakers, philanthropists, academics, and other influential individuals have reaffirmed their commitment to building a circular economy. Together we can build an economy that is distributed, diverse, and inclusive, rather than extractive, polluting, and exploitative." In addition to many others from the textile industry, the demands were also signed by two leaders from worldwide top 10 fashion companies: Helena Helmersson, CEO of the H&M Group and Pablo Isla, Executive Chairman of Inditex. Helena Helmersson commented the call as follows: "We must take the responsibility of our future together. Companies and governments have to collaborate, be transparent and show leadership in their transition to a circular economy. Taking steps back in what already has been achieved is not an option. We are committed to take our part, and to follow our vision of becoming circular and climate positive".

The list of signatories for both initiatives is long and prominent and the number of supporters of a faster change to sustainable action is getting longer and longer.

Looking at all of these initiatives and their supporters, it cannot be completely ruled out that the COVID-19

crisis will really be a turning point for the start of a new era. History has shown us that disasters have this potential.

## NEW BENEFITS THROUGH TEXTILES

However, to give you a vision for a revitalization of the textile industry, we also would like to present an idea for a smaller implementation. Textiles that prevent the spread of viruses and bacteria could also represent an extremely lucrative future market. This does not only mean medical textiles, but textiles that actively fight pathogens with a finish or an integrated material. The first developments are already available. Such a market will primarily emerge for medical workers, but it can be possible that even in the de facto saturated western industrial world, people will renew their wardrobes extensively if the new products demonstrate a concrete benefit for their health. Such a benefit would come very close to a basic value of textiles like to provide warmth, and thus has a completely different dimension in terms of giving benefits and satisfying needs than simple fashion trends. In addition, the willingness to spend money on the protection of people working in the medical sector should have increased significantly due to the COVID-19 crisis and should also remain stable for at least

a few years. Technologies that were previously considered too expensive could thus start a new attempt to shape markets.

A technical implementation for the fight against bacteria through textiles has been introduced many years ago. For example, by the US company Noble Biomaterials. The company offers healthcare fabrics powered by X-STATIC® antimicrobial technology. It is made by permanently bonding 99.9% metallic silver to the surface of the fiber. Products powered by X-STATIC inhibit the growth of bacteria on the surface of fabrics. In June Noble Biomaterials announced the results of third-party laboratory testing of fabric made with its X-STATIC® technology against human coronavirus OC43, a common, strong strain of coronavirus. The lab results, from BioScience Laboratories Inc., showed that the metallized Noble Biomaterials fabric reduced the viability of the virus six times faster than the unmetallized control fabric. Several Noble Biomaterials customers, including mask manufacturers Flaviatex and Filartex, are already using this material. Another kind of technology comes from Murata Manufacturing and Teijin Frontier. They have jointly developed the world's first piezoelectric fabric „PIECLEX" that generates electrical energy and exhibits antimicrobial performance when a motion is applied. Furthermore, the renowned Aachen Institute for Textile Technology (ITA) published that

they, together with researchers from the Free University of Berlin, were able to show in an investigation that innovative textiles for face masks can directly deactivate SARS-CoV-2. Textiles developed by the Swiss company Livinguard can reduce high amounts of SARS-CoV-2 virus particles within a few hours by up to 99.9 percent compared to the materials previously used for mask production. The principle of Livinguard technology is to provide the textile surface with a strong positive charge. When bacteria and viruses come into contact with the technology, the negatively charged microbial cell is destroyed, which leads to a permanent destruction of the pathogens. The German company zwissTEX has developed zwissCLEAN MASK COMFORT and names itself a pioneer among manufacturers of antimicrobial masks for the mouth and nose. Unlike conventional models the zwissCLEAN MASK COMFORT actively and highly effectively eliminates bacteria and viruses thanks to the latest textile technologies. And Arvind Limited, India's leading textile-to-retail conglomerate, seems to have picked up on our idea. In connection with the announcement of the launch of Anti-Viral Textile technology for the first time in India under its brand "Intellifabrix" they stated: "While fabrics have been usually associated with fashion, as the world faces the COVID-19 crisis, there is an urgent need for antiviral fabrics in our daily lives." Arvind has partnered with Swiss Textile Innovation leader HeiQ Materials AG in association with Taiwanese Specialty chemical major

M/S Jintex Corporation to introduce this revolutionary anti-virus technology in India. All these solutions are at least promising applications for such products and markets and there are much more.

## WINNERS AND OPPORTUNITIES

It must also be mentioned that, as in every crisis, COVID-19 also means that there are numerous industries and companies that can profit economically, because they simply offer products that are in high demand during the crisis. Within the textile industry, this is a selection of nonwoven products. Those who have their place in the supply chain for medical protective clothing based on nonwovens are likely to see strong sales growth in 2020. For example, the manufacturer of nonwovens Suominen reported a new, improved outlook for the company in mid-June. Suominen expects that in 2020 its comparable operating profit will improve significantly from 2019. In 2019, Suominen's operating profit amounted to EUR 8.1 million. In financial years 2020 and 2019 Suominen had no items affecting the comparability of the operating profit.

The growing demand for nonwovens is obvious, but there are a large number of less visible markets, industries and products that will grow due to the COVID-19 crisis and the increased need for protection

and security. There are already a couple of analyzes and market studies that examine this closely. Some research can be found here by searching for COVID-19 and the terms textile, yarn or fiber in the big press portals like PR Newswire, Cision or Business Wire. On the subject of opportunities in the crisis, it should also be mentioned that there are of course a number of very interesting funding programs from countries and international communities. The EU, for example, grants €314 million to innovative companies to combat the virus and support recovery. The selected 36 companies that will contribute to the fight against the coronavirus will work on pioneering projects, such as on expanding the production of bio-decontamination wipes, developing ventilation monitoring systems that provide first aiders with real-time feedback on the quality of the ventilation given to the patient, developing an antibody platform to treat severe cases of infection, and many more. Unfortunately, no companies that can be directly assigned to the textile industry have been selected. Three companies applied for a funding program: SMARTEX from Portugal with the topic „Detection of defective textile production“, QIMOVA from Denmark with „Intelligent control system based on smart textiles to reduce pressure injury risk by real time measure of tissue viability, and intelligent trigger of prevention strategies adapted to user and context“ and CLUSONE from Italy with "WATER AND ENERGY EFFICIENT INDUCTION HUMIDIFICATION SYSTEM FOR TEXTILE APPLICATIONS".

## WHEN WILL THE MARKETS RECOVER?

Finally, back to those who hope that the markets will normalize and recover quickly. It is obvious that in addition to the question of the status quo of the actual pandemic, a lot will depend on consumer behavior, which is always very difficult to predict in crises. As a rule, surveys are very strongly influenced by the current news situation. And a general analysis is also extremely complex because there are too many factors in all directions. Based on a two-month shutdown and subsequent total normalization of consumer behavior, one could hope that the decline in sales for the financial year will remain manageable. You can open the very, very simple calculation that the decline in sales will then be a maximum of 2/12, i.e. 1/6 and thus around 16.6%. Assuming that some purchases were only postponed, for example, because new summer shoes will be bought in June, if it didn't happen in May, the number could get even better. If you look in detail, however, the real complexity becomes apparent. In this context, let's pick out the current uncertainty in people's vacation planning that actually exists, even if the borders are slowly opening up. Is there a correlation to textile here? Yes, in many ways. A vacation is definitely an occasion for a partial refreshment of the wardrobe. A loss would be negative.

However, the suffering of the tourism industry could also make the textile industry happy. Vacation budgets are large compared to clothing budgets and if long-distance travel is cancelled the budget could be invested in many new favorite items. However, many wishes also would fight here for potentially freed funds from a vacation budget. For example, home furnishings and renovation. Technology. On the other side, if you look for negative effects for the clothing industry, you will quickly find some. The lack of mega-events such as the Olympics and the European Football Championship, which fundamentally spur the purchase of sports clothing, will have a negative impact. So, there is a lot pro and contra for a quick recovery and it remains to be seen how the annual figures actually develop. McKinsey likes to look to China and South Korea, because developments and trends can first be foreseen there according to the spread of the virus. At least if you assume that consumer behavior is transferable to the rest of the world. Of course, there are also forecasts from the textile industry itself. In a fourth survey in June, the ITMF asked the 600 participants: „When do you expect quarterly turnover to be back to pre-crisis levels“? Around 70% answered they expect a recovery to the pre-crisis level within the next year. The majority (23%) is expecting this to be in the 1st quarter of 2021, followed by 21% that are expecting this to be the case in the 2nd quarter of 2021.

Another 14% have the expectations that this will be the case in the 3rd quarter of 2021. Nevertheless, 20% of companies are expecting a faster recovery in the 4th quarter 2020. In a few weeks with the figures for the second quarter, which will probably appear at the end of July, we already know more.

## CONCLUSION

So much for the COVID-19 crisis and its effects on the textile industry. Even though this text is long, it is striking that it can only represent a tiny section of everything that has been triggered by the economic crisis for our industry. Of course, this primarily affects the fates of people, but in the medium term these will also depend on the vitality of their companies. Coping with the crisis itself and, apart from a few inglorious examples, the solidarity that exists to survive the crisis together gives much hope. And the many visionary ideas and corresponding initiatives to get out of the crisis better as a whole global economy also convey a lot of confidence. Then we will put our lives back on our feet as it was. No, sorry, better than it was.

NEW EU CIRCULAR ECONOMY ACTION PLAN FOR TEXTILES

# IS RECYCLING CHANGING THE TEXTILE LANDSCAPE FOREVER?





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**T**he global crisis triggered by the SARS-COV2 corona virus will change and accelerate many processes in textile value creation, but it will not fundamentally change them. Numerous experts agree on this. However, such a fundamental change with all its facets, from raw material sources and fashion design to production including new, disruptive business models, shifts in production locations, use of new materials and blends, may well come from a completely different side to the industry: the will to produce more sustainably and above all, the will to replace the existing linear production with a functioning closed circular economy in the foreseeable future. This will also affect textiles. And even on a very large scale.

## NEW EU REGULATION

On 11th March 2020, the European Commission adopted a new Circular Economy Action Plan - one of the main building blocks of the European Green Deal, Europe's new agenda for sustainable growth. With measures along the entire life cycle of products, the new Action Plan aims to make the EU economy fit for a green future, strengthen its competitiveness while protecting the environment and give new rights to consumers. Building on the work done since 2015, the new Plan focuses on the design and production for a circular economy, with the aim to ensure that the resources used are kept in the EU economy for as long as possible. The plan and the initiatives therein will be developed with the close involvement of the business and stakeholder community.

Executive Vice-President for the European Green Deal, Frans Timmermans, said: "To achieve climate-neutrality by 2050, to preserve our natural environment, and to strengthen our economic competitiveness, requires a fully circular economy. Today, our economy is still mostly linear, with only 12% of secondary materials and resources being brought back into the economy. Many products break down too easily, cannot be reused, repaired or recycled, or are made for single use only. There is a huge potential to be exploited both for businesses and consumers.

## RECYCLING

With today's plan we launch action to transform the way products are made and empower consumers to make sustainable choices for their own benefit and that of the environment."

**The Circular Economy Action Plan put forward today as part of the EU Industrial Strategy presents measures to:**

- **Make sustainable products the norm in the EU**
- **Empower consumers**
- **Focus on the sectors that use the most resources and where the potential for circularity is high. This includes textiles, plastics and packaging**
- **Ensure less waste**

Concerning textiles, the Action Plan says: "Textiles are the fourth highest-pressure category for the use of primary raw materials and water, after food, housing and transport, and fifth for GHG emissions. It is estimated that less than 1% of all textiles worldwide are recycled into new textiles. The EU textile sector, predominantly composed of SMEs, has started to recover after a long period of restructuring, while 60% by value of clothing in the EU is produced elsewhere. In the light of the complexity of the textile value chain, to respond to these challenges the Commission will propose a comprehensive EU Strategy for Textiles, based on input from industry and other stakeholders.



A new Circular Economy Action Plan has been adopted on 11th March 2020 by the European Commission © European Union, [2020] – Source: European Parliament

The strategy will aim at strengthening industrial competitiveness and innovation in the sector, boosting the EU market for sustainable and circular textiles, including the market for textile reuse, addressing fast fashion and driving new business models.

**This will be achieved by a comprehensive set of measures, including:**

- **applying** the new sustainable product framework as set out in section 2 to textiles, including developing ecodesign measures to ensure that textile products are fit for circularity, ensuring the uptake of secondary raw materials, tackling the presence of hazardous chemicals, and empowering business and private consumers to choose sustainable textiles and have easy access to re-use and repair services;

- **improving** the business and regulatory environment for sustainable and circular textiles in the EU, in particular by providing incentives and support to product-as-service models, circular materials and production processes, and increasing transparency through international cooperation;

- **providing** guidance to achieve high levels of separate collection of textile waste, which Member States have to ensure by 2025;

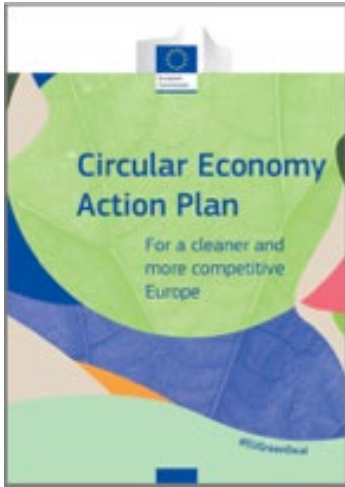
- **boosting** the sorting, re-use and recycling of textiles, including through innovation, encouraging industrial applications and regulatory measures such as extended producer responsibility.

Particular attention should be paid to the tight time horizon. The EU strategy for textiles is expected to be available next year, 2021. And the above-mentioned, separate collection of textile waste by 2025 basically also requires that there are possibilities and processes at an industrial level to process this textile waste.

### **MORE:**

[ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_420circular-economy.europa.eu](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_420circular-economy.europa.eu)

## RECYCLING



The new Circular Economy Action Plan shows the way to a climate-neutral, competitive economy of empowered consumers  
© European Union, [2020] – Source: European Parliament

[https://ec.europa.eu/environment/circular-economy/pdf/new\\_circular\\_economy\\_action\\_plan.pdf](https://ec.europa.eu/environment/circular-economy/pdf/new_circular_economy_action_plan.pdf)



The EURATEX strategy, "Prospering in the Circular Economy 2019", elaborates on 12 key points, 6 conditions and 38 specific proposals under 9 actions  
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[https://euratex.eu/wp-content/uploads/2019/01/EURATEX\\_CE\\_policy\\_brief\\_LR.pdf](https://euratex.eu/wp-content/uploads/2019/01/EURATEX_CE_policy_brief_LR.pdf)

### APPROVAL FROM THE EUROPEAN TEXTILE INDUSTRY

EURATEX announced the same day that they welcome the plan as it sets the foundations to change the way products are made, the way waste is managed, and the way people consume. The Action Plan wants to be as comprehensive as possible, involving all the actors in the value chain, citizens, Member States and local realities. The EU needs now to set the conditions to remove structural barriers, address or prevent market failures and bring harmonised solutions across the European single market. Essentially, the EU needs to create a European market for reuse of textile material and such an objective can be achieved with the upcoming Strategy for Textiles.

Therefore, EURATEX is asking the European Commission to focus on the following points:

- **99% of the textile and apparel industry is composed by SMEs.** The EU needs to take into consideration their specificities. In particular, SMEs lack fund to upscale their products and solutions, plus they need a legislative framework which is not burdensome. We ask the EU to remove barriers, not create new ones.



The EURATEX President, Mr. Alberto Paccanelli welcomed Mr. Calleja Crespo, Director General of the European Commission DG Environment at the Board of Directors meeting in December 2019 © EURATEX

- **Companies need a territory that can deal with the whole circularity process.** A company, which produces textiles by recycling used clothes or other fibers, should have a textile recycling facility in the vicinity, not 250km away. We, therefore, welcome the proposal of the European Commission to provide guidance to achieve high levels of separate collection of textile waste by 2025. It must be done in a well-organized manner, so to avoid tons of waste textile waiting to be processed.

- **Green Public Procurement will increase demand allowing business to invest in circularity.** *In 2015, public procurement accounted for 13.1 % of the GDP in the EU, this means that almost €1.923 bln were spent by public bodies purchasing goods or services. That is a formidable leverage which Member States can use to boost closed-loop productions, promote scale economies which lower costs and proactively drive changes. Authorities can then choose high quality and durable products, reward low-impact manufacturing processes, and favour products designed with recycled or biobased/biodegradable materials.*

EURATEX looks forward to the upcoming initiatives announced by the EC in the Circular Economy Action Plan, as it wants to be part of the development of policies, making circularity an efficient reality. According to EURATEX Director General Dirk Vantghem "this plan can be the starting point for a new structural dialogue with the EU and partners of the value chain. All the actors need to agree on what has to be changed and how to unleash circular textile products".

## EURATEX MANIFESTO

Last year, at the Techtextil / Texprocess 2019 trade fair, EURATEX had already reacted to the upcoming EU plans to promote textile recycling in the member

states and presented its own target paper, the „A MANIFESTO TO DELIVER A CIRCULAR ECONOMY IN TEXTILES“. Under the headings „FRAMING THE ISSUE“, „A NEW APPROACH“ and „REWRITING THE BOOK“, the association presented the initial situation, defined the framework and drafted the first demands and requirements.

[euratex.eu/circular-economy/](http://euratex.eu/circular-economy/)

## QUESTIONS ABOUT FEASIBILITY

The will to change to a circular economy is given both by the legislator and in the textile industry, but what about the current implementation options? Is there any chance of producibility or will it remain an initiative on paper? Of course, a large number of questions have to be clarified that have a significant impact on the entire textile landscape.

Let us assume that there would be a legal requirement that in 2025 every textile sold in the EU must have a recycling share of at least 20% of fibers from used textiles. Is this technically feasible from existing yarn or should there be new ideas for yarn? Would functional textiles still work this way? Would designers have to start from scratch and choose completely different

material compositions than before? Would specific yarn blends that are difficult or not at all recyclable even disappear from the European market? Is there actually recyclable material, i.e. waste textiles in sufficient quantity and quality or how and with what incentives could collections be promoted? Is a deposit system conceivable? Would recycling, yarn production and textile manufacturing take place in Europe or would old textiles be exported to be recycled in other parts of the world such as Asia or Africa? In that case, how would the system ensure the proportion of the recycled material in the textile and from Europe? Do we need new transparency systems and complete proof of the supply chain? And last, but not least, the million-dollar question seems to be whether the recycling of used textiles is technically possible in an industrial context? And if so, at what cost?

Anything else? Thinking a little further into the future, one can ask whether such a regulation would also herald the end of cheap textiles, fast fashion and multiple collections, and in this way the textile purchase would slowly change from a low-involvement cheap product to a high-involvement luxury product.

### CORNERSTONES OF CHANGE

Basically, three areas will be decisive for the recycling of post-consumer textiles:

- **Change in behavior among consumers with regard to the disposal of textiles**
- **Supply of procedures for collection and sorting with appropriate infrastructure**
- **Environmentally friendly recycling technologies that can be used on an industrial scale**

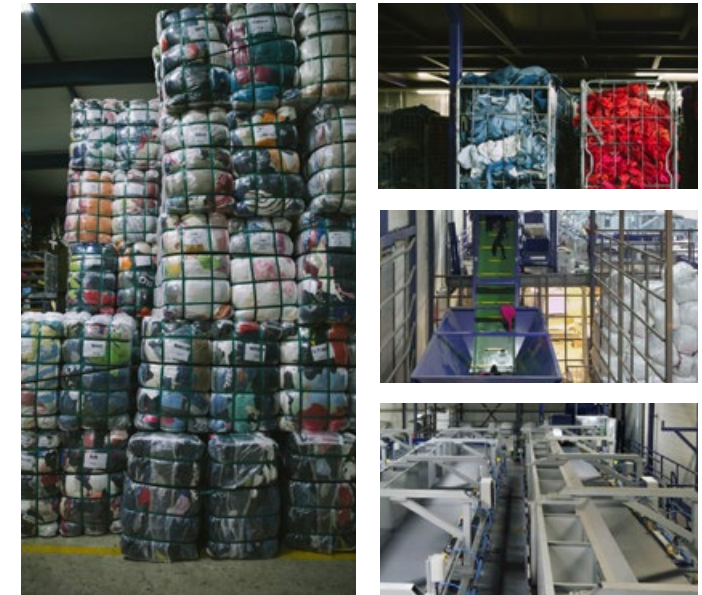
While the Commission and expert panels from now on have a maximum of 1.5 years to answer all these questions while developing the EU strategy for textiles, we just want to take a look at the state of the art! Are there new processes and applications or at least promising approaches to recycle used textiles and garments?

In recent years, textile recycling in Europe as well as in the world, influenced by the megatrend of sustainability and driven by numerous organizations, foundations, companies and scientific institutes, has definitely gained momentum. Results have been created that can be described as milestones.

