SNW
SUSTAINABLE NONWOVENS
April / May 2021

At the finishing line

Coating technology adds value to the nonwovens sector

Digital demand
Enhancing the supply chain

All change
Spunbond sector latest

Precision pays
Automation for facemask production

Technical Innovation and Industry Best Practice

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Drive and durability

The latest statistics from EDANA show that the production of nonwovens in Greater Europe grew by 7.2% in 2020 to reach 3,075,615 tonnes (and 85.9 billion square metres) with a total estimated turnover of €9,555 million.

These new figures will be warmly welcomed by the industry, especially when you consider that this latest market survey took place during a period of unprecedented change with the entire supply chain having to adapt to the wide-ranging impact of the coronavirus and all of the negative connotations that it brought with it.

There is clear evidence, therefore, of a robust supply chain and an industry more than capable of responding quickly and decisively to the extraordinary and exceptional circumstances that the world suddenly found itself living under for the bulk of the 12 months under review.

A key driver behind this growth is the clamour for materials used to fight the pandemic. The figures show that spunmelt and drylaid-hydroentangled nonwovens witnessed two-digit growth rates in both weight and surface area while, thanks to the development in similar applications, the growth in the Wetlaid nonwovens was also substantial.

As we see in the feature on page 22, significant change has taken place in investments in new manufacturing capacity for spunmelt nonwovens since the first few months of 2020. Principally, over the past 12 months, somewhere in the region of 150 new stand-alone meltblown lines are reported to have been installed or are currently being delivered or commissioned across the world with Europe accounting for a significant number of these as the region established near-shore manufacturing and related supply chains.

Overall, the EU production of facemasks increased twenty-fold by November 2020 compared to pre-crisis times with EU-based producers now able to make the equivalent of 1.5 billion three-layer masks a month. A remarkable figure.

Demand has also come from the use of spunbonding and meltblowing processes for absorbent hygiene applications – baby diapers, femcare and adult incontinence products – as well as medical products. In fact, the EDANA report shows that the main end-use for nonwovens remained the hygiene market with a 28% share of deliveries, amounting to 857,940 tonnes, a 9.6% growth in 2020. Unsurprisingly, the most significant growth areas for nonwovens in 2020 were observed in medical (+118.0%) and wipes/personal wipes (+22.0%) followed by garments (+32.6 %).

It is noted by EDANA that these rapid growth areas were offset to a degree by declines in sector that have suffered a major hit and demand slowdown as a result of the pandemic. The most notable of these has been in automotive interiors (down 23%) and items mostly dependent on the hospitality sector such as table linen and other related products.

As, hopefully, these different sectors begin to emerge from their prolonged shutdowns in 2021, we can perhaps expect a degree of recovery by the end of the year, potentially contributing to another vibrant year for the nonwovens industry in 2021.

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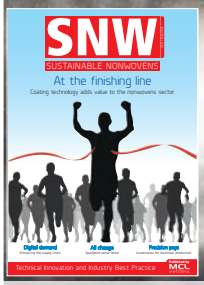

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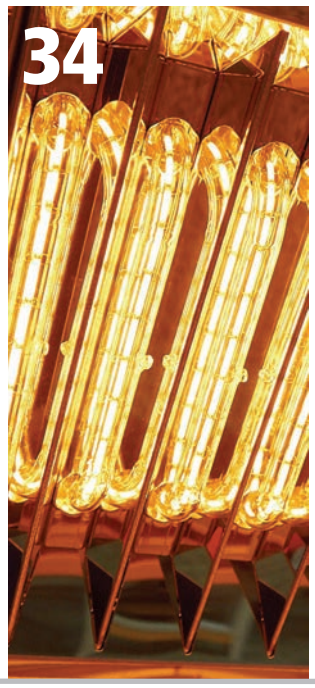
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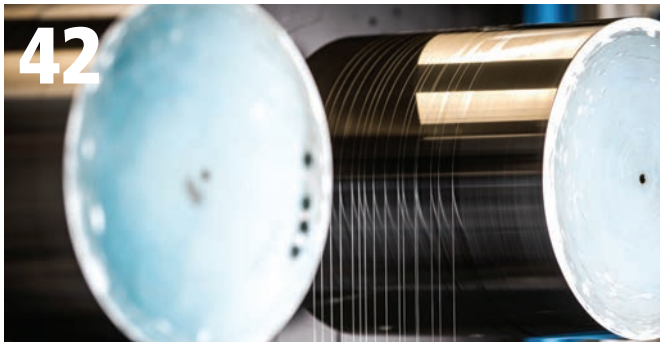
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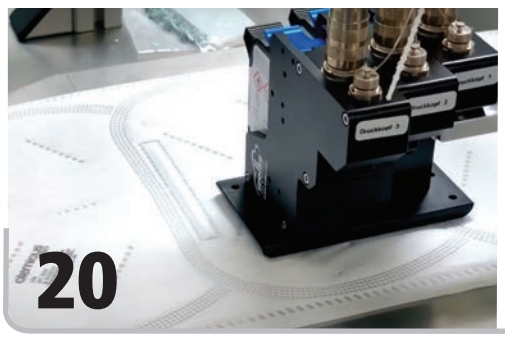
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NONWOVENS NEWS