### THE FIBERSORT MACHINE

Let us first look at the collection and sorting of used textiles. On March 12th, exactly one day after the EU action plan was announced, the Fibersort consortium (a collaboration between all different stakeholders in the end-of-use value chain, by name Circle Economy, Valvan Baling Systems, ReShare, Procotex, Worn Again Technologies and Smart Fibersorting) presented the market ready Fibersort machine to the industry and named it a cutting edge automated sorting technology that revolutionizes textile to textile recycling of post-consumer textiles. Fibersort is a Near Infrared (NIR) based technology able to categorize textiles in 45 different fractions based on their fibre composition and colour. Over the past years, the technology has been optimised, tested and validated to prepare it for commercialisation. The machine can now sort ~900 kgs of post-consumer textiles per hour, enabling a closed textiles loop.

Furthermore, the press release told us, in North-West Europe alone, around 4,700 kilo tonnes of post-consumer textile waste is generated every year. On average, only 30% of these textiles are collected separately - the rest is lost within household waste. Nevertheless, 24% of the textiles collected have the potential to be recycled into new textiles, but currently are not.



Fibersort, a cutting-edge automated sorting technology, revolutionizes textile-to-textile recycling of post-consumer textiles © 2020 Wieland Textiles

Let's do our own calculations. In terms of weight, 4.7 million tons of waste textiles correspond to the new purchases in the EU if one assumes 10 kg of new clothing for every EU citizen. They represent approximately 5% of the world's fiber production per year. Assuming that 24% of the total amount of used textiles, i.e. around 1.2 million tonnes, can be recycled and a Fibersort machine can sort around 6500 tonnes of textile per year at 900 kg per hour, only 173 such sorting systems would be needed. These are not a few, but it isn't an unbelievably large number.

## RECYCLING

It seems entirely feasible, especially since this technology is likely to develop rapidly if used accordingly. An admixture of 20% recycled fibers for new textiles would be feasible in terms of quantity.

[www.circle-economy.com](http://www.circle-economy.com)

[www.wieland.nl](http://www.wieland.nl)

### PROCESSES OF TEXTILE RECYCLING

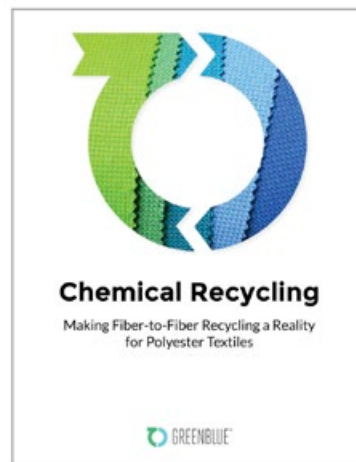
Now let's take a look at the technological processes for textile recycling. Is it possible to make new textiles from used waste textiles or are there insurmountable difficulties? This question affects both the technical and the economic side. Before we start, however, we would like to briefly review the general procedures for a better understanding. Textile recycling generally differentiates between chemical and mechanical processes.

In chemical recycling, the textile material is broken down into its raw materials on a molecular level. The quality of the material obtained here is relatively high, but the process is often complex, therefore expensive and not always environmentally friendly. In mechanical recycling, the textile material is only broken down to the fiber level. This leads to a loss of quality, since the individual fibers are shorter and can no longer

be spun into yarn of the desired strength. Therefore, they are preferably added to new fibers.

The overall idea is to find an efficient and inexpensive method for the different blended fabrics and dyeings. If this is not possible, it would be an alternative to have the difficult-to-recycle mixed yarns replaced by more recyclable ones. Of course, all types of combinations in the method are also conceivable here. The key objectives are once again quality and price. This brings us to the examples of new approaches.

[greenblue.org](http://greenblue.org)



GreenBlue, an environmental nonprofit dedicated to the sustainable use of materials in society, is offering a lot of information for textile recycling

© 2020 GreenBlue

### EASTMAN'S CARBON RENEWAL TECHNOLOGY

Promising success in the field of chemical recycling has been achieved by the US company Eastman with headquarters in Kingsport, Tennessee. In March 2019 this global specialty materials company announced its intention to pursue the launch of an innovative advanced circular recycling technology that uses polyester waste which cannot be recycled by current mechanical methods, and as a result, often ends up in landfills and waterways. Using the process of methanolysis, Eastman's advanced circular recycling technology breaks down polyester-based products into their polymer building blocks. These building blocks can then be reintroduced to the production of new polyester-based polymers, delivering a true circular solution.

Eastman was one of the pioneers in developing methanolysis technology at commercial scale and has more than three decades of expertise in this innovative recycling process. Furthermore, in April 2019 the company introduced a second innovation called Carbon Renewal Technology, which is capable of recycling some of the most complex plastic waste, including non-polyester plastics and mixed plastics that cannot be recycled with conventional recycling

## RECYCLING

technologies. With this new recycling technology, materials such as flexible packaging and plastic films, among others, can be diverted from landfills. By modifying the front end of Eastman's cellulose production, carbon renewal technology uses plastic waste as feedstock and converts it back to simple and versatile molecular components.

The process partially oxidizes the plastic and, at a very high efficiency, converts it into the basic building blocks of certain Eastman products, including Advanced Materials and Fibers segment products that serve ophthalmics, durables, packaging, textiles and nonwovens end-use markets. In November 2019 Eastman announced they have reached an agreement to give new life to post-consumer carpet which will now be recycled through Eastman's carbon renewal technology and converted into new materials to serve new and useful purposes. Those materials will be used to produce products used in Eastman markets, including textiles. In February 2020, Eastman's technology received the Re focus Sustainability Innovation Award 2020 from the Plastics Industry Association (PLASTICS).

[www.eastman.com](http://www.eastman.com)

### NUCYCL™ BY EVRNU – AN ENGINEERED FIBER

Another approach within chemical recycling is extremely interesting, too. It was presented to the public in July 2019 by the US company Evrnu, based in Seattle, Washington and founded in 2014 by Stacy Flynn and Christo Stanev. Evrnu names itself a textile innovations company and is the inventor of a new kind of engineered fiber called NuCycl™ made from discarded clothing.



adidas by Stella McCartney Infinite Hoodie. A proof-of-concept of a 100% recyclable hoodie created with advanced textile innovations company Evrnu © 2020 adidas

"NuCycl extends the life cycle of today's single-use textile fibers by extracting the molecular building blocks of the original fiber in a way that pristine new fibers can be created, again and again", Evrnu describes the new fiber. The item presented in July 2019 has been a so called Infinite Hoodie and was created together with adidas and Stella McCartney. Using NuCycl™ by Evrnu technology, the Infinite Hoodie is made from 60% NuCycl™ and 40% organic cotton. Furthermore, adidas stated, "that the fibers can be reused again and again to be remade into high-performance product. The performance garment signals a move towards a reality where products can be completely recycled and repurposed". In April 2020 NuCycl was selected as an honorable mention in the Fast Company's Best World Changing Idea category for 2020.

[www.evrnu.com](http://www.evrnu.com)

### SPINNOVA FIBRE - CIRCULATE THE SAME RESOURCE

In November 2019 Spinnova, the wood fibre producer from Finland, and Bergans, manufacturer of outdoor equipment from Norway, have introduced the Collection of Tomorrow concept, a fully circular, subscription-based takeback and reuse concept that's revolutionary in the apparel industry as well as their first prototype, a backpack.

In addition, the partners have involved consumers in the R&D as co-owners and test users of the fabric resource. Later in the product lifecycle, Bergans can take the item back, and Spinnova can turn the same fabric into new fibre, of which Bergans makes another product for the subscriber.

The future goal is to circulate the same resource – Spinnova fibre – many times over, avoiding the creation of virgin materials. Spinnova is currently studying how many times the post-consumer fibre can be reused in its process. The prototype backpack also includes other materials, all of natural origin; cellulose-based fibre lyocell, lamb wool and wood. There are no coating chemicals or plastic and metal accessories in the backpack, so the item can be put back into the cycle without dismantling.

[www.spinnova.com](http://www.spinnova.com)



The Collection of Tomorrow by Spinnova x Bergans was awarded the ISPO Sustainability Achievement Award 2020 © 2020 Spinnova / Bergans

## NEW HIGH-PERFORMANCE FIBER

Another well-known player in textile recycling is **Infinite Fiber**. At the top of its website there is a very confident statement: „We have created a miracle: a technology that allows textile waste to be used again and again, preserving 100% quality.“ The core of Infinite Fiber technology consists of three key processes: fiber separation; turning material into liquid and at last turning liquid into fiber. In this way pre- and post-consumer textiles are transformed into a brand new material. This new high-performance fiber is made from post-consumer cotton-based textile waste comes with a natural feel similar to cotton, anti-bacterial properties and a 30-40% higher color uptake.

Infinite Fiber says its truly sustainable clothing fiber solution is ready to be used – in any factory. In August 2019 Singapore-based RGE Pte Ltd (“RGE”) joined a group of investors including H&M Group, Virala and Fortum to help Infinite Fiber scale up its technology. A strategic co-operation agreement was also signed between RGE and IFC to commercialise the startup’s technology. Furthermore, Infinite Fiber leased production facilities in Valkeakoski city, Southern Finland, for a new pre-commercial 500-ton per annum plant and customer training centre that should start up in early 2020.

In December 2019, IF managed to attract a very prominent ambassador. None other than Maria Ohisalo, Interior Minister of Finland, walked the red carpet at Finland’s No 1 annual reception at the Presidential Palace in Helsinki and wore an evening dress made with the future material. She wanted to wear a dress that underlines our future direction for sustainable consumption of textiles and commented her decision: “I am proud to wear a Finnish circular economy innovation. We need solutions to cope with the escalating textile waste problem caused by fast fashion. The problem can be solved by increasing the life cycle of garments, developing repair and rental services and innovations for recycling the textile waste”. [infinitefiber.com](http://infinitefiber.com)



Interior Minister Maria Ohisalo wearing this gorgeous evening dress made from IFC’s material and designed by Anne-Mari Pakkala

© 2020 Infinite Fiber

## RECYCLING



To raise awareness about the importance of transitioning toward a circular fashion industry, H&M's Weekday teamed up with actress Maisie Williams to design a two-piece outfit made entirely from Infinited Fiber fabric © 2020 Infinited Fiber / Photo credit: Reuben Selby

### A SOLUTION FOR BLENDS

For sure the company **Worn Again Technologies** from London, UK, is an absolute pioneer in the field of textile recycling. The company was founded by Cyndi Rhoades in 2005, with a vision for a waste free world where all textiles resources are kept in constant circulation, driving positive economic, social and environmental benefits. Worn Again started in 2012 to develop a chemical recycling process for used textiles and, according to its own statements, has made this development a success. Its pioneering polymer recycling technology can separate, decontaminate and extract polyester polymers, and cellulose from cotton, from non-reusable textiles and PET bottles and packaging and turn them back into new textile raw materials as part of a continual cycle.

As the technology can reprocess pure and blended cotton and polyester textiles (together representing 80% of all clothing and textiles), Worn Again has a very high potential for changing the game. In 2018, the company was awarded a grant to become the first chemical recycling technology to be Cradle to Cradle (C2C) certified as well as being named one of the LAUNCH Circular Innovators for 2018.

In 2019 they were awarded the ANDAM Innovation Prize and 'One to Watch' at Global Good Awards. Also in 2019, Founder Cyndi Rhoades was awarded the PCIAW Outstanding Contribution to the Textile Industry and was a finalist for The Circular Economy Awards, Leadership award. In January 2020 Worn Again announced the launch of its pilot R&D facility as a major step forward in its development process. The facility is located at CPI, a technology and innovation centre in Redcar, England. The pilot plant is designed to validate and develop Worn Again Technologies' proprietary process.

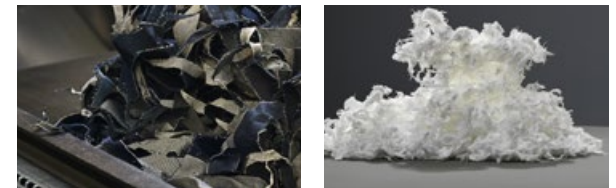
[wornagain.co.uk](http://wornagain.co.uk)

### CIRCULOSE® PULP – A NEW, BIODEGRADABLE RAW MATERIAL

**re:newcell** is technology provider for recycling textiles from Sweden stating they make make fashion sustainable and have closed the loop.

The company was founded in 2012 in Stockholm by Scientists at KTH, the Royal Institute of Technology. The recycling technology dissolves used cotton and other natural fibers into a new, biodegradable raw material, which they call Circulose® pulp.

It can be turned into textile fiber, be fed into the textile production cycle and meet industry specifications. When using this technology the textiles are shredded, de-buttoned, de-zipped, de-colored and turned into a slurry. Contaminants and other non-cellulosic content are separated from the slurry. The slurry is dried to produce a pure, natural Circulose branded pulp, which is packaged into bales and fed into the textile production cycle.



From textile waste to Circulose © 2020 re:newcell

## RECYCLING

Following growing demand for re:newcell pulp from the fashion industry, the first re:newcell plant opened in Kristinehamn, Sweden in 2017. It produces 7,000 tons of biodegradable Circulose pulp per year. In November the company has received funding from LIFE, the EU's funding instrument for environmental and climate action. 18 million SEK will be used to scale up the production with the end goal to launch the first collaboration with global brands during 2020. This worked pretty quickly. In January the company announced H&M will become the first brand to retail a garment made from re:newcell's breakthrough new material, Circulose. Launching worldwide on March 26th, H&M's SS20 Conscious Exclusive will feature a jacquard weave day dress made of 50% Circulose recycled from used cotton jeans, and 50% FSC-certified wood. It will be the first time this kind of material becomes available for customers to buy in retail.

[renewcell.com](https://renewcell.com) [circulo.se](https://circulo.se)

### SAXCELL - CHEMICAL RECYCLED COTTON WASTE

Another innovative cellulose fibre produced from cotton waste is SaXcell made by a company of the same name, a spin-off from Saxion University of Applied Sciences in the Netherlands from the Netherlands. A team of researchers in Enschede started in 2011 with the SaXcell project.



The yellow dress. It has been presented in 2014 and is the first garment made out of blue jeans that had been recycled with re:newcell technology. © re:newcell

SaXcell, an abbreviation of Saxion cellulose, is a regenerated virgin textile fibre made from chemical recycled domestic cotton waste. SaXcell production starts with sorting domestic cotton textile waste into an as pure as possible, well-defined waste stream. Next, the pure waste stream is grinded and non-textile

components like zippers, nails and buttons are removed. The result is a dry mixture of textile fibres with different fibre lengths. All fibre lengths, long and short, are suitable as raw material for SaXcell. The dry mixture exists of different colours and is chemically decoloured and made suitable for the wet spinning process. Wet spinning can be done according Viscose or Lyocell processes. This means that the new fibre can be produced with few adjustments in the settings of machines on existing installations in Europe and Worldwide.

The end product of this step is SaXcell. Goal for the future is sufficiently up scaling of SaXcell fibre production and create valuable end products from woven or knitted fabric from SaXcell fibres. In 2017 SaXcell in cooperation with its partner Wevotex produced a terry towel containing SaXcell fibres. Also in 2017, SaXcell worked in close cooperation with partners from the industry to implement SaXcell fibres in the workwear market. In April 2020 SaXcell announced they will set up a pilot programme in a new production facility to create high-grade textile out of used textile. With a production output of 100 kilos of fibre pulp per day, this marks the first time that this process is utilised on a larger scale. This has been made possible by a consortium of investors who have signed a shareholder agreement on 9 April, thereby allowing the production of SaXcell to begin.

[www.saxcell.nl](https://www.saxcell.nl)

## RECYCLING



A terry towel produced by partner Wevotex containing SaXcell fibres  
© 2020 SaXcell

### SEPARATING COTTON FROM POLYESTER

Last but not least, there is also a textile recycling technology offered by MISTRA, the Swedish Foundation for Strategic Environmental Research. In January 2018, they introduced Blend Re:wind, a process developed in Mistra Future Fashion, and stated, that it is now both economically viable and practicable to recycle textile materials composed of both cotton and polyester.

They have developed a process of separating cotton from polyester. Using simple basic chemicals, it is now possible to remove the cotton component in the form of a high-quality viscose filament. The polyester contained in the material comes out in two separate streams, which can then be easily reconstituted as a new, adequate raw material. After that, the new technology fell silent. However, in December 2019 Åsa Östlund, Programme Director of Mistra Future Fashion, said in a review about Mistra Future Fashion's influence on the industry she thinks a pilot plant is the next step for the Blend Re:wind technology.

[mistrafuturefashion.com/rewind-recycles-cotton-polyester/](https://mistrafuturefashion.com/rewind-recycles-cotton-polyester/)

### OTHER PROCESSES FOR PET RECYCLING

**revolPET**, which was previously called „solvopet“, is a research and development project from Germany that is funded by the Federal Ministry of Education and Research. On its website the organizers state that “revolPET closes the raw material cycle for PET plastics on a new level”. The aim of the seven partners, which include the TU Braunschweig and the Fraunhofer Institute for Chemical Technology ICT, is to recycle plastics, primarily PET, along the lines of nature, without any loss of quality.

revolPET is the recycling technology that enables the recycling of PET waste into high-quality products at original level, regardless of whether the waste is monolayer or multilayer materials. revolPET realizes the complete recycling economy without loss of value and performance. The basic technology for revolPET development is solvolysis.

[revolpet.eu](https://revolpet.eu)



from left: Minister of Science Björn Thümler, Prof. Dr.-Ing. Stephan Scholl (Technical University of Braunschweig), Esther Peschel (Technical University of Braunschweig), Lars Leipert (RITTEC Umwelttechnik GmbH), Carsten Eichert (RITTEC Umwelttechnik GmbH), Minister of Economics Dr. Bernd Althusmann, Dr. Susanne Schmitt (Chairman of the Innovation Network Lower Saxony) © Innovationsnetzwerk Niedersachsen

**loniqa** is a clean-tech spinoff from the Eindhoven University of Technology (NL), specialized in creating value out of PET waste by using its proprietary circular technology.

[loniqa.com](https://loniqa.com)

**DEMETO** is a revolutionary new way to chemically recycle PET in a highly profitable and environmentally sustainable way. DEMETO will enable the chemical de-polymerization of PET at industrial scale thanks to its microwave-based process intensification. DEMETO is a European Project and has received funding from the European Union's Horizon 2020 research and innovation programme.

[www.demeto.eu](http://www.demeto.eu)

Finally, we would like to mention a procedure that is not new but should not be forgotten. **Teijin**, the worldwide chemical supplier from Japan, is one of the very first companies which has developed a PET recycling solution. Teijin started developing the process back in the 1990s and offers the recycled Polyester yarn called ECO CIRCLE(TM) FIBERS since many years. In 2013 TEJIN has made a breakthrough in its material recycling system, which makes it possible to separate and eliminate additives and colorants not only from PET bottles but also from other polyester products, and also purifies the material to an extent whereby the quality is equivalent to that of polyester freshly produced from petroleum. As a result, products that have the same quality, functionality, and feel of those produced from virgin polyester are now manufactured using recycled polyester fibers.

[www.teijin.com](http://www.teijin.com)

## TECHNOLOGY YES - QUANTITIES NO

It should be noted that most of the new technologies are still prototypes. Others are moving from prototypes to laboratory quantities. The quantities that are currently being produced with these technologies are extremely small by industrial standards. Even Eastman, who is already using the technology industrially, does not even begin to produce the quantities that would be required for a comprehensive admixture of recycled textiles with new textiles. The company writes: „Eastman expects up to 50 million pounds of plastic waste to be used for ‚carbon renewal technology‘ by 2020. Projects are underway to significantly increase that amount.“ That would be 25 kilotons a year. For comparison: Reliance Industries, India's largest private company, writes on its website that it is the world's largest manufacturer of polyester fibers and yarns and has a capacity of 2.5 million tons per year. Eastmans thus creates around one percent of the new production of polyester from the largest single producer worldwide. Even if it is relatively little, this quantity already shows that the idea of a circular economy works and can also work on an industrial scale.

## AN IMPLEMENTED CLOSED LOOP

A project with the name wear2wear™ presented by the Swiss textile company Schoeller in January 2020 could be even more mature in the sense of an established closed loop. Schoeller writes: „wear2wear™ is an innovative, industrial partnership dedicated to highquality and sustainable clothing. Expert partners in Europe have come together to cover the entire recycling loop. On cutting-edge production systems, textile fibres from used clothing can be made into functional fabrics. For its part, Schoeller Textil AG is supplying its Inspire textile portfolio developed for the workwear and corporate fashion categories and the PROEARTH™ textiles with biodegradable yarn for the lifestyle, fashion and outdoor categories.



The wear2wear™ textile loop shows solutions and suppliers for all steps  
© 2020 wear2wear / Sympatex Technologies

## RECYCLING

Now with eight core partners who cover the entire manufacturing and recycling cycle, the sustainable wear2wear™ collaboration is focused on high-quality, responsible clothing. It starts with textile fibres from used, recycled garments. These fibres will be transformed back into functional textiles and clothing by the individual partners in Europe.” The recycling process itself is described as a combination of mechanical and chemical recycling.