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World of Wipes returns as in-person event

CARY - Making and renewing connections in-person will be a key theme when INDA, the Association of the Nonwoven Fabrics Industry, holds its 15th annual World of Wipes (WOW) International Conference as a live event July 12-15 at the Atlanta Marriott Marquis, Georgia.

With COVID-safety measures in place and the outlook looking positive for this summer, INDA is enthusiastic about reopening the doors at WOW for wipes industry product managers, buyers and suppliers to meet after moving to a virtual format last year due to the pandemic. To register, visit the World of Wipes® International Conference event page.

"We are hearing a lot of pent-up demand from the industry for renewing in-person contacts and meetings. WOW 2021 will bring back all of the content, excitement and sizzle that WOW always delivers, and do it in a safe environment," said Dave Rousse, INDA President.

INDA stated its commitment to participant safety and adherence to all CDC and local protocols and guidelines. Facemasks, hand sanitizer, and wipes will be available at WOW 2021.

The conference program also will be recorded and available

INDEX postponed until October 2021

GENEVA - EDANA, organisers of the flagship INDEX exhibition have postponed this September's edition by a few weeks to October 19-22. The autumn show will also feature a brand new virtual platform, which will enable the over 14,000 exhibitors and visitors to interact directly if they so wish, extending the event's reach both in terms of geography and applications,

The postponement follows the on-going travel restrictions and unforeseen delays in vaccination programs, compelling organisers to recognise that the lifting of the Swiss federal governmental restrictions regarding sizeable gatherings of people and a consequent return to normal business, may take a little longer than anticipated.

To ensure that INDEX 20 has every opportunity of taking place this year, the co-organisers, PALEXPO and EDANA, are confident that the new measures will guarantee the widest possible visibility and participation for all. "As a major international event in the nonwovens calendar, the organisers feel they must take advantage of every possibility of maximising visitor attendance and ROI for exhibitors," EDANA said. "Delaying the event for an additional six weeks will increase the opportunities for a broader range of participants to attend INDEX 20 in person. Naturally, the strictest health protocols will be applied and rigorously observed at the event, to ensure the best conditions are in place for conducting business safely."

The comprehensive virtual platform is described as an exciting digital tool that will enable exhibitors and visitors to interact directly if they so wish, extend the event's reach both in terms of geography and applications, and provide live and on-demand product content and information. A data-driven matchmaking facility will assist participants in contacting and networking with like-minded attendees in their particular sector.

Web: www.edana.org

for purchase on-demand for those who cannot attend, providing both options for participants to get the full, dynamic WOW program experience.

Coming off a year of significant change for the industry and the wipes sector, WOW will explore wipes and the growing plastics debate, new directions in sustainability, the explosive growth in cleaning brought on by COVID-19, emerging markets, regulatory changes and more.

This year's event will open with a day and a half devoted to the WIPES Academy training and a Welcome Reception onsite. WOW will feature three days of cutting-edge conference program content, two days of tabletop displays, plus presentations from the three finalists and the announcement of the 2021 World of Wipes Innovation Award as its finale.

The program also includes over 11 hours of face-to-face networking time to form new relationships and strengthen existing bonds over breakfasts and session breaks, the Welcome Reception, and other events to connect with industry peers.

The first session of presentations on July 13th will focus on the very important conversation on issues related to new European Union (EU) regulations on single-use plastics and their impact on the North American wipes market.

Experts providing the latest insights on this vital topic include Anna Gergely, Ph.D., Director – EHS Regulatory, Steptoe & Johnson LLP, who will speak on Recent Developments Under the EU Green Deal and Plastics Strategy – Update on the Impact of the Pandemic.

Providing the perspective on the proposed Canadian plastic regulatory approach will be Karyn Schmidt, Senior Director, Chemical Regulation, Regulatory and Technical Affairs, American Chemistry Council (ACC) while Andrew Hackman, Principal Lobbyist, Serlin Haley, will talk about plastic policies in the various states within the U.S.

For the full program details and list of speakers, visit the WOW 2021 website.

Web: www.worldofwipes.org

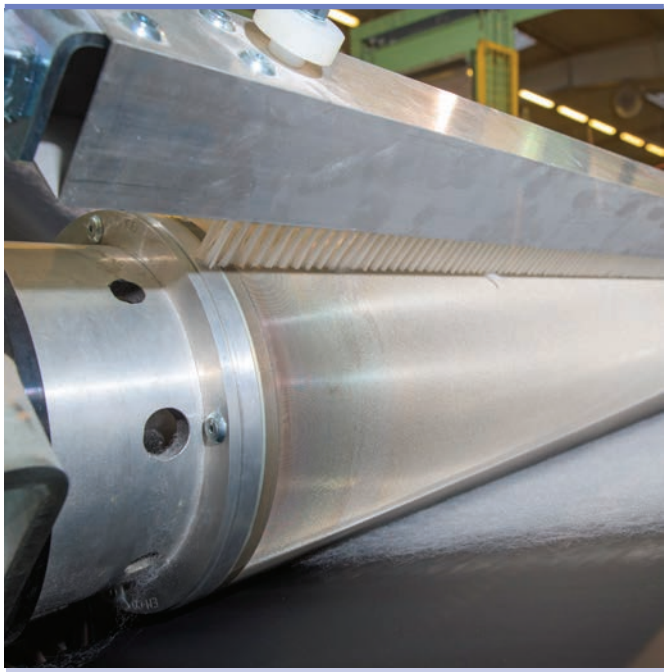
Donaldson expands iCue connected filtration

MINNEAPOLIS – Donaldson is adding new capabilities and user experience updates to the its iCue connected filtration service, which enables facility teams to closely track collector performance and respond in real-time to maintenance notifications.

Based on customer feedback, Donaldson has made several iCue service updates to continue improving and streamlining functionality for manufacturing facilities around the world.

They include:

- A particulate monitoring sensor which continuously tracks particulate material levels in the outlet stack of collectors, so maintenance teams can more accurately monitor and assess the air quality in their plants.
- Pulse-jet cleaning valves to detect when a valve is not fully functioning and send a notification for filter performance to be assessed.



Andritz to supply needlepunch lines to Chinese firm

GRAZ - International technology Group Andritz has received an order to supply four new needlepunch lines for nonwoven production from Chongqing Double Elephant Microfiber Material Co., Ltd., China. The lines are scheduled for installation and start-up in the fourth quarter of 2021.

The needlepunch lines by Andritz are designed to process islands-in-the-sea fibres dedicated mainly to the production of high-quality synthetic leather products. Once completed, the lines will produce 30 million metres a year of microfiber nonwoven materials.

The production lines are equipped with an Andritz carding machine and the newly developed Profile crosslapper as well as the advanced-technology ProWid closed-loop system from Andritz. The system can monitor the weight uniformity (CV%) of the entire product online and predict the weight distribution changes caused by the bonding process. In addition, the web weight can be reduced by controlled stretching, which solves the issue of fibre accumulation at the edges caused by traditional crosslapping methods. Both the weight and the uniformity of the product can be automatically adjusted via the closed-loop function as set on the Andritz gauge.

Andritz has also received an order from Pureko Sp to supply a needlepunch line for their plant in Myszków, Poland. The line will process recycling fibres from garment waste for the production of technical felts dedicated to furniture and geotextile applications.

The final products will have fabric weights ranging from 300 to 500 gsm, and the production capacity will be up to 750 kg/h. Installation and start-up are scheduled for the third quarter of 2021.