Responsible for this are the partners TEXAID, collector, sorter and recycler of used textiles from Lucerne in Switzerland and CARL WEISKE, a medium-sized, owner-managed company and a reliable partner in the field of development & manufacture of fibers, yarns and textile systems from Hof in Germany.

[www.wear2wear.org/en/](http://www.wear2wear.org/en/)

## REVOLUTIONARY BREAKTHROUGH IN THE FIELD OF BIOLOGY?

But maybe everything will turn out quite differently and one or the other recycling project has long been obsolete. There is a third technological approach that recently came back after it almost seemed forgotten and it was celebrated as a sensation by many newspapers. We're talking about biological recycling of PET.



Design of the new demonstration plant © 2020 Carbios

On April 8th 2020, **Carbios**, a French company pioneering new bio-industrial solutions to reinvent the lifecycle of plastic and textile polymers, announced the publication of an article in the prestigious scientific journal Nature, entitled “An engineered PET-depolymerase to break down and recycle plastic bottles”.

The article is co-authored by scientists at Carbios and at the Company's renowned academic partner, the Toulouse Biotechnology Institute[1] (TBI).

The article describes the development of a novel enzyme, which can biologically depolymerize all polyethylene terephthalate (PET) plastic waste, followed by an extremely efficient recycling into new bottles. PET is the most common thermoplastic polymer and is used to manufacture bottles, polyester clothing fibers, food containers, and various thermoformed packaging and components.

Carbios' recycling process, the first of its kind, initiates a real transition to a circular economy and can better prevent plastic pollution from harming our oceans and planet. This innovative technology also paves the way for recycling PET fibers.

“Carbios is the first company to successfully combine the two scientific worlds of enzymology and plastics”, as Dr. Philippe Pouletty, CEO of Truffle Capital and Co-founder of Carbios, comments.

“By leveraging many years of experience with a world-renowned team, Carbios and TBI are proud to have been able to increase the degradation yield of PET waste to 90% in 10 hours, a significant upswing from the initial degradation yield of 1% after several weeks”, the press release says.

That could be the fuel needed for the EU's ambitious timetables. And Carbios is pushing the pace. On April 15th, Carbios and TechnipFMC announced they are going to build a demonstration plant for depolymerization of waste pet plastics to monomers to demonstrates Carbios' Enzymatic Recycling Process. According to a report by the BILD newspaper, Carbios Vice Chairman Martin Stephan said: „Our goal is to be ready for use on a large industrial scale by 2024/2025.”

[carbios.fr](http://carbios.fr)

All in all, that sounds like a promising technology because it is fast, environmentally friendly and, under certain circumstances, also inexpensive, and it is very likely that it will also be scalable quickly. Perhaps such a technology would also be a building block of a solution for problematic blended fabrics? In a first phase, the enzymes catalyze the PET, in phase two the cotton is converted into a new cellulose fiber and there are other processes and phases for other components. However, such an implementation will probably be the third rather than the second step in the overall development of textile recycling.

So much for the state of research. Overall, you have to see that the examples are usually selected light-house projects that are still far from representing relevance in the textile market. It should also be added here that our excerpt does not claim to be complete. There may be other procedures that have been started earlier or are already going on. However, we think that we were able to offer a meaningful cross-section.

## CONCLUSION

If you look at the individual recycling processes, you can conclude we have made a technological leap towards a circular economy over the past five years. There are many different approaches to recycling the different textile raw materials. There are now even solutions that have been considered problematic for a long time. The competition between the individual processes is likely to have begun and will drive technological advancement. So will the collaboration.

Another problem that was described as a major problem for many years is the collection and sorting of old clothing. Sorting has recently taken a clear step with the introduction of FIBERSORT technology. And collecting? Is it really this difficult challenge? In some European countries, there are procedures and systems for collecting that could be scaled up. Large retailers such as H&M and Inditex already offer the return of used clothing. The whole thing looks doable.

Despite these supposed successes, the future of recycling within the textile industry is probably still open. Much will depend on how the EU's action plan for textiles will ultimately be structured. This in turn will also assess the economic aspects of textile recycling more precisely.

We could not shed light on how profitably the individual processes can be used, also because pricing on an industrial scale will depend on a large number of factors. Even considerable funding opportunities would be conceivable here. Brands and retailers, which traditionally make decisions in the textile industry, have existing business models. Textile recycling that has a negative impact on their EBIT will certainly not be widely accepted.

The price sensitivity of the consumer is often seen as an axiom, so that higher costs are rejected, even if they affect all competitors equally. On the other hand, the EU will also have to make tough cuts if it really wants to achieve its goals. Here many, perhaps opposing, perhaps common interests meet, and we will see which ones prevail.

In the long term, the entire industry will certainly prefer recycling solutions because it will secure their own future. Combined with renewable energy, processes are created here that set our course as a sustainable society. Then companies and people will earn their money by constantly converting materials with almost unlimited energy into something new. That sounds almost too good to come true.



# 20 BRILLIANT INVENTIONS PRESENTED AT ITMA

*If there are innovations and leaps in development in textile machines, you will definitely find them at ITMA. We have collected 20 of the best inventions presented at ITMA 2019. They all have in common that they not only aim to improve quality and productivity, but also do something for the environment and are therefore more sustainable than comparable older machines or processes. Interestingly, this works in all textile segments.*

# 1

#Spinning

## MAKE BEST USE OF COTTON

Sustainable production begins with the optimal use of the existing raw materials. Trützschler succeeds impressively with its Gap Optimizer T-GO. For cotton carding, the carding gap between the cylinder and flat clothing should be as small as possible. The optimum gap is 3/1000" (0.075mm) for many types of cotton. On the Truetzschler Card TC 19i, T-GO ensures an ideal carding gap at all times, whether the card is cold or warm, after clothing grinding, even after clothing replacement. This is a permanent, self-optimizing, intelligent process that takes place without any production interruption. It responds automatically to changing parameters such as material properties, production level, cylinder speed or environmental influences such as room temperature.

[www.truetzschler.com](http://www.truetzschler.com)



# 2

#Spinning

## LESS ENERGY, MORE PRODUCTIVITY FOR THE SPINNING MILL

With the launch of their new Autoairo air spinning machine, Saurer has not only set the bar very high in terms of productivity, but also for the efficient use of energy. The Autoairo has autonomous spinning positions with individual drives, integrated intelligence and a digital piecing unit. Twenty-four piecing operations can be carried out simultaneously with SynchroPiecing 24. Compared to other machines on the market, the piecing capacity of the Autoairo is roughly twice as high. One result: the Autoairo offers minimum power consumption and maximum energy cost transparency due to energy monitoring.

[www.saurer.com](http://www.saurer.com)



# 3

#Spinning

## EXPERIENCE LEADS TO GREEN INNOVATION

Polyester recycled from post-production and postconsumer waste is becoming more and more important. Oerlikon showed that they would be prepared for the beginning of the circular economy. With the new VacuFil® recycling series, Oerlikon Barmag in cooperation with its subsidiary company BBEngineering is offering a solution catering to a “clean technology” production philosophy. Decades of experience in the areas of extrusion, filtration and spinning systems have been bundled into a new, innovative core component – the vacuum filter. It unites gentle largescale filtration and controlled intrinsic-viscosity build-up for consistently outstanding melt quality. The vacuum unit – located adjacent to the filter – swiftly and reliably removes volatile contamination (spinning oil, etc.). The excellent degasification performance additionally relieves the energy-intensive predrying process.

[www.oerlikon.com/manmade-fibers/en/](http://www.oerlikon.com/manmade-fibers/en/)



# 5

#Winding

## QUALITY FROM THE BEGINNING SAVES A LOT

Rewinding due to poor quality costs time, machine capacity, energy, nerves and money. SSM showed how you can prevent this and practically guarantee the highest quality. The company introduced a worldwide unique backpressure system: preciforce™, for a guaranteed package consistency. The precise density control ensures that an optimal package can be produced, which leads to improved properties in the subsequent process.

[www.ssm.ch](http://www.ssm.ch)



# 4

#Winding

## USE ENERGY ONLY WHEN NECESSARY

SAVIO's new EcoPulsarS plus winding machine offers eco-sustainable advantages. The increase in process productivity and the improved yarn quality of EcoPulsarS have been combined with eco-sustainable energy saving solutions. EcoPulsarS can save up to 30% of energy, being equipped of an individual and independent suction system for each single spindle, that allows to use energy only when it is necessary, that is during the splicing or bobbin change cycles.

[www.saviotechnologies.com/en](http://www.saviotechnologies.com/en)



6

#Weaving

## **OWN CLIMATE ZONE CREATES OPTIMAL CONDITIONS**

DORNIER presented an encapsulated air-jet weaving machine A1. The idea is brilliant here, above all. The encapsulation significantly reduce the noise of the machine and, according to DORNIER, also the dust and vibrations. Moreover, the temperature and humidity can be adjusted individually what means that each weaving machine can be run in its own climate, adjusted to create the ideal conditions for the respective manufacturing process. This approach too makes for the greatest possible flexibility in accepting and completing orders, since it is then possible to process different fibers ranging from wool to glass simultaneously in the same workshop.

[www.lindauerdornier.com](http://www.lindauerdornier.com)



7

#Weaving

## **A MILESTONE FOR TOMORROW'S CLOTHING**

Stäubli together with partner DORNIER featured a Jacquard weaving machine which was used to produce a pair of outdoor trousers from a single piece. In doing so, Stäubli also demonstrated what the weaving mill of the future could look like when the demands of consumers will shift to individual textiles with lot size one. The objective is to be able to offer a product which is "tailored" precisely to the customer in terms of design, pattern and wearability, which is manufactured at the cost of less material, energy and waste.

[www.staubli.com/en/textile](http://www.staubli.com/en/textile)



8

#Weaving

## **SAVE WATER WHERE YOU DON'T EXPECT IT**

Itma's iSaver system was presented before ITMA, but it's too much progress in weaving machines not to be included here. This new technology is able to completely eliminate the left-hand weft waste, allowing to insert the weft yarns in the fabric without the need of additional yarns. Thanks to iSAVER, 1.000 Kg of cotton per machine per year – the 3% of the total raw materials - will be saved, thus avoiding the waste of 20 million liters of water.

[www.itemagroup.com](http://www.itemagroup.com)



9

**#Weaving****EFFICIENCY INSTEAD OF WASTE**

VANDEWIELE showed impressively that improving sustainability also has a lot to do with quality control in the process in order to exclude rejected items and waste as far as possible. The core component of the new RCE2+ Rug and Carpet Expert weaving machine is VAN DE WIELE's latest Fast Creel, which offers individual tension control by torque motors on each pile yarn. The pile yarns are now fed directly into the machine without having to pass pile-stop motions, to both increase efficiency and eliminate any waste yarns, while achieving previously unreachable industrial speeds.

[www.vandewiele.com](http://www.vandewiele.com)

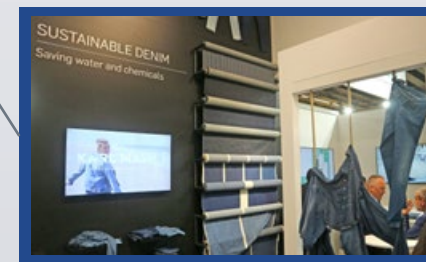


11

**#Dyeing****BLUE GOODS CAN ALSO BE DYED GREEN**

KarlMayer's new GREENDYE technology uses the advantages of indigo dyeing in a nitrogen atmosphere to achieve greater efficiency and sustainability in denim production. With its high concentration in the dye bath and under nitrogen atmosphere, the dye diffuses and migrates more intensely into the fibre and the yarn can absorb three times more dye in a dye vat. The number and length of vats can be reduced as well as the chemical consumption. Here, a minus of 50% is possible when using hydrosulphite and caustic soda, and there is also less yarn waste. Moreover, due to the good fixation of the dyestuff on the fibre, considerably less water is required during the washing process.

[www.karlmayer.com](http://www.karlmayer.com)



10

**#Knitting****THE EFFECT IS IN THE DETAIL**

Thanks to its innovative strength, Groz-Beckert repeatedly demonstrates the big differences in the effects of individual components of the machine, such as small needles. This can be saving energy or treating the textile gently to increase its entire life span. This time Groz-Beckert's presented SAN™ SF, new special application needle for use with large diameter circular knitting machines. The needle geometry is designed with a closed needle shank on the bottom and a supporting hump for the cylinder walls. It is a combination that effectively prevents fiber residues and yarn abrasion from collecting.

[www.groz-beckert.com](http://www.groz-beckert.com)



# 12

#Drying

## HIGH PERFORMANCE IN THE SMALLEST AREA

Sustainability also means saving space or making the best use of it. Brückner showed how a machine concept can support this. Due to the six fabric passages arranged one above the other the new BRÜCKNER POWER-FRAME VNE multi-layer stenter offers the highest possible power density per required floor space which means a long path with air circulation on the narrowest possible space.

[www.brueckner-textile.com](http://www.brueckner-textile.com)



# 14

#Drying

## LOOKING INTO NATURE AVOIDS UNNECESSARY HEAT LOSS

A big challenge on a finishing line is exposure of the fabrics to ambient air at the stenter's entrance and exit, which can also lead to a loss of energy. Monforts found a solution from nature for this problem and presented its new and patented Bionic Fin® slot sealing which absolutely minimizes air leakage at the fabric inlet and outlet of the stenter chamber. The form of the advanced slot sealings based on a patented new flexible material in a configuration that draws on bionics – specifically the way the fins of fish will automatically steer a passage through water with endless, barely discernible movements. This material serves to hermetically seal the stenter frame at the infeed and outfeed while constantly adjusting to the profile of the different fabrics being cured and ensuring an absolute minimum of cold air is drawn in and only marginal warmth can escape.

[www.monforts.de/en/](http://www.monforts.de/en/)



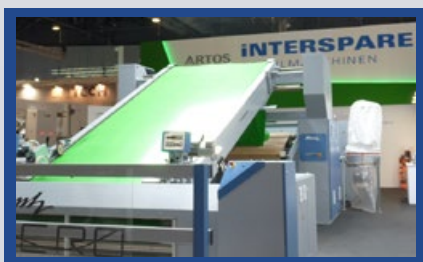
# 13

#Drying

## AUTOMATIC CLEANING HELPS TO SAVE ENERGY

iINTERSPARE presented an innovation for its well-known Krantz Syncro dryer. Instead of screen inserts, the lint produced is automatically cleaned by the new automated filter belt. Besides an increase in reliability by eliminating human error, the permanent cleanliness of the system also has a positive influence on the air circulation of the machine. This not only increases the efficiency of the machine, but also saves energy. An invention which makes the Syncro even more sustainable.

[www.interspare.com](http://www.interspare.com)



# 15

#Dyeing

## **CONTROLLED CHEMISTRY IS CLEAN CHEMISTRY**

For reducing error rates and increasing reproducibility, the automation of the chemical and auxiliaries supply is mandatory. The Thies MPS product family offers a complete solution for fully automated supply of a finishing plant with chemicals, dyes and auxiliaries. A supervisory (centrally hosted) production planning system controls the process organisation of the dye house.

[www.thiestextilmaschinen.com](http://www.thiestextilmaschinen.com)



# 16

#Dyeing

## **THE SUPER-SAVING MACHINE**

Dyeing machines have seen astonishing developments in recent years for a big plus in sustainability. Modern machines require much less water and energy than the standard machines of the past. The Pulsar from Loris Bellini is such a super-saving machine, as the company once again emphasized. Pulsar saves up to 70 per cent of electricity and 30-35 per cent savings in water compared to Loris Bellini ordinary technology, which is already much appreciated by the market for its very low consumption figures.

[www.lorisbellini.com/en/](http://www.lorisbellini.com/en/)

# 17

#Washing

## **BETTER RESULTS - LESS WATER AND ENERGY**

Benninger has developed a contamination sensor for the washing compartments where the degree of contamination regulates the necessary amount of fresh water in order to guarantee the lowest possible water and energy consumption and also to ensure a high reproducibility of the washing result.

[www.benningergroup.com](http://www.benningergroup.com)



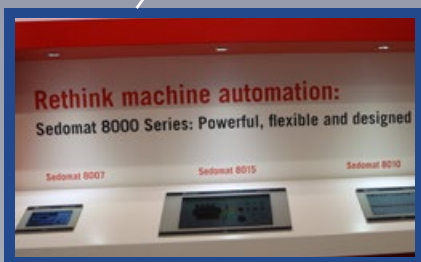
# 18

#Control

## SMALL THINGS OFTEN DRIVE BIG THINGS

The brand new Sedomat 8000 controller range is specially designed to meet the latest requirements of Industry 4.0 and more. It is developed to match future standards through its high flexibility. The controllers contain all the benefits of the well proven Sedomat controllers combined with internal WiFi, RFID, flexible field bus and a high number of modular internal and external in- and outputs. Energy counters can be directly connected via the high number of standardized connections.

[www.sedo-treepoint.com](http://www.sedo-treepoint.com)



# 19

#Nonwovens

## UNIVERSE OF NEW APPLICATIONS

Anyone who believes that revolutionary inventions in the nonwovens sector are a thing of the past has made this calculation without Dilo. The 3D-Lofter captures the third dimension in needled nonwovens. A series of single web forming units which work according to the aerodynamic web forming principle deliver defined fibre masses in varied patterns on a base needlefelt. A stress-oriented production of technical formed parts result in fibre savings. However, what makes the new technology so outstanding is the universe of new applications that it opens up.

[www.dilo.de/en/](http://www.dilo.de/en/)



# 20

#Nonwovens

## MORE QUALITY WITH LESS ENERGY

Autefa's Square Drum Dryer SQ-V stands for an advanced and unique technology. This new technology offers a significant reduction of energy consumption compared to any state-of-the-art line. It combines the advantage of a horizontal belt dryer and the better drying efficiency with the space advantage of a drum dryer, resulting in increased drying length with small footprint.

[www.autefa.com](http://www.autefa.com)



**Y**ou are Director General of the International Textile Manufacturers Federation, the largest and most important textile association worldwide. Your membership includes national textile associations, textile machinery associations, fibre associations, trade fair organisers and numerous textile, fibre and textile machinery businesses from all over the world. How would you describe the ITMF's role in the crisis, what kind of tasks are you working on, and what assistance can you offer your members?

The ITMF's mission is to keep our members informed and networked and also to represent them. Naturally, we are continuing to do this during the crisis, although everything has become more virtual and more digital now. We inform our members via our publications and newsletters, which provide unique, original data as opposed to data reproduced from other sources.

In the current crisis, our representative function has of course intensified. As far as the impact of the corona crisis is concerned, we launched a survey at the beginning of March to find out what the situation is like for our members. We are making the results available not only to our members, but also to the general public and policy-makers – everyone concerned, so to speak. These results are very important for our members, as they demonstrate that this is a global problem, albeit a nuanced one with precursors and after-effects. It goes without saying that, as an international federation, we aren't as closely in touch with what's happening



## DR. CHRISTIAN SCHINDLER

**DIRECTOR GENERAL**  
INTERNATIONAL  
TEXTILE  
MANUFACTURERS  
FEDERATION  
(ITMF)

INTERVIEW BY  
OLIVER SCHMIDT

**"THE TEXTILE INDUSTRY WILL CONTINUE  
TO OPERATE IN ASIA, AND NOT WITHOUT  
GOOD REASON"**

as the national associations. Moreover, the conditions and problems are totally different in many countries. You can't compare Germany with Bangladesh, or South Korea with Brazil.

However, it's very important for the associations and the firms to see how the problems are being tackled elsewhere and learn from each other. This is not always possible. Sticking with the example I mentioned before, Bangladesh can't introduce short-time work overnight so to speak, in the same way that this instrument is being used in Germany. But we can make our members aware of the wide range of instruments available. Take two examples: recently, we reported on how a group of Asian associations have compiled a nine-point list on the subject of responsible purchasing practices. And we were also able to report on an announcement from an association showing precisely how its government is supporting our industry. Information of this kind shows what's happening in various places and encourages our members to consider whether they could do the same or something similar. The results are not transferable one to one, but I think our publications offer a general, comprehensive overview of the situation that helps provide a clearer understanding of the situation as well as important stimuli.

You mention the three-phase survey among your members regarding the current situation and future prospects. At the end of April, you published the results of the first, second and third phases. What were the findings?

The first survey started on 13 March, two to three days before the restrictions were introduced in Europe and the USA and the first businesses were forced to close. Up until that point, it was still widely considered an Asian problem, but people then realised the major consumer markets were also affected. This explains why, prior to 16/17 March, there were more positive responses. They came from countries not yet affected by the crisis, be it Asia or Turkey, for example. In some instances, they came from retailers who had diverted their orders away from China to other Asian countries for the simple reason that in China the value chains had been disrupted by the public holiday and the virus.

When it later became clear that the sales markets were also affected, the survey results worsened too. This was particularly evident in the case of the second survey at the end of March/beginning of April, when the figures deteriorated significantly. At the time of the initial poll, expected orders were down by 10% on average, compared with minus 33% at the second poll. The third survey, which was completed at the end of April, shows that orders have slumped even further. On average, there was a 41% fall in orders worldwide. The expected turnover figures for the whole of 2020 also declined. Initially, the expected fall in turnover was around 10%; in the second survey 30%, and in the third 33%.

It's important to remember, however, that these are average values. There were the familiar downward outliers and, surprisingly,

even upward ones. The latter were attributable to firms that were able to switch to medical products. Admittedly, these are rare exceptions. Incidentally, we may extend the survey to four or even five phases depending on the level of willingness to participate. So far we've been very pleasantly surprised by the response rate.

Turnover losses to the tune of 20, 30 or even 40% sound like a disaster for the international textile industry, and indeed a major challenge for many countries where GDP is heavily dependent on the textile industry. Did the industry grossly underestimate the impact in the early days, and is it now being too pessimistic? Or is there a real danger of many companies folding up and countries falling into a deep recession?

Naturally, the expected turnover figures for the whole year are always somewhat imprecise, as they have to be extrapolated. I nevertheless consider the figures to be very realistic, despite an element of uncertainty due to the fact that it's impossible to predict how the crisis or the order situation will develop. Businesses are now reopening in many countries, which makes the third phase of the survey very interesting. I would say that the firms were surprised by the scale of the crisis, just as we all were. Due to the lockdown in Europe and the USA, the crisis is eroding the entire value chain. This has led to retailers and brands postponing or cancelling their orders. Due to this drop in orders, firms are able to extrapolate what the impact will be if there are no incoming orders for a matter of weeks or even months.

They also take into account the probable changes in consumer behaviour, based on the assumption that people will buy less or switch to other products such as consumer electronics. If the problem is compounded by job insecurity, people may lower their consumption to some extent, preferring to save their money. Textile manufacturers are well aware of all these factors and are being dictated to by their customers in no uncertain terms. That's where the real problem lies: due to the blanket cancellations, the value chain is rapidly reaching its limits, right down to the spinners, the cotton traders and the technical suppliers – the textile machinery manufacturers. Consequently, everyone is affected, albeit not in equal measure. It is highly likely that the textile companies will lose out on an entire sales cycle, whereas in the case of other companies, it may just be a matter of orders being postponed.

Are there any ways of assisting and bolstering the textile industry? Are government contracts conceivable, are funding programmes necessary, or could tax breaks help? What possibilities do you see for the industry?

That's another issue we included in our survey: who can apply for aid and whether he or she has already received or is currently receiving any aid, without going into the details. In essence, it's a question of liquidity, and everything can help – the abolition of import duties, for example. Tax deferrals can also help where applicable. In most European countries, companies are able to fall

back on the instrument of short-time work, which provides rapid assistance for both firms and employees. It also allows companies to ramp up production quickly when demand increases again. If you've run out of cash, it's a question of getting loans – if possible, on terms and conditions that enable you to pay them back in the medium term, without the repayments becoming a burden and simply delaying insolvency.

As a general rule, anyone who no longer has any revenue coming in and possesses neither capital reserves nor credit lines has to be helped. We at the ITMF are drawing this issue to the attention of governments and international institutions. Together with various associations, we will soon be publishing an open letter, in which we highlight the need for aid of this kind and explain how important it is for governments to now offer targeted local support to companies in our industry with the help of international institutions such as the World Bank and the IMF.

For countries like Bangladesh, for example, where the textile industry accounts for 80% of the country's US\$ revenue, it is of course extremely important that the industry survives the crisis. This is true not only for the firms, but above all for the workers in the industry. The social welfare safety net varies considerably around the globe.

The textile industry was already facing major challenges even before the crisis. Will the crisis lead to the global textile industry completely restructuring itself, and could it even be seen as an opportunity to do so?

What might that entail and what changes are urgently needed?

Every crisis also presents an opportunity. That sounds terribly banal, but there's no getting away from the fact that the crisis is unveiling weaknesses. This applies to all industries in equal measure. Firms will now start working on these weaknesses. They will be reviewing their dependencies and the value chains, for example. I don't agree with what's being widely discussed at the moment: that the value chains will now be relocated.

We can tell from our annual statistics – the "International Textile Machinery Shipment Statistics" – where new textile machines are being delivered to. Since 2004, approximately 50% of new machines have been going to China, and around 90% to Asia. This suggests that the textile industry will continue to operate in Asia, and not without good reason – first and foremost cheap labour coupled with high productivity. And China, with its numerous state-of-the-art highly automated machines, remains very competitive. No doubt some firms will seek to establish a broader foothold, but that's something we've been observing for a number of years now. Numerous Chinese firms have expanded abroad in order to meet these demands.

Yes, many people are calling for national and regional production. They want important textile products to be termed system-relevant and policy-makers to create incentives for shifting production back to their home

country. Do you consider that advisable and feasible?

That will no doubt happen in the case of some textile products, primarily in the medical sector. However, these niche products account for only a fraction of the market for the global textile industry as a whole. And the demands still have to be implemented; admittedly, a number of models are now under discussion, such as government involvement in the infrastructure. But these things are expensive, and we'll have to wait and see how inclined governments are to go ahead with them once the crisis is over. One thing for sure is that there will be a certain amount of stockpiling in future, but that's a different matter. I don't think large-scale production capacities are now going to be established in Europe or the USA.

The crisis has made us all more digital; we have had to shift communication and processes to the Internet. To what extent and how fast do you think the crisis will influence the mega trend towards digitalisation?

At our conference last year in Porto, increasing digitalisation was already a major talking point. The idea isn't new, and it was clear even before the crisis that it would remain on the agenda. Digitalisation is now likely to gather tremendous pace due to the crisis. Virtually all firms have been forced to consider how they can maintain communication without personal meetings, and have come to realise that it's possible. Firms have undoubtedly also been spurred on to start or continue digitalising their processes. Any

process changes that were already in the pipeline, such as the digital coordination of collections, are now sure to be accelerated. And there have also been changes on the sales side. Online business could experience a boom. However, as far as communication is concerned, I think personal meetings will soon regain their importance when the crisis is over.

Your own annual conference 2020 is scheduled for October in Seoul, Korea. How confident are you that it will take place?

Not at all confident. We're making plans on the assumption that it will take place and waiting to see how things develop. Fortunately, we've got until the end of July to reach our decision or wait and see what happens. All in all, there's considerable uncertainty and we're looking into a lot of other possibilities, including virtual concepts.

What are you looking forward to when the crisis is finally over?

To two things in particular: firstly, to my sporting activities – football and tennis – and of course to travelling, both for personal reasons with my family and for business. I value personal meetings and miss them a great deal.

# MAURO SCALIA

DIRECTOR SUSTAINABLE BUSINESSES  
EUROPEAN APPAREL AND TEXTILE ASSOCIATION (EURATEX)

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**"TEXTILE IS ONE OF THE KEY ECO SYSTEMS  
ON WHICH THE COMMISSION IS WORKING  
TO SUPPORT"** INTERVIEW BY OLIVER SCHMIDT

COVID-19 and the crisis have surprised and hit us all hard. This initially affected health, family and private life, but in a second step also professional life, business and economy. The situation for the European textile and clothing industry was dramatic in April. Your President, Alberto Paccanelli held a constructive dialogue with Commissioner Breton to develop quick and effective solutions. Are you satisfied with the short-term support from the EU or do you still need to adjust? And what is the situation for the companies now, since the lockdown has ended in many countries and sales and production have started again?

Of course, the crises hit all economic globally. We have made estimates with our members in April indicating a sale drop of 50% and we may actually update this in near term. The results show the crises hit us deeply. We have observed a quick response from the Commission. Really captured specific mean. It's a matter of fact we appreciate in particular how the Commissioner Breton looked very early in the crisis at some issues with regard to quick production of face protective masks and other key needs. We have an excellent working relationship with them. We looked at value chains, at the testing requirements and what can be done to increase the production capacity of masks in Europe. We had support from the Commission in that activities.

But beyond things like the mask production the Commission asked us 'what are the faults to restart industry' because there are many critical factors.

Reflecting to many points we have helped the authorities to understand the importance of critical value chain which is the textile one with regard to the European production in textile. It's a matter of fact the commission has told us they identified textile is one of the key eco systems on which the commission is working to support. This is a great news.

What they now wish to have is a strong industry that is able to guarantee production of textile materials which means you also need for example chemicals for textiles. Let not forget to think about textile supplies for any other supply chain from the automotive to the aerospace. Furthermore, textile materials are also key to distribute food. It is common sense of everybody how critical that is. For all these industries you need a healthy eco system. You cannot be affected by trade barriers or huge delivery times when it comes to emergencies.

We are glad the commission realized that textile is one of those manufacturing industries which is needed in Europe to provide Europe with what is need when is need. We are now discussing with them what kind of short term measures the policy makers, both the European and national, can support to help not only the restart of the textile industry but to have a stronger, a better industry.

On March 11th 2020, the European Commission adopted a new Circular Economy Action Plan - one of the main building blocks of the European Green Deal, Europe's new agenda for sustainable growth.

You already have presented your target paper, the „A MANIFESTO TO DELIVER A CIRCULAR ECONOMY IN TEXTILES“ last May 2019 and have been actively promoting the circular economy since then - at least that's our impression. What makes the topic so interesting for the European textile and clothing industry?

We even published our first policy brief about circular economy in June 2017. The first idea our industry put forward and the actual position about circular economy we did in 2017. Then, we said we need circular economy, we are actually already doing circular economy in many business cases. What happened in May at Techtextil and parallel at Copenhagen Fashion Summit was a call for cooperation and new partnerships from EURATEX together with leading apparel organisations to rethink tools to establish a circular fashion system. However, from our standpoint our main contribution was delivered in December of last year when we unveiled our strategy for circular economy what is fully available on our website.

Coming to your question about importance. Let me give you a quote on that. One of the points we made in our strategy is that textile is a sector that uses a lot of resources. Some people think reduced consumption is a solution.

What we say is with increasing population in the planet with approximately 1 billion people every 12 years even if we manage to reduce the consumption, we definitely not solve the problem. For us in EURATEX,

circular economy is indeed a new way to design, make, use and dispose new textile products. Such a product is designed to last longer, designed to be recycled, designed with recycled materials or to be biodegradable. You have at least these four main options. We have a strategy; the commission has a plan and now is the time to sit together with the Commission and with other stakeholders including other value chains from the chemical industry to the fashion brands to implement a lot of standpoints and to bring this specific purpose forward.

Although it is called „Action Plan“, it is more of a corner paper with certain ideas and vague objectives. However, it is embedded in a tight schedule. A real plan has yet to be worked out and you, the European Apparel and Textile Association, which represents the interests of the European textile and clothing industry at the level of the EU institutions, would of course like to help shape the development of this plan. What are your ideas and goals as EURATEX for this plan?

We spent one year and a half consulting with the European members of Euratex, national and sector associations and the companies, asking them: What do you need to make circularity more important for your business? We used all this information we have collected from more than 100 companies to make our strategy. We see 12 key barriers or key points. For companies which already do circularity or are not yet doing circularity but want to do it these are the typical issues to be sorted out.

It is a combination of different elements. One is of course cost which means circularity is more expensive, one is technical limitation, because you require new technologies and another one, very much neglected but very important is legislation what must support circularity.

We spoke about importance of the "Green Public Procurement" for the government where they put their money and where their incentives are and all of that positive points, but we even went further and made 38 concrete proposals. We presented that to the European Commission which was extremely well received. Moreover, we asked the Commission not to do academic papers. We also did welcome other proposals from key stakeholders and we understand the Commission has welcome all of that. Three month later they published the action plan. In that plan we saw many, many of that points we already promoted with our strategy earlier. So, we welcomed the Circular Economy Action Plan because it really locates some important points for the promotion of sustainable products. The textile sector is recognized as key one along with other 7 resources-intensive sectors in the Circular Economy Action Plan. There are several good ideas.

Now the challenge is to bring those good ideas into policy with concrete measures which can really make the difference. And these we are working out now. The commission is talking to us, is talking to other key players and we talk to our members and the companies.

I expect to talk to the Commission every week from now until the end of the year to build this EU textile strategy in early 2021 before summer 2021.

Today there is a lot of talk about recycling but there is still no real offer of such textiles. There are a few prototypes or at most a small line. Doesn't it need a tough regulation for a minimum share of – let us say 20% - recycled material from used textiles from Europe for all textiles sold in Europe in order to really change something in Europe and for the European textile industry? Would such a requirement be feasible?

In 14 months of conversation we never really received this request as you just put it. What came up is that for sure circular economy is an opportunity to the European textile and apparel industry to give value to production because of many different reasons. One is because the European industry is a front runner in circular textiles. We already have many companies in Europe in all segments, among the fiber makers, among the spinners, among the weavers, among the finished product makers working a lot for circularity. If you go to our website, you find a straight link to some 40 samples already put in.

Second thing is because circular economy deals a lot with recycling of materials. It is just common sense if you have 28 billion of garments circulating in Europe every year, what is the statistic tells us, it makes a lot of sense that you have shorter value chains when you recycle this material in Europe.

Therefore you have new materials in Europe. For the textile value chain or for other value chains.

So, I would say we are better placed to become leader worldwide of circular economy. Legislation would definitely need to support that. To be honest I don't think at this stage we need mandatory requirements to buy this from Europe. If we have the right conditions in place, then naturally the market will become a winning place for the European industry.

Maybe one day there will be a legislation which will say you must produce with recycled materials. Maybe it will come. This is not our request for the time being.

What we do see is that the price of recycled Polyester used to be more expensive than the virgin one. Then it dropped down before it actually grew up again because we realized that the global demand for recycled Polyester is booming. The biggest recycling company in the world are in the soft drinks sectors, because they use in their packaging recycled Polyester.

With the ideas we have we want to increase the benefit of these materials. The point is if you put today the legislation mandatory for, for instance, recycled Polyester but you don't have enough capacity to deliver recycled Polyester or the infrastructure to process it than you create just another pressure but not a goal which can be achieved.

We are now working on the other side.

We are working to make recycled materials more affordable and more available and to solve the problems when it comes to life cycle assessment, standard and legislation. Not to mention the whole collection and sorting of materials, recycling processes and redistribution we have to upgrade for new challenges. These are issues we are already working on. These will enable the ability to create new materials. On top of that you need regulations be able to pay a higher price for recycled materials and here we have two points. One option is to stimulate the Public demand. This is called the "Green Public Procurement". Here, procurers all over Europe for example the hospitals, the army, the schools and so on, are empowered to buy textile products and services not just based on lowest prices but choosing from a sustainable produced material and industry.

These are the things we set in our strategy. It is not a mandatory regulation, but it is a more effective way to make changes before any possible mandatory regulations on materials.

Another option is to stimulate the private demand. Buyers as brand, retailers and consumers do play a role here. The "Product Environment Footprint" (PEF) system can be instrumental to allow consumers to compare products without being "greenwashed" by arbitrary claims. The PEF is an official life cycle assessment to compare the sustainability based on 16 scientific and technical indicators which already exists. The Commission experts from the JRC,

(Joint Research Centre), made it ten years ago. The PEF is not yet used in the market but now we have 20 key organizations from industry to NGOs and including the European commission working to make the new rules to compare the sustainability of products. This should be operational by 2022 and if this will be operational and you are going to buy products you will be able to compare the sustainability of products. If any product will be recycled or be recyclable the consumer will see a higher score. And therefore, the consumer will be incentivized and facilitated in choosing more sustainable materials including circular textiles. Euratex is a partner in this coalition of organizations working for the "Product Environment Footprint" rules for apparel and footwear.

These are the measures which can drive the demand in a way which supports circular products in textile even if they are more expensive. This we believe can change the market in a few years.

This year there are numerous initiatives demanding that the restart after the crisis should be used to build a circular economy. These include, for example, the Club of Rome or the Ellen McArthur Foundation. Supporters include CEOs from the fashion industry such as Helena Helmersson from H&M Group or Pablo Isla from Inditex. Euratex does not say so but has called for a clear strategic plan for a fresh start. What are your ideas and demands? What does it take for the European textile and clothing industry to get out of the crisis well?

We actually unveiled at our General Assembly in late June a number of proposals and five flagship initiatives to restart a textile industry which is greener, more digital and more resilient.

One thing I want to bring to your attention is something called 'Recycling Hubs'. This is an initiative Euratex is working on with its members, with companies and also with other industry value chains. We believe it is an opportunity to at the same time help a green recovery, help a strong European textile industry and even help the European member states that have a legislation which is faced by the next three and a half years textile would be collected, separated from any other waste. That should be implemented by the end of 2024. 450 million European Union citizens have about three and a half years to see what the member states, the national governments in Europe will do about textile waste. And only a few member states like The Netherlands, Finland, Sweden and France appears to be engaged in this. So, what Euratex suggests is to pull resources and competences creating 5 Recycling Hubs as pilot places to treat this material and turn a waste problem into a resource. This is one of the so called flagship ideas that we propose also to the European Commission as worth configuration again to specifically recovery, the green recovery, support the key value chain which is a textile value chain, create partnership among different value chains like automotive, construction, medical, and actually make circular economy a reality.

# ANDRÉ WISSENBERG

HEAD OF MARKETING, CORPORATE COMMUNICATIONS AND PUBLIC AFFAIRS FOR THE OERLIKON  
MANMADE FIBERS SEGMENT AND CHAIRMAN OF THE VDMA MARKETING AND TRADE FAIR COMMITTEE



What impact has the coronavirus epidemic had, and does it continue to have, on events within the textile machine industry?

In principle, all trade fairs, events and similar get-togethers were put on ice in the middle of March. Most organizers initially repeatedly moved these to in part later dates in the year in the hope that the pandemic would be quickly contained and the second half of the year could continue as normal. Ultimately, we must all recognize that the coronavirus crisis and its impact on our global coexistence will continue to determine activities for a long time to come. Travel currently continues to be possible only to a limited extent and with restrictions and it appears that it will be difficult to plan trips for many months yet. However, planning is everything when it comes to the international trade fair and events business – and that applies to both organizers and, above all, to us as an exhibitor.

What alternatives are now available for intensively maintaining networks and continuing to communicate with partners and customers – and for attractively presenting new products and services in the process?

For us, the focus is more than ever on intensively maintaining contact with our customers and partners. Here, it is about providing information on new products and services, commercial clarification for business already being conducted, the implementation of and support for machines and systems to be installed and commissioned and also maintaining excellent customer relations. And this also includes everyday things, private matters and one thing above all: emotional concerns.

Here, we are using – insofar as possible – all modern digital means of communication such as Skype, MS Teams, Zoom, etc. Ultimately, it is about how those persons involved in this digital world open up and interact with these communications methods. Undoubtedly a question of generation. If at all possible, hybrid customer support solutions with local employees from the company-internal local network and participating experts are currently probably the best alternative.

Could new virtual communication platforms possibly be a solution here. And could they ultimately also be considerably more sustainable in the long term.

Technology webinars – as recently also initiated by the VDMA with a new series and as they will also be offered by Oerlikon Manmade Fibers in the second half of the year – help convey detailed information, predominantly on focus topics, to existing and potential customers.

While the didactic focus of webinars is generally more likely to resemble university lectures, regardless of how creative these might be, and the dialog takes a backseat here – not least also due to the fact that the participants are competing with each other – new, currently nascent digital communication platforms in the form of virtual trade fairs could represent an invaluable addition for all market players.

As well as the purely unidirectional transfer of information using attractively-designed Websites with – in the best case – state-of-the-art virtual reality technologies, there will also be bidirectional communication possibilities available using scheduled video chats between customers and company experts. Conferences and seminars generally round off the program. A hugely-attractive offering for all participants – as long as sufficient numbers take part on both sides.

Because it is only if the benefit of a 'real trade fair' is created – the possibility to compare products and solutions from different suppliers and the offerings on a digital communication platform designed in this manner and to collate all the relevant information for making a purchase decision in a timely and efficient way, i.e. by means of downloads – will suppliers and visitors be able to acquire long-term added value. We at Oerlikon Manmade Fibers are thrilled to be part of this and to welcome our customers to a new virtual world.

**"FOR US, THE FOCUS IS MORE THAN EVER ON INTENSIVELY MAINTAINING CONTACT WITH OUR CUSTOMERS AND PARTNERS. "**

# SIVAKUMAR NARAYANAN

EXECUTIVE VICE PRESIDENT WITHIN USTER

"WHEN MARKET  
CONDITIONS ARE TOUGH,  
QUALITY OFTEN  
BECOMES A KEY  
PURCHASE CRITERION"



USTER supports manufacturers to manage their mills with quality in mind. Thinking about a spinner's business, what are the biggest challenges?

Nowadays, yarn producers have a quality-oriented mindset and understand the benefits of customer satisfaction. However, there is a need to achieve a balance between managing the challenges related to a low demand cycle, such as capital, retaining personnel and preparing for an imminent potential upswing.

When market conditions are tough, quality often becomes a key purchase criterion because customers can choose from many suppliers. Our customers are trying hard to manage short-term needs, while somehow preparing for longer-term sustainability.

There must be pressure on suppliers as well due to the tough situation. Do you see capital investments happening?