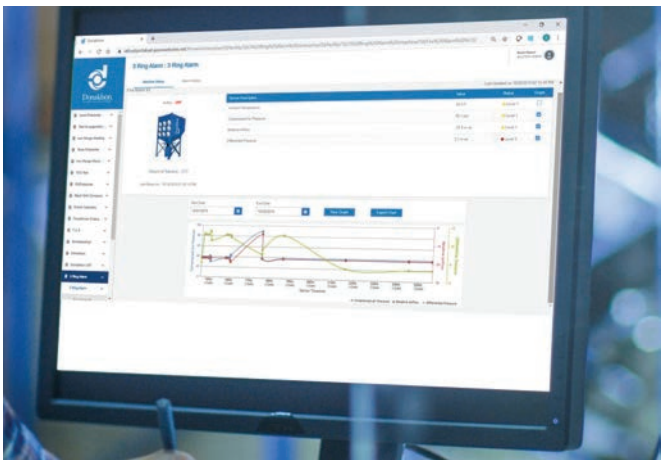
The Andritz scope of supply includes a complete neXline needlepunch eXcelle line – from web forming to needling – as well as engineering and the scanning gauge.

- Partner Vie which allows iCue service subscribers to give third-party, certified dealers and service centres access to their dashboard when collector maintenance or repair questions arise.

"Dust collection is a critical component of any manufacturing operation and we continue enhancing our iCue service to meet expanding customer needs," said Wade Wessels, global director of connected solutions for Donaldson. "Facility teams can count on the iCue service to deliver timely data and insights to efficiently maintain equipment, comply with regulations, address issues before they escalate and save valuable time and money."

The updated particulate monitoring sensor makes it easier for manufacturing environmental health and safety teams to improve compliance tracking and validation and maintenance teams to quickly determine if any filters are damaged or installed improperly.

The pulse-jet filter cleaning system helps maximise filter lifespan in an industrial collector. The iCue service can now accurately detect when a pulse-jet valve is not working properly, which can lead to a decrease in filter life, a



compressed air leak and an increase in facility energy consumption. By proactively managing filter health, filter life and other operational benefits increase.

In addition, the iCue service is more user-friendly, thanks to a new Partner View feature.

The iCue connected filtration service is compatible with all brands of industrial collectors, including those that operate with a positive air pressure system. It is also simple to install – a compact gateway box is fastened to the outside of a facility collector and IoT technology and secure cloud communications run the service. An annual subscription includes hardware, automated reports, real-time maintenance alerts and a web-based dashboard that displays new and historical data.

Berry to increase European capacity

EVANSVILLE - Berry Global is to install a new spunlace line in Europe as it looks to ramp up its production of biodegradable and recycled nonwoven fabrics for the industrial wipes sector.

The investment will increase Berry's production footprint in support of its global customers, with total investments reaching over US$110 million in nonwoven materials for products such as hard surface disinfectant wipes.

Prior to the demand surge of 2020, the European impregnated wet wipes segment, for home cleaning and disinfecting, was growing at the rate of 5% in the 2014 to 2019 time frame. As the company notes, COVID-19 has increased heightened focus on sanitation and personal hygiene for infection prevention, suggesting permanent consumer trends away from the chore of cleaning to a health and safety priority.

"We strategically partner with many of the world's leading brands with wipe materials, ensuring our investments align with demand for today and for the future," said Curt Begle, President of Berry's Health, Hygiene, and Specialties Division. "The reliability of our capacity and scale are paramount to our customer support and the trusted relationships we desire to maintain."

This new asset will add to the company's existing Spunlace platform, further expanding its sustainable wipes portfolio. Recognizing its customers' ongoing environmental sustainability goals, the new asset will incorporate the production of biodegradable or recycled nonwoven substrates, increasing Berry's capacity in Europe by more than 300 million square meters. The new line is expected to be commercially available in the September quarter of 2022.

"This multimillion-dollar investment further completes our industry-leading portfolio. Through flexible assets such as this installation in Europe, we can better serve our customers with reliable, sustainable solutions for the wipes market," added Achim Schalk, EVP and General Manager, EMEIA for Berry's Health, Hygiene, and Specialties Division.

Shemesh to unveil new turnkey filling line

LONDON - Shemesh Automation is to to unveil a total turnkey filling line solution in a US$4 million investment including a new US showroom and a Spares inventory.

The new, 200ppm technology will be demonstrated to selected market participants in the new North American Shemesh facility during the second half of 2021.

Building on decades of perfecting existing technologies pertinent to the new line, the announcement comes as a response to increased demand and market trends, partially set by the COVID-19 pandemic. The news from Shemesh is seen as another milestone in cementing the brand as a global leader in the canister wipes packaging machinery arena.

The all-new total solution canister wipes platform, dubbed TKS-200, is an extension of the empirically proven TKS-60 and TKS-120 models. The TKS-200 is designed to run at a consistent speed of 200ppm and a maximum speed of 220-240ppm. It has been decided to not allow for the TKS-200 sale to potential interested parties before the new technology has been demonstrated to a selected group of key industry players. Such demonstrations are envisaged to take place at the all-new US-based Shemesh headquarters in the second half of 2021.