Textile mills trust in technology which supports them to deliver consistent quality, and many major companies use this as an opportunity to invest in quality improvement equipment. At the same time, we also see that investment decisions – for example, in yarn clearers – can become bogged down in smaller details such as sensor technology discussions, prices and features. This can mean that the 'big picture' of quality and running costs – which are the daily reality after the initial investment – are totally forgotten.

So, we like to build awareness on such topics, while trying to help customers prioritize investments within their unique context, and continue to support them for the future.

Please expand further on your comment about the focus on 'details vs. the big picture'. What is missing in terms of a deep analysis for investments?

Let me give you an example. Let's assume you are considering an investment to replace the yarn clearers on your automatic winding machines. One factor to keep in mind is that the operational costs of running a winding department with 500 winding positions could be more than USD 3.5 million over a ten-year period, at a conservative estimate. In practice, the initial investment expenditure can actually be dwarfed by the cost of splices – hundreds of thousands of them – needed over the clearers' lifetime because of unacceptable yarn faults and bobbin changes.

Please bear in mind at the same time that the capital investment in the yarn clearer itself is a small fraction of the operational cost. Making prudent choices, it is possible to save up to one million dollars over the same period, depending on yarn type, quality and production conditions. However, often but not always, decisions are taken with a narrow focus on the product features and/or price discounts – which are actually a tiny fraction of the running costs.

This approach actually hides the really important issues and unfortunately leads to negative surprises when starting to use the equipment.

What would you recommend to assure profitable investment?

As a general principle, I would advocate greater awareness of operational costs and savings opportunities. This is really the bigger picture to consider. Evaluation of investments should factor in the differences in operational costs between competing choices, instead of focusing too much on small differences in the initial capital cost.

For example, USTER recently introduced the idea of preventive yarn clearing – with the idea of preventing faults being produced, instead of cutting them out at winding. This can, for example, result in large operational cost savings, while the initial capital differences are not critical. Substantial savings, equal to one third of operational costs, can be achieved with USTER® QUANTUM 3 alone. These savings can be even greater when combined with other in line quality monitoring devices such as those for ring spinning or fiber cleaning.

This seems like a sure return on investments?

Yes, it could be. For example, with the preventive yarn clearing concept, USTER focuses on three critical points.

Firstly, we want to empower spinners in delivering the right quality, consistently, day and night. Secondly, the required quality has to be achieved with the lowest number of unnecessary splices (costs). Thirdly, defects must be prevented at source. In the context of our discussion, when investing in a yarn clearer, for example, it would be useful to understand the consequences – both financial and in terms of quality reputation – of such an approach against the alternatives, before negotiating the initial capital cost.

The ROI calculation might look good when considering price, instead of the three reasons you've just mentioned. Does it work for other areas as well?

It does. For example, in a contamination removal system, it might be worthwhile to assess the cost of cotton ejections over a few years and examine ways to help reduce this cost, while keeping quality consistent. This can often save hundreds of thousands of dollars. For ring monitoring systems, it might be useful to question the actual purpose of the investment: ring monitoring or ring spinning optimization? The focus on monitoring could rightly be regarded as a very limited objective, while optimization would have implications to a magnitude of several million dollars.

That is an interesting angle. So, for long-term profitability, it's essential to look more closely at operational costs as well as at the capital expenditure?

Operational expenditure and capital expenditure are two totally different aspects of a new investment decision. The operational expenditure approach requires a closer look while considering large investments. It's essential to find the real drivers of running costs and take product life-cycle into account to calculate the savings.

This might be highly relevant in today's difficult market environment – but it would be no less important even in better times. At USTER, we are keen for our customers to prosper today as well as tomorrow, and will always be there to help them make informed decisions.

*(Note: This interview was conducted earlier this year before the Covid 19 crisis broadened and the shutdown that followed)*



# Cinte Techtextil China confirmed for September 2020

**W**hile many important trade fairs around the world have been canceled or postponed due to the contact closures in connection with the COVID-19 pandemic, the industry of technical textiles and nonwovens can at least look forward to an absolute highlight in Asia. The continent's leading international trade fair for these industries returns to Shanghai in 2020 for its 14th edition. The fair is confirmed to take place from 2 – 4 September at the Shanghai New International Expo Centre, its home for the last three editions. The previous fair in 2018 hosted some 485 exhibitors from 22 countries and regions, while there were 13,203 visits coming from 55 countries and regions. While the global economy as well as the textiles sector are in a state of flux at present, this unique situation is expected to present opportunities for exhibitors at this year's fair.

"As the daughter show of Techtextil in Germany, and the second biggest in the series behind the Frankfurt fair, Cinte Techtextil China is highly regarded within the domestic market, a market that continues to go from strength to strength," Ms Wendy Wen, Senior General Manager of Messe Frankfurt (HK) Ltd explained. "Obviously the novel coronavirus outbreak has severely affected economic growth across China in the last two months, however we expect the economy to rebound strongly in the second half of the year," she continued. 40 international economists polled by Reuters in February did predict a contraction in the economy in quarter one, but were optimistic that the economy would bounce back in the second quarter. "This unfortunate situation does present opportunities in the personal hygiene and protective wear sectors in particular though, with global demand soaring for products made from nonwovens, including face masks, antibacterial wet wipes, protective apparel and more."

Particularly, there is a supply shortage of one key raw material for surgical mask production – meltblown nonwovens & meltblown equipment. This, along with other nonwovens products and machinery will be in high demand.

"In addition, there is more and more evidence emerging from China in recent weeks that the economy is on the right track, especially when it comes

to industrial activity. This gives us confidence that, in addition to the expected demand for medical & hygiene and protective textiles at the fair, other sectors that have traditionally been strong at Cinte Techtextil will experience high demand once again. This includes the likes of filtration & separation, geotechnical, structural reinforcement, transportation and environmental protection,” Ms Wen concluded.

### **Nonwovens forecast: what coronavirus means to the nonwovens industry in China**

According to CNITA's figures, the demand for nonwoven fabrics in 2019 continued to be strong worldwide in terms of production. The annual output of nonwoven fabrics of large-scale Chinese enterprises reached 5.03 million tons, a year-on-year increase of 9.9%. In terms of economic growth, the main business income of nonwovens increased by 2.9% and gross profit margin increased by 0.3 percentage points in 2019. In terms of international trade, China's nonwovens exports in 2019 were one of the top three export products, while the export value increased by 5.4%.

The export volume of nonwoven fabrics was 1.051 million tons, an increase of 9.1% year-on-year. The export of disposable sanitary products continued to be active, and the export quota and export volume increased significantly by 16% and 18.8% respectively over the same period of the previous year.

Even though meltblown materials have not been in the mainstream production in China, they are now in huge demand due to the greater production of and investment in masks, medical protective clothing and disinfection wipes.

### **Meltblown nonwovens – core of surgical masks**

Meltblown materials are mainly used in the production of masks, environmental protection materials, protective cloths, battery separators and other products. The production of one surgical masks requires approximately 1g of meltblown nonwovens plus 2g spunbond nonwovens; and that of one N95 mask requires approximately 3-4g meltblown plus 4g spunbond nonwovens.

### **New Medical and Protective Zone**

Recognising the important role the technical textiles and nonwovens sector has played in combating the pandemic in recent months and new opportunities in future for suppliers, Cinte Techtextil will debut a Medical and Protective Zone.

To further support the industry, the exhibitor registration deadline has been extended to give companies more time to sign up for the fair.

“The global textile industry should be immensely proud of the effort it has made in helping combat COVID-19,” Ms Wendy Wen commented. “The adaptation and innovation they have shown to save lives and support frontline workers in countries around the world has been inspiring. We would like to give these suppliers as much visibility as possible to showcase their expertise and capabilities at Asia's leading fair for the sector, hence the creation of the new Medical and Protective Zone at Cinte Techtextil China in September.”

The Medical and Protective Zone is a special display area dedicated to textile products and technologies focused on epidemic prevention. Suppliers can utilise this zone to showcase their abilities in producing PPE and other medical and protective equipment, connect with potential partners for future collaboration and show how they have contributed to the fight against the pandemic in their countries.

### **Cinte Techtextil exhibitors do their part**

Some of the fair's exhibitors who have already confirmed their participation in 2020 have developed new products, or are highlighting existing products, that help during the pandemic. This includes Italian firm A.Celli Nonwovens. As a leading nonwovens machinery manufacturer with a strong presence in China,

they were able to connect spunbond producers with medical mask and protective apparel manufacturers, helping the entire nonwovens supply chain to increase production of urgently needed products.

Industry leader ANDRITZ (Germany) recently developed a fully automatic, high-speed face mask converting line for the production of disposable face masks. The D-Tech Face Mask line produces and laminates three or more layers of fabrics at a speed of up to 110 m/min, allowing it to produce up to 750,000 masks per day.

Bostik's (France) web adhesives improve face mask manufacturing by making the manufacturing process easier, while also enhancing overall facemask performance. This includes improved process flexibility due to the adhesives' ease of use for bonding or laminating nonwovens in medical facemask assembly. What's more, the adhesives are already provided to manufacturers in web form, meaning that only heat activation equipment is needed to complete the mask.

Autefa (Germany), along with its parent company China Hi-Tech Group Corporation Sinomach, developed a new fully automatic machine to produce protective masks earlier this year. The machine, which was expected to be supplied to the Swiss government, can produce up to 40,000 masks per day.

### **Application areas and products**

Cinte Techtextil China's product categories cover 12 application areas, which comprehensively span the full range of potential uses of modern textile technologies. These categories also span the entire industry, from upstream equipment and raw materials providers to finished fabrics, chemicals and other solutions. This full coverage of product groups and application areas ensures the fair is an effective business platform for the entire industry.

### **Online pre-registration**

Buyers can already pre-register for the fair and gain access to the new online business matching service, which will allow them to schedule appointments with exhibitors onsite in advance:

<https://cinte-techtextil-china.hk.messefrankfurt.com/shanghai/en/planning-preparation/visiting.html#pre-registration>.

### **Industry's leading names utilise this business platform**

The fair's strong reputation and full industry coverage ensures the big names from various sectors participate. In the machinery field, A Celli Nonwovens, Andritz, Autefa Solutions, Graf + Cie, Dilo, Itematech, Picanol N V., Reifenhäuser Reicofil and Trutzschler Nonwovens will participate. In the nonwovens category, exhibitors will include Berry Global Group, Eastex Industrial Science And Technology, Foshan Nan-

hai Beautiful Nonwoven, Shandong Province Winsen Non-Woven Materials, Tiandingfeng Holdings, Yantai Tayho Advanced Materials, Zhejiang Baoren Hezhong Technology and more. Furthermore, Arkema (China) Investment Co Ltd, Bostik SA, Monosuisse Group, Rowa Lack GmbH, Stahl Holdings BV and Textest AG will present their innovations.

Now let us have a look at exhibitors and highlights the visitors will be able to discover.

### **Nonwoven Solutions from Autefa Solutions**

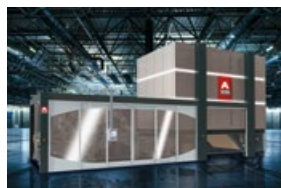
Autefa Solutions, combining the experience of the companies AUTEFA, Fehrer, FOR and Strahm, will showcase future-proof solutions for improving quality and productivity. The company stands for high quality, durability and performance. At CINTe Autefa will present its portfolio as a preferred full-line supplier for carded- crosslapped needlepunch lines, aerodynamic web forming technology, spunlace, and thermobonding lines for producing nonwoven to cater to wide range of applications such as Hygiene, Wipes, Filtration, Geotextile, Automotive, Carpets, Technical felts, Wadding, Insulations, etc. In the premium nonwoven segment Autefa Solutions has a comprehensive product range in both forming and bonding systems. Sustainable production is playing a major part in the company's latest advances in the spunlace sector.

With the Hydroentanglement Machine V-Jet FUTURA Autefa Solutions recently closed the missing link within the companies' product portfolio between the very successful Autefa web forming technology and the drying technology.

The Hydroentanglement Machine V-Jet FUTURA and the Square Drum Dryer SQ-V, stand for an advanced and unique technology. This new technology offers a significant reduction of energy consumption compared to any state-of-the-art line. AUTEFA Solutions Square Drum Dryer SQ-V combines the advantage of a horizontal belt dryer and the better drying efficiency with the space advantage of a drum dryer, resulting in increased drying length with small footprint.

The spunlace sector is becoming increasingly competitive for end product manufacturers. AUTEFA Solutions offer complete lines for the production of direct and crosslapped spun-lace products. The web forming process, consisting of the unique Injection Card and Crosslapper Topliner series, is the key for high and consistent nonwoven fabric quality. The main challenge in such high speed lines is to keep fibers at any time and process stage under control. Autefa Solutions Injection card enables (Drylaid) web forming at very high production. The Injection Card uses a unique combination of mechanical and aerodynamic principle for a gentle fibre treatment.

The Injection Card delivers a quality web at the highest productions with a better MD/CD. With the Topliner CL4006 SL Autefa Solutions offers a crosslapper with special features for the Spunlace application. Highest layering speeds and precise weight distribution are possible thanks to the integrated drafting unit, compensation belt, antistatic equipment and new designed transport aprons. These features are very important especially for lightweight applications in Spunlace lines.



Hydroentanglement Machine V-Jet Futura and Square Drum Dryer SQ-V © Autefa



Autefa Solutions Nonwovens competence center, Linz Austria © Autefa

Machines and lines have to perform constantly on absolute top level and last for many years with stable performances. To make sure that the delivered equipment works properly, Autefa Solutions subject their machines to extensive testing and inspection before sending them out to our customers. Service 4.0 starts in our company with virtual commissioning.

### **DILO's latest innovations**

DiloGroup offers tailor-made production systems from one supplier and will inform about its portfolio and the latest equipment developments from fibre opening to the finished felt. A new, simplified elliptical needle beam drive makes Hyperpunch technology also attractive for standard application. Hyperpunch H&V allows a more uniform stitch distribution in the preneedling process especially in combination with the new needle pattern 6000X. In a complete needling line this felt homogenization process can be improved further. The new needle pattern 8000X is a milestone in the needle pattern development process and results in endproduct surfaces with low markings over a wide range of advances/stroke.



Dilo 3D Lofter at ITMA 2019 © Dilo



Dilo Hyperlayer at ITMA 2019 © Dilo

The 3D-Lofter which was first presented during ITMA 2019 in Barcelona offers a wider range of nonwovens applications by exploring the third dimension. A series of single web forming units which work according to the aerodynamic web forming principle deliver defined fibre masses in varied patterns on a base

## Cinte Techtextil

needlefelt. A stress-oriented production of technical formed parts resulting in fibre savings or patterned DI-LOUR or DI-LO-OP felts without repeat are two examples for this technology which explores new application areas for needlefelts. The 3D-Lofter technology may also be used "inverted" for filling up bad spots in web mats and thus achieves a better homogeneity of spunlace or airlay products.

The DiloLine 4.0 concept offer I4.0 modules which not only support the user but also facilitate quality control and maintenance by a maximum data transparency in production and control of operation. The Dilo solutions "Smart Start" for a fully automatic start of the production line or "DI-LOWATT" for energy savings are accompanied by Siemens solutions which can be selected via App or Data Cloud "MindSphere".

### Truetzschler Nonwovens

As a supplier of complete production lines Truetzschler Nonwovens offers machinery, service and know-how out of one hand – everything from implementing product ideas to enabling new businesses.

In the nonwovens machinery segment the product range includes fiber preparation equipment, cards and crosslappers, spunlacing machinery, ovens and foulards as well as dryers and winding equipment. At ITMA in Barcelona Truetzschler Nonwovens presented sustainable concepts tailored to individual customer needs. The focus was on technologies for the production of biodegradable light-weight webs from renewable raw materials. In addition to proven solutions for carded, spunlaced nonwovens made of 100% cotton or 100% viscose,



Truetzschler Nonwovens Customer and Technology Center in Egelsbach © Trüttschler

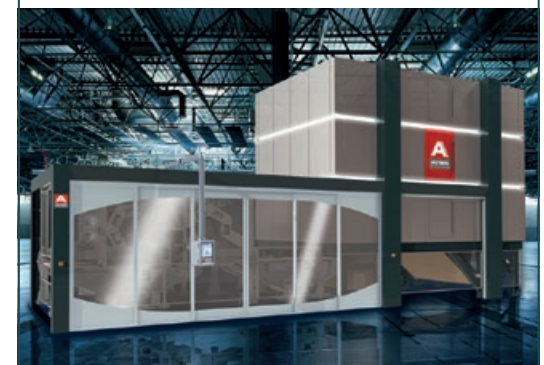
Truetzschler Nonwovens has developed an alternative technology in cooperation with Voith: In a wet-on-wet process, the web is formed from cellulose-based short fibers suspended in water and then bonded by means of hydroentanglement. The sustainable, high-quality wipes and cleaning cloths that result from this process can be completely degraded by microorganisms in the environment after usage by the consumer. Furthermore, in May 2019 Truetzschler has opened its new customer and technology center for nonwovens in Egelsbach (near Frankfurt /Main) to push the technological innovations of nonwoven products as well as the related manufacturing processes. Variety and flexibility are guiding starts to turn ideas into reality. Here, Truetzschler Nonwovens offers to develop new products, check the feasibility of ideas and thoroughly test the machinery. A team of highly experienced experts is available anytime to support developing the optimal production process.

At CTC20 the main focus will be on the efficient making of top-quality wipes and pads as well as nonwoven fabrics for hygiene and technical applications.

## COMPETENCE IN SPUNLACE LINES

AUTEFA Solutions leads the way

[www.autefa.com](http://www.autefa.com)



With the Hydroentanglement Machine V-Jet FUTURA and the Square Drum Dryer SQ-V AUTEFA Solutions has developed an advanced and unique technology with special focus on reducing energy consumption. Besides it's high energy efficiency, the new Hydroentanglement Machine V-Jet FUTURA offers highest throughputs, easy maintenance and long lasting V-Jet-technology components.



STRAHM





# DAZZLING SENSATION

**S**equins can subtly enhance a design, or turn heads. Saurer's Epoca 7 shuttle embroidery machine applies these ever-trendy embellishments with precision and speed.

Sequins have been an integral part of fashion for centuries – according to "Smithsonian Magazine", garments embellished with gold discs were discovered in the tomb of Egyptian pharaoh Tutankhamun (1341 BC–1323 BC).

Today, these decorations remain popular and fashionable, adding sparkle to a range of items from home textiles to haute couture. These textiles are produced on state-of-the-art embroidery machines such as those manufactured by the globally operating technology company Saurer. Saurer is the market leader in the world of embroidery production systems.

"Using our embroidery offerings, many of Saurer's customers produce scintillating creations for the world's great fashion houses, including Dolce&Gabbana, Marc Jacobs, Karl Lagerfeld and Hermès," says Andreas Galiga, Textile Ennoblement Expert, BU Embroidery.

And he adds: "All our customers do fantastic work – we are proud to play a small part in shaping their creations. It is also thrilling to see these beautiful garments displayed on the world's most prestigious runways. The range of possible designs is almost unlimited and we have seen many boundary-pushing concepts over the years."

For most of their history, sequins were made out of (precious) metal. For a brief period in the 1930s, lightweight gelatine discs were used. However, these were impractical because they tended to melt easily and dissolve when coming into contact with liquids. Today, the sequins that Saurer's Epoca 7 machine applies are composed of strong laminated polyester.

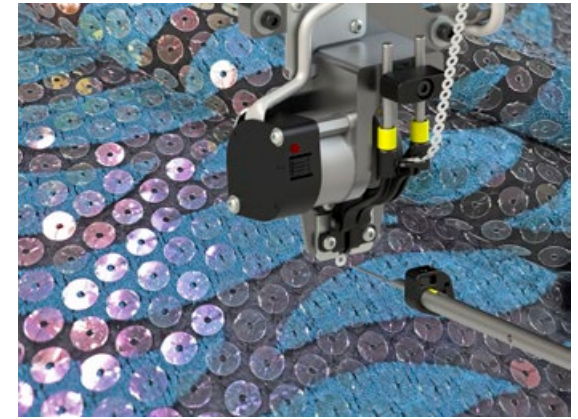
"A stand-out feature of the SequinsHead attachment is the speed at which it does its job, applying up to 600 sequins a minute. This means that full surface designs can be generated rapidly even when using large repeats," says Andreas Galiga.

The discs can be applied in various ways, including in lines or using the triangle stitch. Skilled customers can master the challenge of attaching sequins so they are tilted – the result: a stunning effect where an embellished surface reveals different images/colours depending on which way the sequins are facing. The range of possible designs is almost unlimited.

### SequinsHead – fast and precise.

- Part of the HeadLine System including LaserHead and SoutacheHead
- Production speed of up to 600 rpm
- Monitoring of single heads and an electronic drive ensure precision across the entire machine length
- Easy and fast replacement of application heads
- Can be expanded at any time by adding additional application heads
- Integrated mending function

[www.saurer.com](http://www.saurer.com)



Using the Sequins- Head attachment, customers can apply common sequin sizes (3 mm, 4 mm, 5 mm and 7 mm) in combination or even as double sequins. © Saurer



Sequins are a hot trend: in early 2020, a multitude of sparkling outfits added glamour to the runway of the Berlin Fashion Week and the red carpet at the Oscars.

The SequinsLine System is used for designs that are composed mainly of sequins. Its segmental structure and the electronic drive guarantee precision over the entire embroidery length. © Saurer

# Retrofitting of textile machines for an efficient digital production

**AUTHORS: MR. NIELS GRIGAT (M.SC.), MR. MARTIN KOLLOCH (M.SC.), MR. JOHANNES SACKMANN (DR.-ING.), MS. NICOLINA PRASS (MBA)**

**T**o avoid high investments for the digital transformation in a production, retrofitting approaches can be used to integrate existing machines for condition monitoring. New machines are easier to integrate into a digitized production because data and information can be taken from the existing control system. In order to digitize production processes, companies hesitate to make huge investments for new machines due to the fact that the existing machinery is still running smoothly. However, in the concept of retrofitting, sensors are integrated in existing machines to obtain more information and data in addition to the data record from the existing control system.

The additional information received enables the operator to analyze the machine's condition and react accordingly. Thus, machine downtimes caused by process errors can be minimized. In the following section two examples of retrofitting at the ITA are explained.

## **DIGITIZED 3D-BRAIDING MACHINE**

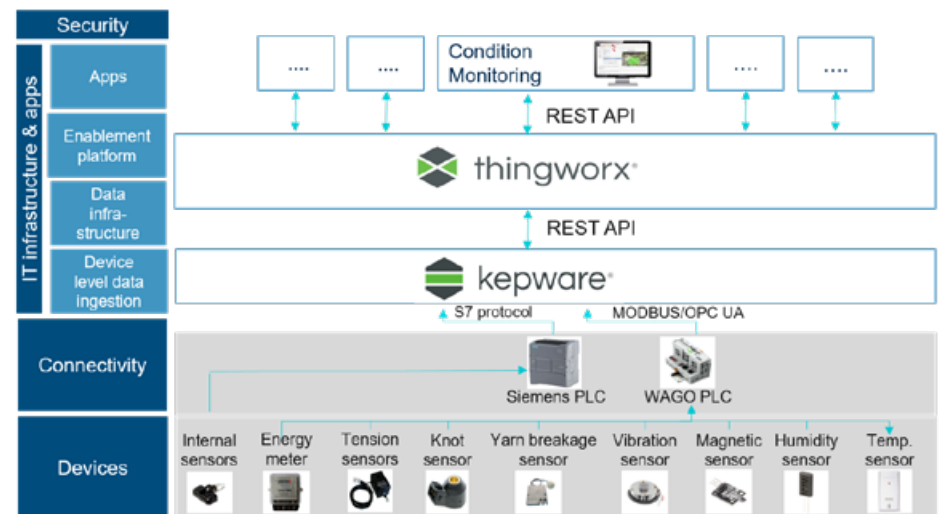
Based on existing conventional mechanics, a 3D braiding machine was digitized at the Institute for Textiles (ITA) at the RWTH Aachen University and retrofitted to obtain industry 4.0 standards. By retrofitting, the process stability could be increased to almost 100 % and the machine speed could be increased by 150 %. With the technology of the 3D-Braiding machine it is possible to produce textile semi-finished

products that are reinforced in all three spatial directions. These semi-finished products serve as the basis for fiber-reinforced composites (FRC), which show increased shear and bending strengths compared to two-dimensional FRC. The increased process stability of the 3D-Braiding machine due to the retrofitting allows the processing of brittle materials such as ceramic fibers for the first time. This has made it possible to develop new three-dimensionally reinforced ceramic composites (CMC) that are suitable for the use in high-temperature applications. The use of components made of CMC in aircraft turbines is of particular interest.

Here, the process efficiency can be increased by means of higher combustion temperatures and at the same time the light-

weight construction potential of CMC can be exploited. However, components used in the aerospace industry must meet the highest quality standards.

Within the scope of retrofitting the 3D-Braiding machine, a holistic digital quality concept was developed. The machine control software is coupled with simulation software so that components can be fully simulated and digitally mapped during production planning and design. This increases the flexibility during process planning and control. Potential problems in the production of a semi-finished textile product are detected in the simulation in advance and enable particularly early preventive measures to be taken, thus saving time and costs. During the subsequent production process, all machine data is recorded and continuously monitored.



IoT platform at DCC Aachen © ITA



3D-Braiding Machine © ITA

Deviations from set production parameters are detected and controlled in real time. Undetected process errors can thus be avoided preventively.

A secure Internet connection offers the possibility of external access to the machine control. This allows process control and monitoring from any location via app from a mobile device or computer. For pure process control and monitoring, the physical presence of personnel is obsolete, thus increasing flexibility in production.

Even remote maintenance happens to be without difficulty due to the retrofitting of the machine. Furthermore, any external sensor technology installed on the machine can be integrated and implemented via the selected software solution.

Thus, an extension of the quality control by recording previously unrecorded parameters is possible at any time. The example of the 3D-Braiding machine shown here indicates how conventional machine technology can be brought up to the state of the art by the concept of retrofitting. This way, existing machines can be transferred to a digitized production environment in the age of Industry 4.0.

#### **RETROFITTED IOT PLATFORM FOR MONITORING A PRODUCTION LINE**

In order to record the full transparency of different production data with different machines, sensors are connected to the machines and linked together. In the Digital Capability Center Aachen (DCC), which shows a model factory 4.0 with a real production environment, the sensors are connected to an IoT platform during production preparation - at the warping machine - while the Mobile Sensor Kit is implemented at the sublimation printer and at the connected cutting machine.

Apps are programmed for the visualization and evaluation of the data in order to display the individually required data for each employee/workstation as a user interface/dashboard.

Full connectivity can be achieved with an IoT platform by using the appropriate sensor technology for parameter acquisition. The exemplary IoT stack on the DCC line is shown in Fig. 2 and was implemented with the Thingworx and Kepware solutions from PTC, Inc. For simplicity, only the connected devices and software are shown in connection with its main application „Condition Monitoring“, a real-time monitoring of machine states and OEE and output tracking for performance management.

The platform acts as an enabler for further use cases based on the common connected data infrastructure, but using different analyses depending on the application and including further user interfaces. The system structure shown illustrates the main features and advantages of upgraded IoT platforms:

Various sensors can be added to monitor both the production environment, e.g. temperature and humidity, and machine-specific data, e.g. energy consumption, tension or knots or breaks in yarns or the vibration of a bearing.

- External control units, such as the Wago PLC, are added to connect these additional sensors to avoid having to access and modify existing PLC programs (Siemens PLC, in Fig. 2).
- A middleware (Kepware) takes all data points and contextualizes them, i.e. marks and describes them, as preparation for further analysis.
- The actual enablement platform, Thingworx, uses logic and visualization to create applications and dashboards in a „drag-and-drop mode“ that is also accessible to non-software engineers.
- All applications can be accessed through various devices such as smartphones, augmented or virtual reality glasses or laptops, but a primary device is defined based on the user context. For condition monitoring, this is an application that runs on a tablet or smartphone.
- Apps can be run on a server or in a cloud environment and trigger discussion with participants on how to make this decision.

# Recycling/Closing the loop

AUTHORS: MS. DR. ANNETTE KOLKMANN,  
MR. ROLF WESTPHAL, ITA TECHNOLOGIETRANSFER GMBH

**A**ccording to the EU directive, recycling is defined as any recycling process by which waste materials are processed into new products, materials or substances either for their original purpose or for other purposes. It includes the processing of organic materials, but not energy recovery and processing into materials that are intended for use as fuel or for backfilling. (Quote from Wikipedia)

Defined recycling targets according to the EU regulation 94/62/EG (short PACK) are given for individual materials with the following minimum quota:

- 50 % plastics
- 25 % wood
- 70 % iron metal
- 50 % aluminium
- 70 % glass und
- 75 % paper and cardboard

In accordance with the EU directives, individual regulations are established in each EU country. In Germany, e.g. special packaging laws (VerpackG) are regulating the market of packaging as well as the return and recycling of packaging waste. Further regulations of the circular economy are being prepared regionally.

According to these recycling targets of the EU and the international community, which are currently limited to the above materials, it seems advisable to extend the EU regulation of material flow detection to the area of recycling of textiles. In this context, the resource textile has to be given a limit value in order to take into account the rapidly increasing volume in the industrial and consumer sectors.

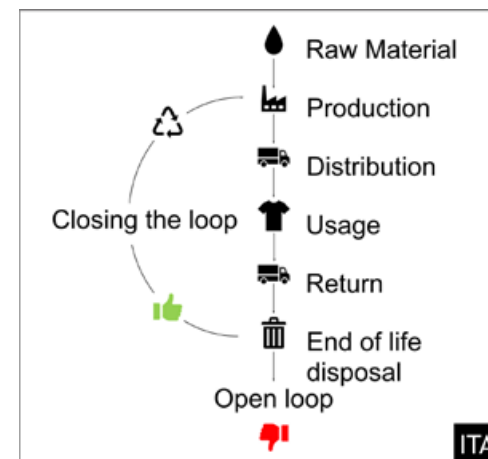
Most companies focused the topic of recycling from the perspective of: where / how can a „waste“ material be reduced or re-integrated into the in-house process without affecting the quality of the product.

Another aspect was the consideration of the possibility of making a post-industrial resource available to other companies or industries for further use in recycling. Both ways are understandable and meaningful. In this case, a collection and recycling process has been established which accompanies each individual through their everyday life. However, there is little time for global questions on this topic in day-to-day business. To pay more attention to these questions the new platform „IRG Polymer Recycling“ is one possibility.

The „Industry Research Group Polymer Recycling“ (short: IRG Polymer Recycling) is a scientific working group, which has established an interdisciplinary dialogue with the textile, chemical and recycling industry. The aims are to record and analyse the material flows in the „post-industrial“ and „post consumer“ areas and to develop processes for a sustainable material flow utilization. The research working group

was founded by ITA Technologietransfer GmbH in close cooperation with the Institut für Textiltechnik of RWTH Aachen University (ITA).

Leading companies from the chemical fiber industry, the recycling plant technologies, the polymer engineering technology as well as specialist engineers from the recycling of materials and the automotive supply industry have defined relevant topics of material textile recycling. Based on this topics resulting questions will be analysed and investigated accordingly. With their membership in the IRG Polymer Recycling, companies have the opportunity to set recycling targets and key topics in dialogue. Research goals will be defined in terms of their design, which are afterwards further developed scientifically with accompanying industrial experience. The resulting synergies and results are available to the members of the industrial group.



Recycling-concept © ITA



Collection of used textiles © ITA

Due to the close cooperation with the Institut für Textiltechnik of RWTH Aachen University, research questions are addressed by qualified specialists and accompanied by an industry-experienced and practice-oriented project management of ITA Technologietransfer GmbH. The technical implementation of the research aspects is carried out on the equipment of the technical labs of ITA as well as on systems of individual IRG members.

The aim of the IRG Polymer Recycling is to define technological, economic and strategic tasks along the entire value chain of the textile circular economy through the systematic development of a recycling concept. The long-term goal of IRG Polymer Recycling is the development and establishment of methods and technologies for recycling textile waste after „post industrial“ and „post-consumer“ use. The vision is to significantly increase the profitability of the circular economy by applying new methods and approaches.

### **THE FOLLOWING ASPECTS ARE CONSIDERED:**

- **analysis of the flow of goods, i.e. the collection of textile waste and the current recycling flows**
- **analysis of the various material recycling processes, the ways of acquiring and recycling (textile) waste**
- **material recycling in physical and chemical processes**
- **development of fibers and textiles from recycled material**
- **analysis of recycled material as well as the analysis of recycling and melt spinning processes for fiber production**
- **quality of the recycling material based on an evaluation matrix**

The accessibility to recycling material is examined in detail, i.e. how is the collection of recycling material organized, what other options are available for the procurement of recycling material. This also includes a summary of an overview of the markets, their size and their material volume. In addition to the classic „collection of used textiles“, this consideration is intended to show other ways and sources that subsequently lead to the development of new flows of goods.

Furthermore, when analyzing the recycling flows, the recycling technologies used in the textile industry are considered. The results of this research will be a statement about the quality of the recycling material and its „re-usability“ in the clothing sector or in the field of technical textiles. The analysis of the recycling flows includes the description of the recycling flows and a statement about the quality of the recycling material based on an evaluation matrix.

During the steps described so far, the shares/percentages of the valuable substance contained in the material flow was not considered in detail. The shares/percentages should now be examined with regard to the recyclability in different target markets and application.

The focus is currently on the recovery of PET raw materials from the available recyclable materials. Various sorting technologies and recycling technologies, available on the market, are examined and evalua-

ted according to material recycling properties. These investigations will provide a statement on the purity of the variety and on the possibilities of recovering the PET material from the existing material flows and fiber mixtures.

The further process is coordinated in regular meetings and monthly telephone conferences. Become a member, the advantages are obvious!

- **community funding of material recycling research projects (crowd funding)**
- **exchange of experience between industry and science on a neutral platform**
- **access to university's scientific and technical resources**

All topics to be worked on are determined by the members themselves and by mutual agreement according to their needs. Participation allows access to extensive technological knowledge base and active participation in the development of new technologies and recycling processes for polymer-based products, regardless of the daily business.

### **CONTACT:**

Mr. Rolf Westphal  
r.westphal@ita-gmbh-ac.de

# The Internet of Textile Production

**AUTHORS: MS. HANNAH DAMMERS, MR. FLORIAN BRILLOWSKI,  
MS. HANNAH KOCH, MR. KAI MÜLLER, MR. LEON REINSCH**

**T**hanks to its worldwide networking, the Internet makes it possible to disseminate data without delay and with little effort. The transfer of the idea of networking to devices such as refrigerators or cars is known as the Internet of Things (IoT). An application of the IoT approach to production is desirable, but not appropriate due to a large number of varying setting parameters and poor data availability.

Therefore, a separate Internet of Production (IoP) is needed, which is based on the vision of cross-domain collaboration and data availability with the goal of a consistently controlled production. In the Cluster of Excellence "Internet of Production", a large scale research project at RWTH Aachen University, data from production, development and use are combined in such a way that they are available in real time, at all times. The focus is on the analysis and preparation of data as required, including machine learning algorithms, so that a minimum amount of data is processed with maximum information density.

Due to its worldwide relevance, the high proportion of manual work steps, the global spread of production steps, and its position

as a supplier for other industries (mechanical engineering, automotive, construction, ...), the textile industry is an ideal test area for IoP developments. In order to meet the different requirements, the Institut für Textiltechnik of RWTH Aachen University (ITA) researches in four levels of IoP: technology development for production, decision support through the extraction of expert knowledge, agile product development and development of human-machine systems in the context of digitization.

## **TECHNOLOGY DRIVEN DEVELOPMENT**

With increasingly complex customer requirements and versatile production technologies, technical support processes must be developed quickly and experience-based processes, replaced.

The requirements consist of, the needs-based preparation of data, knowledge and models, a constant flow of information throughout the entire product life cycle and the integration of additional functionalities into products and processes.

At ITA, this is investigated using the use case Digital Development of Technical Knitted Fabrics.

Electronically controlled knitting machines currently offer a wide range of potential for the design and functionalisation of textiles during production. In order to cope with the increasing complexity of knitting technology, the IoP conducts research on digital product development processes. Geometric models and automated algorithms facilitate the complex pattern programming. Digital representation of knitted fabric properties and process variables ensure the necessary information flow throughout the entire product life cycle.

## **AGILE PRODUCT DEVELOPMENT**

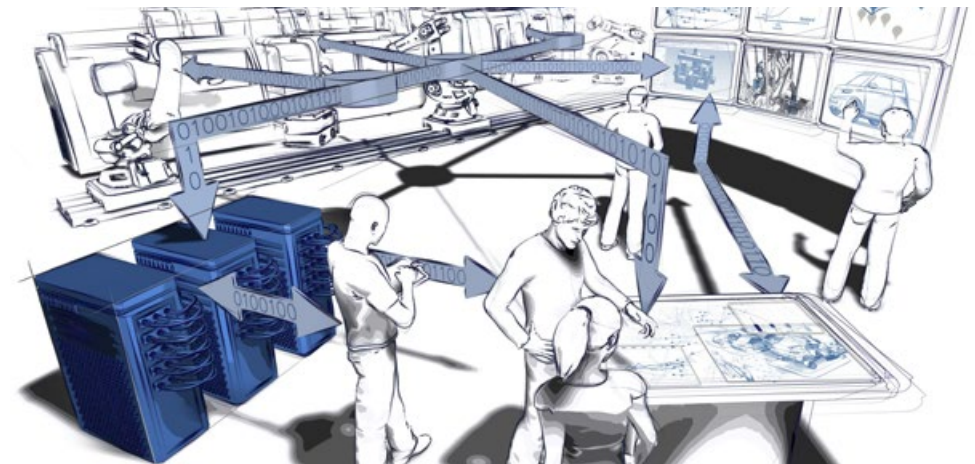
Agile product development requires the development of agile production technologies, processes and tools. These must be applicable for the characteristics of agile product development, fast, iterative and with high (specific) functionality.

A well-known example for the application of agile product development processes is

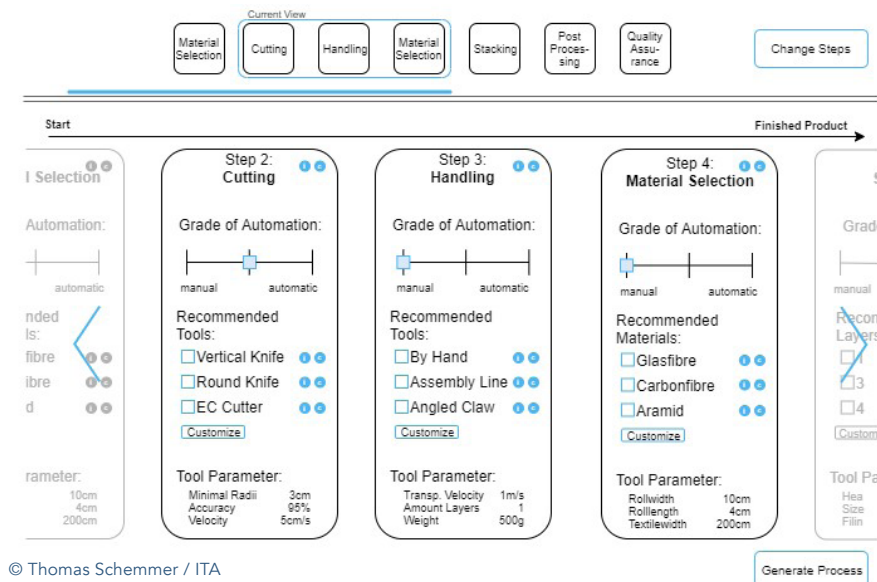
3D printing, which enables the economic production of components in batch size 1 and fast changes.

At ITA, the still young field of 4D printing with textiles is being researched. If 3D printing is applied to a pre-stretched textile, textile products can be produced that change their form and function over time - so-called 4D textiles. The change is achieved by a complex interaction between hybrid materials and the influence of an external stimulus.

The advantages of textiles as carrier materials are; the textile's ability to store energy and the possibility to produce large-area components with local functionalities. At the same time costs can be reduced. Applications are adaptive ventilation systems, active acoustic panels or self-folding antennas. In the IoP, research is being carried out to establish a design platform for this innovative material structure.



© Dr. Martin Riedel / ITA



## DECISION SUPPORT THROUGH THE EXTRACTION OF EXPERT KNOWLEDGE

At this level, the research focus is on the use of data on a cross-process level. This includes, for example, the support of specialists and management in the areas of production system configuration, production planning, production control and quality control loops. Models are developed to react to production downtimes at short notice or to identify bottlenecks in production. Based on this data, organizations can make transparent decisions for an entire production network across locations.

Under the title short-term production management, ITA is developing a prediction model in cooperation with the Digital Capability Center (DCC) Aachen, which allows the prediction of settings for a digital textile

printing process on the basis of machine, energy consumption and environmental data. Thus, sufficient quality can be produced with optimized energy consumption and without set-up time or waste. The developed models and recorded data lead away from a purely experience-based production planning to a fact-based, optimized planning of materials, machines, energy consumption and skilled workers.

The Use-Case Recommender App for production planning examines planning processes in the composite industry. A composite engineer is confronted with challenges when designing a multi-stage manufacturing process chain. The selection of the technologies to be used depends on the material, the component geometry and the desired product properties.

Until now, process planning has been iterative and based on experience or best practice examples in cost-intensive trial and error processes. In the course of the IoP, a Recommender App will be developed, focusing on networking possibilities, knowledge management and the systematic generation of meaningful production processes. Learning from historical data, recommendations for subsequent steps in process planning can be given and quality data can be fed back.

## HUMAN-MACHINE SYSTEMS

In addition to technological progress and changes within the organisation induced by digitisation, work processes in the textile production environment are also influenced. Therefore, the effects and advantages of an increasing collection and usage of data on the manual textile production process, work ergonomics and user acceptance are systematically investigated. Furthermore, human-machine systems for the textile production chain are developed.