Canister wipes lines are much more sophisticated compared with lines built for other traditional market sectors such as Food

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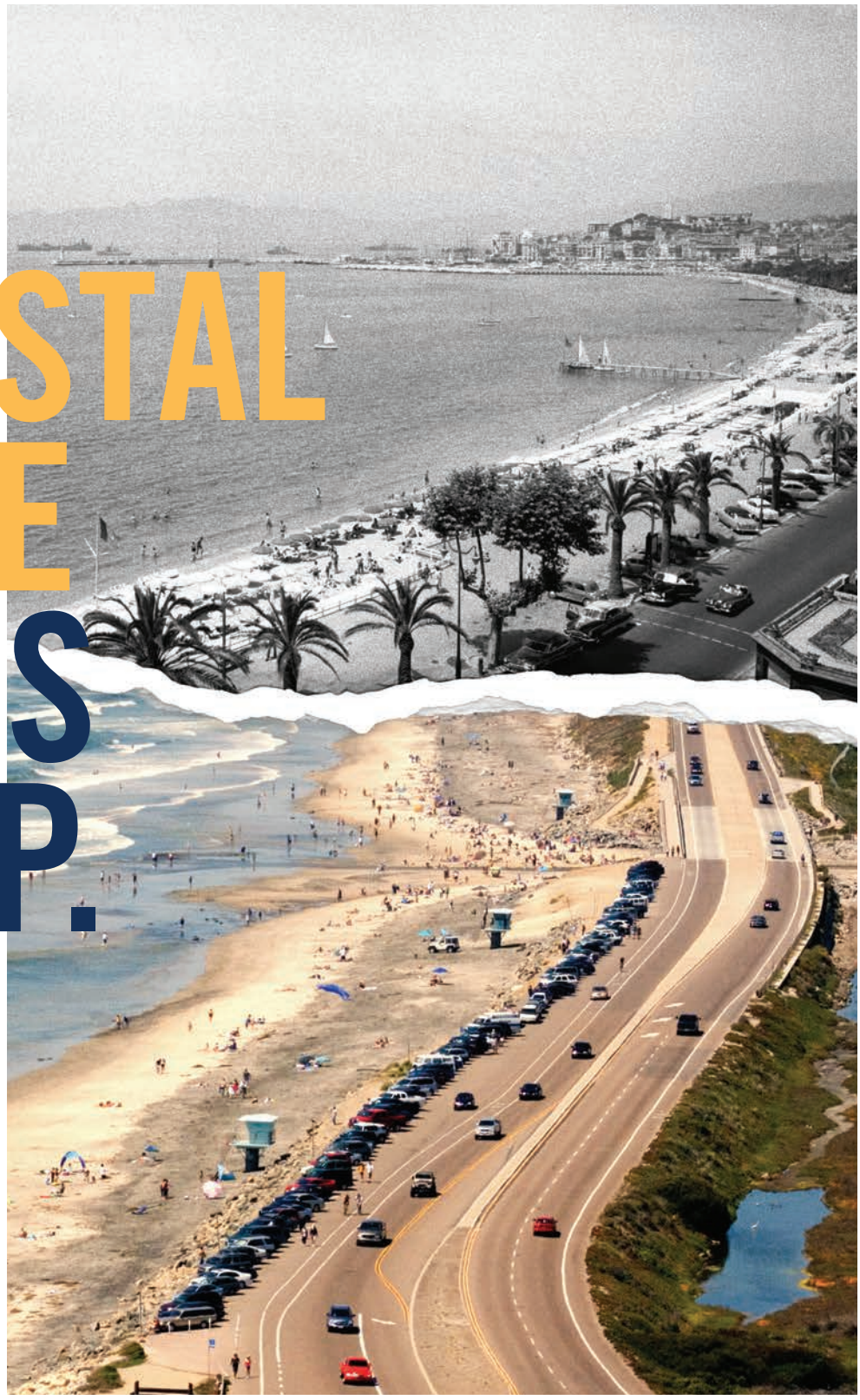

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& Bev or Cosmetics in which Shemesh also operates. That is partially because such pharma-grade lines involve high speed liquid filling in containers with elastic solids in them (the round nonwovens) combined with other complex technologies unique for canister wipes lines as automatically stuffing rolls (the round nonwovens) into cans in high speeds. This often happens while simultaneously dealing with alcohol-based solutions as well as in a potentially corrosive environment.