© ITA

This is being researched on the basis of the ITA-Use-Case innovative composite workstations of the future. About half of all composite components are produced manually, with extremely high demands on the positional accuracy and freedom from defects of the individual textile layers. Therefore, it is essential to support workers within composite production both in decision-making and in practical work. For this reason, within the IoP an innovative workspace is developed that supports experts by using human-robot collaboration and digital assistance systems such as augmented reality or laser projection systems. In this way, not only the reproducibility but also the ergonomics and user-friendliness of manual composite production processes can be increased.

All the levels and scenarios described point to a future in which development times will become shorter, man and machine will work closely together and data will enable individualized processes. The ITA team would like to implement innovations in the described areas in the industrial context in the future. We are, therefore, looking for innovative companies to jointly shape the future of digitalised textile production.

## ACKNOWLEDGEMENT

Funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC-2023 Internet of Production – 390621612. The authors would like to thank the DFG for its support.

# NEWS

#Seal #Certification

## **GOTS ANNUAL REPORT 2019**

Global Organic Textile Standard (GOTS) has released its annual report 2019. The number of GOTS certified facilities globally increased by 35%, from 5,760 to 7,765 located in 70 countries, counting 3 million workers in 70 countries covered under GOTS.

## **GOTS IMAGE FILM LAUNCHED**

The clip focuses on manufacturing and was filmed in Tirupur in Tamilnadu, India. Maridos, Sample Master Cutter at the GOTS certified Armstrong Knitting Mills, tells his story and how he benefits from working in a GOTS certified company.

[www.global-standard.org](http://www.global-standard.org)

#Seal #Certification

## **JAPAN'S FIRST UNIFORMS CERTIFIED BY MADE IN GREEN BY OEKO-TEX®**

MIDORI ANZEN Co., Ltd., and Toray Industries, Inc., announced that their jointly developed work uniforms have become the first in Japan to be qualified a MADE IN GREEN by OEKO-TEX®, a traceable product label that guarantees that a textile product has been manufactured using sustainable processes under environmentally friendly and socially responsible working conditions.

[toray.com](http://toray.com)

[www.madeingreen.com](http://www.madeingreen.com)

# SUSTAINABILITY

#Fiber #Nonwovens

## **MONDI NOMINATED FOR THE INNOVATION AWARD "BIO-BASED MATERIAL OF THE YEAR 2020"**

Mondi's new Carded Airlaid Carded (CAC) line allows producing a fully biodegradable nonwoven for wipes. The new technology uses 100% cellulose content resulting in a nonwoven material that behaves like a classical spun lace. The CAC line makes it possible to combine three layers into a highly functional and stable composite material in-line. It improves the sustainability of non-wovens by using pulp that is a less energy intensive raw material than viscose but still achieves the properties of a 100% viscose-based material (e.g. soft and efficient cleaning). The new CAC line will be operational in beginning of 2021.

[www.mondigroup.com](http://www.mondigroup.com)

#Nonwovens

## **SUOMINEN'S CARBON FOOTPRINT INFORMATION HELP CUSTOMERS MAKE INFORMED DECISIONS**

Suominen's vision is to be the frontrunner for nonwovens innovation and sustainability. As a concrete step towards the frontrunner position in sustainability, they are continuously developing new sustainable products. In addition, the company recently announced, they are calculating the carbon footprint of their nonwovens.



Suominen is conducting calculations of how much greenhouse gases are emitted in the production of different nonwovens – from cradle to its factory gate – and offer this information to its customers. © 2020 Suominen

This information helps customers make sustainability-related decisions that are based on facts. A carbon footprint measures the total greenhouse gas emissions generated throughout a product's value chain. Greenhouse gases are generated in the different production phases of the value chain, in transportation, and in the latter part of the value chain when a product is used and finally disposed. The carbon footprints are only the first step. Suominen also has plans to make the other environmental impacts of its products readily accessible to its customers.

[www.suominen.fi](http://www.suominen.fi)

#Certification #Fabric

## **ALL GORE FABRICS MANUFACTURING PLANTS ARE CERTIFIED ACCORDING TO ISO 14001**

In February the GORE fabrics manufacturing plant in Putzbrunn, Bavaria, has been

certified according to the environmental and quality management standard ISO 14001. With this certification, all three Gore-owned plants around the world that manufacture fabrics products are compliant with this globally accepted standard for environmental management systems.

[www.gore.com](http://www.gore.com)

#Fiber #Ranking

## **LENZING LEADS RANKING FOR SUSTAINABLE WOOD PROCUREMENT**

In the "Hot Button Report" issued by the Canadian non-profit organization Canopy, the Lenzing Group was once again rated number one in the world, thus confirming its role as the sustainability trailblazer in the textile industry. In this widely recognized ranking, Canopy grades the world's 32 largest producers of wood-based fibers with respect to their success in achieving sustainable wood and pulp sourcing. Wood and the pulp derived from it are the most important raw materials underlying Lenzing's sustainable production of cellulosic fibers.

[www.lenzing.com](http://www.lenzing.com)

#NGO #Retail #Brand #Standard

## **2019 HIGG FACILITY MODULES PROMOTE A SUSTAINABLE APPAREL AND FOOTWEAR INDUSTRY**

The Sustainable Apparel Coalition (SAC) released the 2019 Higg Facility Modules.

The Higg Facility Environmental Module (Higg FEM) measures seven environmental impact areas in factories, including greenhouse gas emissions, water use and chemicals management. The Higg Facility Social & Labor Module (Higg FSLM) assesses impacts that include wages, working hours and workplace harassment. Using the modules on Higg.org, facilities can complete a self-assessment and have their results verified by a trained third-party verifier. In 2014, only six thousand facilities were using the Higg Index. Today, more than fourteen thousand facilities use the tools to measure inputs and make critical business decisions. By leveraging these tools to quantify the industry's impacts, Higg Index data will propel insights and action that drive lasting change across the industry.

[www.higg.org](http://www.higg.org)

#Association #Nonwovens

## **RISE® CONFERENCE PRESENTS**

### **"WHAT'S NEXT" IN SUSTAINABILITY**

Registration is now open for the 10th edition of RISE® Conference. RISE® will be held at Talley Student Union, North Carolina State University, Raleigh, NC, Sept. 29-30. Highlights include: sustainability developments in polymers, fibers, additives, and fabrics from sourcing and disposal to reuse amid trends that are driving nonwoven advances. [www.inda.org](http://www.inda.org)

#NGO #Cotton #Leather

## **TEXTILE EXCHANGE INTRODUCED**

### **LEATHER IMPACT ACCELERATOR (LIA)**

Textile Exchange introduced the Leather Impact Accelerator (LIA), a name change from the initiative formerly known as the "Responsible Leather" program. The first drafts of LIA 1.0 have been released.

## **TEXTILE EXCHANGE LAUNCHED**

### **REVAMPED MATERIAL CHANGE INDEX**

The Material Change Index (MCI) demonstrates a commitment to transparency and continuous improvement around materials sourcing strategies. With 170 companies participating, the MCI is the largest voluntary peer-to-peer comparison initiative in the textile industry. It tracks the apparel, footwear and home textile sector's progress toward more sustainable materials sourcing, as well as alignment with global efforts like the Sustainable Development Goals (SDGs) and the transition to a circular economy.

## **TEXTILE EXCHANGE RELEASED**

### **ORGANIC CONTENT STANDARD 3.0**

Originally released in 2013, the goal of the Organic Content Standard (OCS) is to increase organic agriculture production. The OCS requires certification of the entire supply chain starting at the first processor of organically grown material through to the final business to business seller.

[www.textileexchange.org](http://www.textileexchange.org)

#Government #Textile Alliance #Seal

## **EXPERT ADVISORY BOARD STARTS WORK**

German Federal Development Minister Dr. Gerd Müller has appointed the members of the independent Green Button Expert Advisory Board. Müller: „I am delighted that we have been able to win these eligible experts to the Advisory Board. Because our goal is to protect people and the environment throughout the supply chain.“ Among other things, the Advisory Board will deal with the user-friendly traceability of the certified products. In addition, the green button should cover future production steps in the supply chain. The Advisory Board's recommendations will be publicly available. The following people belong to it:

- **Prof. Stefanie Lorenzen**, Professor of Business Law, University of Economics and Law Berlin (HWR)
- **Philipp von Bremen**, Head of Business Unit Consumer Policy, Consumer Association Bundesverband e.V. (vzbv)
- **Michael Windfuhr**, Deputy Director, German Institute for Human Rights
- **Dr. Raul Kirmes**, Head of Business Unit Development, German Accreditation Service (DAkS)
- **Achim Lohrie**, Sustainability Expert

[www.gruener-knopf.de](http://www.gruener-knopf.de)

#NGO #Retail #Brand #Standard

## **ZALANDO, SAC AND HIGG CO SET NEW SUSTAINABILITY STANDARD**

Zalando, the Sustainable Apparel Coalition (SAC) and Higg Co announced a new collaboration to accelerate a global sustainability standard in the fashion industry. Zalando is the first retailer to use the SAC's updated version of the Higg Brand & Retail Module (Higg BRM) to make sustainability assessment mandatory for brands selling on its platform. As part of this push toward industry-wide change, Zalando will gather comparable sustainability data from its partner brands to understand where the challenges of the industry are both individually and collectively. Higg BRM data will help Zalando identify trends and explore how to develop solutions to drive meaningful and lasting improvement in collaboration with its partner brands.

[apparelcoalition.org](http://apparelcoalition.org)

#PET #Denim

## **IVL AIMS TO RECYCLE 50 BILLION BOTTLES PER YEAR BY 2025**

Indorama Ventures Public Company Limited (IVL), a global company listed in Thailand has recycled 50 billion PET bottles since 2011. This major global recycling milestone saved three million barrels of crude oil and eliminated 1.65 million tons of carbon. Mr. Yashovardhan Lohia, Chief



Mr. Yashovardhan Lohia, Chief Recycling Officer at Indorama Ventures © Indorama Ventures

Recycling Officer at Indorama Ventures said: "We want to go further because we know PET is fully recyclable and uses less energy and water to produce than alternative beverage packaging. In five years' time we aim to recycle 50 billion bottles a year. To achieve this, we have committed up to US\$ 1.5 billion to expand our recycling business. Our work will support household brand names who are using more and more recycled PET in their bottles." Recycled PET bottles are used to create new beverage bottles and many long-lasting products in the clothing and home furnishing sectors.

[www.indoramaventures.com](http://www.indoramaventures.com)

#Finishing #Denim

### **JEANOLOGIA STARTS IN FABRIC FINISHING**

Jeanologia has announced the time has come to bring its finishing revolution a step closer to the source and starts in fabric finishing. Jeanologia is introducing the first machine that integrates ozone technology to the continuous fabric fi-

nishing process. Just like its equivalent for garments, Jeanologia sees G2 Dynamic as a major game-changer for the fabric finishing industry. Using ozone, created from the air in the atmosphere, G2 Dynamic provides an eco-efficient alternative to several of the most resource intensive and pollutant processes in textile production.

[www.jeanologia.com](http://www.jeanologia.com)

#NGO #Research

### **PLANET TRACKER PARTNERS WITH LAUDES FOUNDATION TO LAUNCH TEXTILES TRACKER**

Non-profit think tank Planet Tracker has received a major grant from Laudes Foundation to bring their proven methodology to the fashion industry. Planet Tracker has found little analysis assessing those natural capital-related financial risks across the value chain which can impact shareholder value. Textiles Tracker will identify and analyse these potential financial risks, enabling investors to cost in natural capital factors. "Without a broader view of system dynamics influencing the industry – with a particular focus for this project on understanding the industry's financial and related investment systems – change will happen piecemeal and slowly. If the cost of natural capital is factored into financial flows, change will occur far more rapidly as businesses cannot risk loss of capital or

indeed reputation," said Planet Tracker's CEO Robin Millington. "This grant will give us the resources to undertake a detailed analysis of the textiles industry and identify value-at-risk for investors."

[planet-tracker.org](http://planet-tracker.org)

#Fiber #PET

### **CARBIOS BEGINS CONSTRUCTION ON INDUSTRIAL DEMONSTRATION PLANT**

Carbios, a company pioneering new bio-industrial solutions to reinvent the lifecycle of plastic and textile polymers, announced the launch of the construction of its industrial demonstration plant for the enzymatic recycling of PET plastic.

[carbios.fr](http://carbios.fr)

#Fiber #Yarn

### **EASTMAN INTRODUCES TRITAN™ RENEW**

Global specialty plastics provider Eastman introduces Tritan™ Renew copolyester. Tritan Renew offers sustainability without compromise, providing the same durability, performance and safety of original Tritan but now with up to 50% recycled content derived from waste plastic. Eastman will produce Tritan Renew with its innovative Advanced Circular Recycling technologies that use recycled plastic as a raw material, reduce consumption of fossil fuel and have lower greenhouse gas footprints. [www.eastman.com](http://www.eastman.com)

## TEXDATA INTERNATIONAL

TexData International GBR  
Adlerhorst 3  
22459 Hamburg  
Germany

Phone: +49 40 5700 4-900  
Fax: +49 40 5700 4-888  
email: [info@texdata.com](mailto:info@texdata.com)  
[www.texdata.com](http://www.texdata.com)

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Mr. Stefan Koberg (Dipl. Industrial Engineer)  
Mr. Oliver Schmidt (Dipl. Industrial Engineer)

Editor in Chief:  
Mr. Oliver Schmidt (Dipl. Industrial Engineer)

Graphics & Layout:  
Mr. Christian Pollege

Editors:  
Mr. Jan Meier, Mrs. Dörte Schmidt,  
Mr. Wilko Schlenderhahn

Translators:  
Mr. Rafael Plancarte, Mexico  
Mr. Yi Xin, China  
Max Grauert GmbH, 21465 Reinbek, Germany

Advertising Director:  
Mr. Stefan Koberg (Dipl. Industrial Engineer)

Advertising partner Italy:  
SEINT SRL, Mrs. Michela Lomuscio  
20090 Assago (Milano), Italy  
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# RECYCLING

#Mattresses

## **BASF WORKING TOWARD CIRCULARITY IN RECYCLING OF MATTRESSES**

BASF has developed a chemical recycling process for used mattresses and is starting pilot tests at the Schwarzheide site in Brandenburg, Germany. The materials from old mattresses are to be recycled in such a way that they can be used for the production of new mattresses.

[www.basf.com](http://www.basf.com)

#NGO #Fiber #Cotton

## **BOREALIS PRODUCING CERTIFIED RENEWABLE POLYPROPYLENE**

Borealis has started to produce polypropylene (PP) based on Neste-produced renewable feedstock in its production facilities in Kallo and Beringen, Belgium. This marks the first time that Borealis has replaced fossil fuel-based feedstock in its large-scale commercial production of PP. Borealis and its upstream partner Neste are moving the industry closer to a circular economy of plastics thanks to the production start in December 2019 of renewable PP. The Belgian plants were recently awarded by the International Sustainability and Carbon Certification (ISCC) organization with ISCC Plus certification for its renewable PP.

[www.borealisgroup.com](http://www.borealisgroup.com)

#Yarn #Fiber

## **DSM HELD PROTECTIVE MATERIALS CIRCULARITY SUMMIT**

During a 2-day summit, DSM invited customers, waste processors and recycling companies to address the recycling of end products made with Dyneema®. Together with the customers and recyclers, DSM jointly created the vision, themes, focus areas, and action plan for the coalition via a series of co-creation workshops. Several companies committed (via signature) towards joining this coalition. The next steps in the upcoming months will be to establish a steering committee and create the coalition framework.

[www.dsm.com](http://www.dsm.com)

#Fiber #Carbon Fiber

## **PLASTICS INDUSTRY ASSOCIATION AWARDS RECYCLED CARBON FIBER**

Vartega is one of three winners of the Relfocus Sustainability Innovation Award for its reclaimed and recycled carbon fiber that enables the diversion of thousands of tons of carbon fiber from the landfill. Vartega's recycled fibers are used in a broad range of applications including nonwoven fabrics, thermoplastic pellets, and 3D printing filaments.

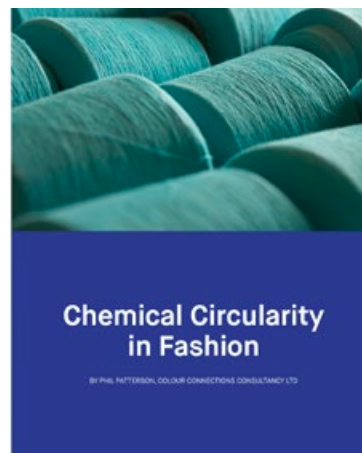
[www.vartega.com](http://www.vartega.com)

[www.plasticsindustry.org](http://www.plasticsindustry.org)

#Textile Chemistry #Fashion

## **CHEMICAL CIRCULARITY IN FASHION**

A new report, written by Colour Connections Consultancy Ltd. and commissioned by the Laudes Foundation, deals with circularity models in fashion.



© Colour Connections Consultancy Ltd

Its goal is to make recommendations and suggestions to chemical suppliers and chemical users in the supply chain of the fashion industry, how to leave the single-use linear models and how to increase the recycling and reuse of textile chemicals. The report shows how chemicals are currently used and disposed of, and highlights the urgency for the fashion industry to change the use of chemicals.

[www.laudesfoundation.org](http://www.laudesfoundation.org)

[tinyurl.com/y7ag5vm5](https://tinyurl.com/y7ag5vm5)

#Fabrics #Plastic waste

## **TESSUTICA PRODUCES FURNITURE UPHOLSTERY FROM RECYCLED MARINE WASTE WITH GREENCARE**

Beaulieu International Group (B.I.G.)'s Tessutica business is proud to announce a new product line in upholstery. Greencare fabrics are created from pellets that come from marine plastic waste. The fabrics themselves can then be 100% recycled into pellets again.

[tessutica.com](http://tessutica.com)

#Brand #RPolyester

## **ADIDAS AND PARLEY FOR THE OCEANS CELEBRATE THE 5TH ANNIVERSARY OF THEIR PARTNERSHIP**

On the day that marks the fifth anniversary of their partnership, adidas and Parley for the Oceans are renewing their commitment to their mutual mission of helping to end the global plastic crisis, bringing eco-innovation and change to the industry. In the last five years, adidas has gradually eliminated virgin polyester from its products and by the end of 2020 more than 50% of all the polyester used in the company's products will be recycled. These achievements put adidas well on track to achieve its goal of phasing out virgin polyester in its products by 2024.

[news.adidas.com](http://news.adidas.com)



(f.l.t.r.): Jochen Franke (CFO, STOLL), Andreas Schellhammer (CEO, STOLL), Arno Gärtner (CEO, KARL MAYER), Dr. Helmut Preßl (CFO, KARL MAYER) © 2020 KARL MAYER

## #Knitting #Textile Machinery

### **KARL MAYER BUYS STOLL**

As part of its growth strategy, the KARL MAYER Group has concluded an agreement to acquire the STOLL Group. The contract was signed on 26 February 2020, and the STOLL Group is to be part of the KARL MAYER Group from 1 July 2020. By acquiring STOLL, KARL MAYER is opening up additional technological growth potential and an innovative solutions portfolio in the flat knitting sector. STOLL is an international industry leader with approx. 1000 employees and offers innovative tools and services for the knitting of tomorrow.

"The acquisition is an important step in our growth strategy and we are proud to welcome STOLL into our Group. STOLL is an internationally recognised brand in the textile industry and has comprehensive technological expertise and an experienced team in the knitting sector," explains

Arno Gärtner, CEO of the KARL MAYER Group. "This alliance brings together two very strong brands in textile machinery building whose solutions portfolios and regional presence complement each other brilliantly," says Andreas Schellhammer, CEO of STOLL. The contract is an asset deal. The well-established STOLL brand will be continued unchanged within the Group.

[www.karlmayer.com](http://www.karlmayer.com)

[www.stoll.com](http://www.stoll.com)

## #Textile Machinery #Finishing

### **BENNINGER ACQUIRES LAB-PRO**

LAB-PRO GmbH was founded in 2003 by Thomas Widmer and Thomas Gerhard. With their excellent market and product knowledge, they have succeeded in building up a complete range of world-leading technological products for discontinuous wet finishing within 17 years.



LAB-PRO SynthMaster (SM) © 2020 Benninger

Especially the jet dyeing machines and jiggers from LAB-PRO are known for having the lowest water and energy consumption and lowest fabric elongation compared to competitors' machines. The Benninger portfolio will be extended by technologically advanced discontinuous dyeing machines such as Jet and Jigger dyeing machines as well as Beam dyeing and laboratory dyeing apparatus. Fully automatic chemical, salt, soda or dye dosing systems, which ensure the highest accuracy and reproducibility, complete the portfolio. By combining the know-how and experience of both companies, Benninger becomes a leading system supplier in the field of continuous and now also discontinuous dyeing and finishing technology and strengthens its strategy as a partner for all customers in the premium segment of the wet finishing industry. Mr. Widmer and Mr. Gerhard will continue to lead the company LAB-PRO as managing directors.

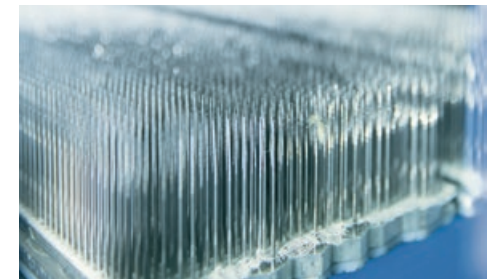
[www.benningergroup.com](http://www.benningergroup.com)

## #Nonwovens

### **FREUDENBERG ACQUIRES FILC**

Effective 2019-12-31, Freudenberg, the global technology group, acquired 100 percent of Filc shares. The purchase agreement was signed in November. The relevant Austrian antitrust authorities approved the acquisition at the end of

December. Filc produces needle punch nonwoven textiles and laminated materials primarily for the automotive and construction industries. The company has roughly 360 employees at three sites in Slovenia and a sales office in Dayton, OH, USA. Filc will be integrated into Freudenberg PM and will continue trading under the name Filc for the time being.



Filc has great needle punch know-how  
© 2019 Freudenberg

## **NEXT STEP IN FREUDENBERG'S LOW & BONAR ACQUISITION**

Following the announcement of the offer published in September 2019 for Freudenberg's planned acquisition of Low & Bonar PLC, the formal application for approval under the EU Merger Regulation from the European Commission was submitted in March 2020 following extensive preliminary discussions and in agreement with the Commission. In April the Commission has granted an unconditional Phase 1 clearance under the EUMR.

[www.freudenberg-pm.com](http://www.freudenberg-pm.com)

# rPET #Polyester #Fiber

## **INDORAMA VENTURES ACQUIRES GREEN FIBER INTERNATIONAL**

Indorama Ventures has acquired Green Fiber International, a recycling company in Fontana, California, USA. The facility produces Recycled Polyethylene Terephthalate (rPET) Flakes. The acquisition has a combined capacity of 40,000 tonnes/annum. [www.indoramaventures.com](http://www.indoramaventures.com)

#Textile Machinery

## **WORLDWIDE SHIPMENTS OF NEW TEXTILE MACHINERY DECREASED IN 2019**

In 2019, global shipments of spinning, texturing, weaving, knitting, and finishing machines decreased on average compared to 2018. Deliveries of new short-staple spindles, open-end rotors, and long-staple spindles dropped by -20%, -20%, and -66%, respectively. The number of shipped draw-texturing spindles declined by -4.5% and deliveries of shuttle-less looms shrunk by -0.5%. Shipments of large circular machines contracted by -1.2%, while shipped flat knitting machines fell by -40%. The sum of deliveries in the finishing segment also dropped by -2% on average. These are the main results of the 42th annual International Textile Machinery Shipment Statistics (ITMSS) just released by the International Textile Manufacturers Federation (ITMF).

[www.itmf.org](http://www.itmf.org)

#Association #Europe

## **EUREATEX PRESENTS ITS STRATEGY FOR THE FUTURE**

The European textile and clothing industry is ready to transform the crisis into an opportunity, and become more digital, sustainable and agile. Endorsed by the last General Assembly, the renewal will be driven by the "strategy for recovery from the COVID-19 era" together with five flagship initiatives in critical areas. EURATEX's plan requires considerable resources and a coherent set of measures, both on short term and on a structural basis. While the European Commission and Member States already put in place some quick recovery moves, such as the re-opening of shops and companies and the guarantee of well-functioning markets and supply chains, it is now time to define the long-term vision. Europe should endorse the strategic importance of the European T&A sector, promote the development of an integrated ecosystem with the EU and its neighboring countries, invest on innovation and skills, and turn circularity into a source of competitiveness. The "EU Next Generation" package can play an important role and support the textile and clothing industry in its renaissance", said Alberto Paccanelli, who was re-elected EURATEX President.

[www.euratex.eu](http://www.euratex.eu)

#Association #Textile Machinery

## **ERNESTO MAURER NEW PRESIDENT OF CEMATEX**



© 2020 CEMATEX

Ernesto Maurer has been appointed as the new President of Cematex, the European Committee of Textile Machinery Manufacturers. His four-year term of office will cover three major events in the pivotal ITMA series of textile technology exhibitions scheduled for Europe and Asia. Over the next four years, Ernesto Maurer will lead Cematex through a challenging period. Says Maurer: "The Post-Covid-19 period will have a tremendous impact on the textile industry of today and tomorrow. Cematex is determined to maintain its leadership role for exhibitions, carrying the ITMA brand to partners worldwide today and in the future, including a focus on increasingly-digital opportunities."

[www.cematex.com](http://www.cematex.com)

#Textile Machinery #Finishing

## **DR. RALPH MENNICKE NEW CEO OF LOEPFE BROTHERS**



© 2020 Loepfe Brothers

The Loepfe Board of Directors appointed Dr. Ralph Mennicke as CEO to lead the company and its subsidiaries. Ralph Mennicke is a Graduate of Technical University of Munich, University of York, Mannheim and ESSEC Business Schools. He holds an MSc and PhD in Physics and an Executive MBA. Previously, Ralph Mennicke has held positions as CEO, Deputy CEO, General Manager and Product Manager. Dr. Mennicke says: "Despite the current difficult business environment as I begin my role as CEO of Loepfe, my commitment to taking our business and our people on a journey where we will seek to grow and grasp future upsides has never been greater."

[www.loepfe.com](http://www.loepfe.com)

# PEOPLE

#Textile Machinery #Weaving

**UGO GHILARDI NEW ITEMA GROUP  
CHIEF EXECUTIVE OFFICER**



© 2020 Itema Group

Itema Group, multinational group part of the Radici world of companies manufacturing advanced weaving solutions, announced that its Board of Directors has named Ugo Ghilardi, effective March 2, 2020, as CEO. Ugo Ghilardi, who has taken over from Carlo Rogora, during his remarkable professional experience held positions of increasing responsibility in leading companies in the mechanical and automation industries. Mr. Ghilardi, in fact, boasts a long career in DMG Mori where he held a variety of senior management positions, including Divisional Board Member Sales & Service EMEA, Chief Operating Officer EMEA (Europe, Middle East, Africa) and DMG Mori Europe CEO.

[www.itemagroup.com](http://www.itemagroup.com)

#Textile Machinery #Finishing

**DR. HEIKE WENZEL NEW MAHLO  
ADVISORY BOARD MEMBER**



© 2020 Mahlo

Dr. Heike Wenzel has been a member of the advisory board of Mahlo GmbH + Co KG. With her, the machine builder from Saal could win an experienced partner from the industrial sector. The entrepreneur from Wiesthal succeeds Fritz P. Mayer, who is retiring from his position. Dr. Heike Wenzel acts as managing associate of Wenzel Group, a leading supplier of measurement technology. She is married, mother of two children and is a volunteer at the IHK Aschaffenburg, currently as Vice President. Mahlo-owner Ralph Greenwood-Mahlo is looking forward to working with her. „Dr. Wenzel brings a lot of experience in the field of sensor technology from her own company“, he said.

[www.mahlo.com](http://www.mahlo.com)

#Digital Printing

**DOUG EDWARDS JOINS EFI AS  
CHIEF TECHNOLOGY OFFICER**



© 2019 EFI

Electronics For Imaging has named veteran print technology executive Dr. Douglas Edwards as its Chief Technology Officer (CTO). Edwards replaces longtime technology leader Ghilad Dziesietnik, who recently retired after nearly 25 years with EFI – the last 14 as CTO. Edwards, who assumes his new duties today, has had an extensive career as a senior print executive and R&D technologist. Immediately prior to this appointment, Edwards was CEO of Cambridge, England-based Xaar plc, a leading developer of inkjet print head technologies for industrial printing. Edwards has a Bachelor of Science in chemistry and a Ph.D. in conducting organic materials – both from London University.

[www.efi.com](http://www.efi.com)

#Composites #Carbon

**DR. TORSTEN DERR NEW CEO  
OF SGL CARBON**



© 2020 SGL Carbon

The Supervisory Board of SGL Carbon SE appointed Dr. Torsten Derr as Chief Executive Officer of SGL Carbon SE for the duration of five years effective July 1, 2020. With this appointment, he is succeeding Dr. Jürgen Köhler, who resigned from his mandate as CEO of SGL Carbon SE effective August 31, 2019. Since 2016, Dr. Torsten Derr is holding the position of Managing Director of SALTIGO GmbH, a subsidiary of LANXESS AG. Following his master degree and attainment of his PhD in chemistry at the University of Bremen, Dr. Derr began his professional career 1997 at Bayer AG, and since 2003 at LANXESS AG. He will assume his position already on June 1, 2020.

[www.sglcarbon.com](http://www.sglcarbon.com)

# PEOPLE

#Textile Chemistry

## **HEIKE VAN DE KERKHOF NEW ARCHROMA CEO**



© 2020 Archroma

The Board of Directors of Archroma has appointed Heike van de Kerkhof to succeed current CEO Alexander Wessels effective January 6, 2020. Mr. Wessels has held the CEO position at Archroma since the Company was established in October 2013 and will be appointed as Vice Chairman of the Company's Board of Directors. Ms. van de Kerkhof joins Archroma from Castrol, the leading branded lubricant division of BP plc where she held the role of Vice President, Western Hemisphere, and was responsible for a business generating USD 2+ billion in annual revenues and having approximately 2,000 employees. Prior, she held a variety of business leadership, commercial and operations roles.

[www.archroma.com](http://www.archroma.com)

#Textile Machinery #Finishing

## **BALDWIN TECHNOLOGY APPOINTS JOE KLINE AS NEW PRESIDENT AND CEO**



© 2020 Baldwin

The leadership team of Baldwin Technology has appointed Joe Kline as its new President and CEO, effective January 17, 2020. Former CEO Kyle Chapman will continue as Baldwin's Chairman, and devote greater focus to BW Forsyth Partners' rapidly expanding portfolio. Prior to joining Baldwin, Kline served as the president of a division in Eaton's electrical sector. In addition, his previous experience includes commercial leadership roles at Eaton, Duke Manufacturing and Emerson. He holds a bachelor's degree in electrical engineering from Ohio University and a Master of Business Administration in international business from Saint Louis University.

[www.baldwintech.com](http://www.baldwintech.com)

#Yarn #Nylon

## **YVES BONTE NEW CEO AND CHAIR- MAN OF DOMO CHEMICALS**



© 2020 DOMO

The Board of Directors of DOMO has appointed Yves Bonte to succeed Alex Segers during February, 2020. Mr. Segers had held the CEO position at DOMO since the Company started its chemical activities in 1994 and has continued to play a key role in the transformation of Solvay's European Performance Polyamide and DOMO into one company. Yves Bonte joined DOMO from Yara, where he held the role of Executive Vice President Industrial recently named New Business since January 2010, and was responsible for a business generating appr. 20% of Yara's total revenue of 12.9 bn USD. Since 2018 Yves is as Board Member of DOMO.

[www.domochemicals.com](http://www.domochemicals.com)

#Association #Textile Machinery

## **CORNELIA BUCHWALDER PERMANENT CEMATEX SECRETARY GENERAL**



© 2019 CEMATEx

A new Secretary General has been chosen by CemateX, the European Committee of Textile Machinery Manufacturers. Cornelia Buchwalder has served on an interim basis since June 2019, following the retirement of Maria Avery, and was elected to the permanent position by the CemateX Board on March 12. Buchwalder has a wide knowledge of the global textile equipment sector, having managed the Swiss Textile Machinery Association since 2013 and been closely involved in organising participation at the major global trade shows and various international events. She will continue to combine the two posts as Secretary General of both Swiss Textile Machinery and of CemateX.

[www.cematex.com](http://www.cematex.com)

#3D Printing #Filament

## **FUNCTIONALIZED FILAMENTS FOR 3D PRINTING ON TEXTILE**

Additive manufacturing (3D printing) offers growing potential in numerous industries and, with its many advantages, is also becoming increasingly interesting for the textile sector. The Saxon Textile Research Institute (STFI) has successfully carried out a research project with the aim of developing specially functionalized filaments for 3D printing on textiles. The most suitable polymer turned out to be a thermoplastic polyurethane. The filaments made from it were printed on fabrics, knitted fabrics, warp knitted fabrics and spunbonded nonwovens made of polyester, cotton and polyamide. Soft, stretchy, abrasion-resistant, adhesive and permanent kink-resistant prints or partial coatings are achieved. By incorporating additives, it is possible to implement various special functions (microbicidal effect, flame protection, optical effects).



Project demonstrators © STFI

The industrial feasibility could be demonstrated in the form of two types of demonstrators: "3D-printed gloves" and "knee pads". [www.stfi.de](http://www.stfi.de)

#Fiber #Cellulose #Hemp #Spinning

## **AWARD FOR INNOVATIVE CELLULOSE TEXTILES MADE FROM ORGANICALLY GROWN HEMP**

The "Hemp Product of the Year" innovation award honors marketable applications and products based on industrial hemp. This year's winners were selected online at the 17th EIHA Hemp Conference from June 16-17, 2020. The knitted fabric Lyohemp™, in whose development the STFI played a key role, took 3rd place. Lyohemp™ knitwear is made from an innovative cellulose fiber based on cellulose from certified organic hemp. Pulp and fibers are the result of a joint research and development project by German and Czech partners within the ZIM-NEMO networks NaFaTech and Hanflyocell. The pulp was processed in such a way that a high proportion of alpha-cellulose with a very low concentration of inorganic impurities was created. Finally, the novel pulp was converted into Lyocell-type fibers by dry-wet spinning using NMMO as a recoverable solvent. As a partner of this cooperation, the STFI was responsible for the yarn and surface development.

[www.stfi.de](http://www.stfi.de)

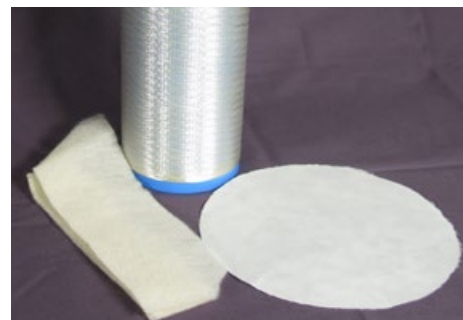


Lyohemp™ Knitwear © STFI

#Fiber #Cellulose #Chitin

## **DITF DEVELOPS NEW MATERIALS FOR MEDICAL TECHNOLOGY**

When mentioning chitin, many people first think of insects or crustaceans. However, the sugar, which is widely used in animal shells in nature, could soon be used in medicine, for example in wound dressing materials. This can be realized by a new method developed by researchers at the German Institutes of Textile and Fiber Research (DITF).



Fibers and textiles made of cellulose-chitin. © Photo: DITF

The production process of the new fiber is based on the application of ionic liquids. "We have chosen our ionic liquid solvent in that way that it is equally suitable for processing of cellulose and chitin. For the first time, it is possible to process these raw materials into fibers in a single process step," explains DITF scientist Antje Ota. Ionic liquids (ILs) are salts that are already liquid at temperatures below 100 degrees centigrade and can dissolve many polymers, including the long-chain polysaccharides of chitin. In the DITF process, the chitin content of the biodegradable fibers reached up to 50%. A further advantage: the water retention capacity increased by 20% to 60% compared to pure cellulose fibers. After cellulose, chitin is the second most common biopolymer worldwide.

[www.ditf.de](http://www.ditf.de)

#FRP #Single-component system

## **LATENT EPOXY SYSTEMS FOR FIBER-REINFORCED PLASTICS**

The special properties of FRP have so far been offset by relatively high production costs due to the complex manufacturing processes involved. The DITF are developing resin systems that significantly reduce the previously high expenditure in process technology and enable cost-effective production.

[www.ditf.de](http://www.ditf.de)



First anti-NOx textile facade on the ECE building  
© ITA / Jan Serode

#Coating #Sustainability #Recycling

## **FIRST ANTI-NOX TEXTILE FACADE ON THE ECE BUILDING IN HAMBURG, GERMANY, ENABLES NITROGEN OXIDE REDUCTION**

On 5 February 2020, the Senator of Finance of Hamburg, Dr Andreas Dressel, inaugurated the first anti-NOx textile facade on an office building of the company ECE Europa Bau- und Projektmanagement GmbH in Hamburg, Germany. The innovative facade system is a light and transparent textile facade developed by the RWTH Aachen University in cooperation with the companies ECE, Hamburg, and INOK GmbH, Willich, Germany.

The researchers achieved the reduction of harmful nitrogen oxides (NO and NO<sub>2</sub>) by means of an innovative facade coating. The coating acts as a catalyst and binds the harmful nitrogen oxides from the city air directly to the facade surface under UV light. Oxidation processes convert the pollutants into small quantities of harmless salts.

[www.ita.rwth-aachen.de](http://www.ita.rwth-aachen.de)

#Spinning #FRC

## **THREE SCIENTISTS FROM ITA WIN NUK BUSINESS PLAN COMPETITION**

The ITA scientists Dr Robert Brüll, Alexander Lükling and Richard Haas (from left to right) won first prize in the 24th NUK Business Plan Competition with „FibreCoat“ on May 6. The ITA team is happy to receive prize money of 7,500 Euros. Due to Corona, the award ceremony took place in the context of a live event from Cologne transmitted via YouTube.



The ITA scientists Dr Robert Brüll, Alexander Lükling und Richard Haas (from left to right) Copyright: © 2020 ITA

NUK patron Professor Dr Andreas Pinkwart, NRW Minister for Economic Affairs, Innovation, Digitalisation and Energy, highlighted the importance of that event for other founders and delivered a laudatory speech for the winning team. „FibreCoat“ uses a high-speed fibre spinning system to produce a high-performance fibre reinforced composite at very low cost, outperforming its competitors and creating sustainable mobility. The „high-performance fibre reinforced composite“ material class can be used in a wide range of new applications and supports society on a path to sustainable mobility. The jury's verdict is: „This raw product could act as a real „Gamechanger“ reaching a large number of markets and customers.“

[www.ita.rwth-aachen.de](http://www.ita.rwth-aachen.de)

#Conference #Germany

## **DFG FUNDS CRC/TRANSREGIO ON CARBON REINFORCED CONCRETE**

On 29 May, the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) decided to fund the Collaborative Research Centre (CRC)/Transregio 280 „Carbon reinforced concrete“ at Technische Universität Dresden, short TUD, and RWTH Aachen University with the participation of the Institut für Textiltechnik, short ITA, with 12 million euros over the next four years.

The CRC/Transregio 280 „Design Strategies for Material-Minimised Carbon Reinforced Concrete Structures...“ breaks with the traditional way of designing reinforced concrete plants. The interdependence of reinforcement and matrix is being investigated in depth and a completely new design and construction strategy for building with carbon reinforced concrete is being developed.

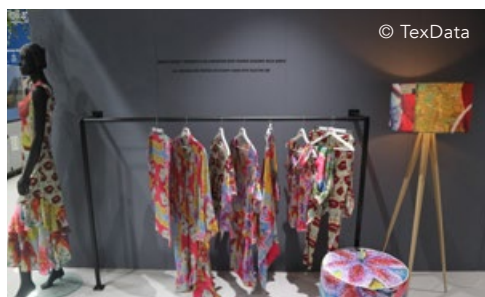
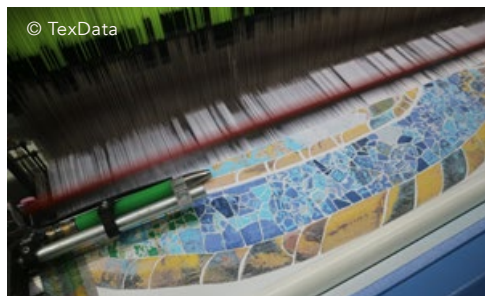
[www.ita.rwth-aachen.de](http://www.ita.rwth-aachen.de)



Carbon reinforced concrete today: thin-walled curved barrel shells as roof elements at ITA © ITA Aachen

## **FIGHT AGAINST COVID-19**

ITA is now testing textiles from various manufacturers for their suitability for protective masks. In addition to the filter effect, the permeability for aerosols, the textile structure, availability and costs are also being tested. The aim is to find alternative filter materials very quickly, which can help to solve the current bottlenecks in effective mask materials. In addition, alternative mask and respiratory protection concepts are being developed. Textiles that you provide them with will be tested at cost price. [www.ita.rwth-aachen.de](http://www.ita.rwth-aachen.de)



## NEXT ISSUE:

# COVID-19: THE RESTART OF THE TEXTILE INDUSTRY

### ANTIVIRUS CLOTHING:

Will that add value and what solutions does textile chemistry offer?

The latest in medical textiles and masks

### SPECIAL: Denim

### SPECIAL: Digital Printing

Are virtual trade fairs a future?

### #FUNCTIONAL TEXTILES

### #UPDATE: Biodegradable yarns

### #INTERVIEWS

New technologies from ITA Aachen

New materials

**TEXDATA**  
INTERNATIONAL