Shai Shemesh, Shemesh Automation's CEO said the company had been working tirelessly over the last few decades to optimize its machinery and perfect its total turnkey solution for the canister wipes industry. "I am so proud of what we have managed to achieve with the ground-breaking TKS-200 total turnkey solution," Shemesh said. "Indeed, we know of no other company on a global scale with such deep, vertical know-how in such different technologies as Liquid Filling, Round Wipes Rolls Stuffing, Conduction Sealing, Capping, Labelling, and Case Packing – the core technologies underlying the Shemesh great value proposition catered to our customer base.

"As the only company in the world capable of offering a true canister wipes outfit from product feed all the way to a packed case with equipment built under just one umbrella - the edge we provide at Shemesh to our customers is immense."

Mark Calliari, Shemesh's Director of North America Operations, added: "Following the great success we've had in the market with the TKS-60 and predominantly the TKS-120, I could not be more excited about this new development. I'm sure the new TKS-200 will make a great impact on the market as it not only offers a higher speed, but also better than ever consistency in production, accuracy and user satisfaction. The new TKS-200 from Shemesh and the substantial investment made into a new US-based showroom and spares inventory demonstrates once again our strong commitment to the industry, our customers and to the US market."

Web: www.sawetwipes.com

Wolf PVG installs Oerlikon meltblown line

NEUMÜNSTER – Oerlikon Nonwoven has installed a double-beam meltblown plant equipped with the ecuTEC+ electro charging unit at German nonwovens manufacturer Wolf PVG.

With the new line, the Spenge-based company, traditionally known for supplying vacuum cleaner and other industrial filtration products, will now be supplying nonwovens for the production of surgical and FFP2 masks.

Following the spread of the coronavirus pandemic and the subsequent shortage of protective masks that ensued, Wolf PVG, a wholly-owned subsidiary of the Melitta Group, switched part of its production capacities to nonwoven mask fabric production. The plant, with its two beams and the ecuTEC+ electro charging unit, is now optimally designed for the production of face mask material, the company said, adding that the line will also be used to produce high-quality meltblown nonwovens for medical and industrial filter applications.

"A decisive point for investing in a plant from Oerlikon Nonwoven was the flexibility of the plant in relation to the possible product portfolio and the competence of the manufacturer," explained Markus Seele, COO of Wolf PVG.

Oerlikon's ecuTEC+ electro charging unit allows spunbond and meltblown materials to be charged electrostatically, significantly increasing the filter performance. The system also allows nonwoven manufacturers to select and set the optimal charging method and intensity for their chosen filter application.

"Thanks to the numerous setting options for the electrostatic charge provided by the ecuTEC+, the optimum loading status can be set depending on the filter application," added Dr. Ingo Mählmann, senior vice president Sales & Marketing Oerlikon Nonwoven.

Mask waste for new road construction

MELBOURNE – In a potential solution to pandemic-generated waste, researchers at RMIT University in Australia have developed a new road-making material from shredded single-use facemasks and processed building rubble.

Analysis shows the face masks help to add stiffness and strength to the material, which is designed to be used for the base layers of roads and pavements and meets civil engineering safety standards.

It is well known that the use of personal protective equipment (PPE) has increased dramatically during the Covid-19 pandemic, with an estimated 6.8 billion disposable face masks being used across the globe each day.

"Multidisciplinary and collaborative approaches are now needed to tackle the environmental impact of Covid-19, particularly the risks associated with the disposal of used PPE and our initial study looked at the feasibility of recycling single-use face masks into roads," said RMIT's Dr Mohammad Saberian. "We were thrilled to find it not only works, but also delivers real engineering benefits and we hope this opens the door for further research."

Roads are made of four layers – subgrade, base, sub-base and asphalt on top. All the layers must be both strong and flexible to withstand the pressures of heavy vehicles and prevent cracking.

Processed building rubble – known as recycled concrete aggregate (RCA) – can potentially be used on its own for the three base layers. But the researchers found adding shredded face masks to RCA enhances the material while simultaneously addressing environmental challenges on two fronts, namely PPE disposal and construction waste.

Construction, renovation and demolition account for about half the waste produced annually worldwide, and in Australia, about 3.15 million tons of RCA is added to stockpiles each year rather than being reused.

The study identified an optimal mixture – 1% shredded face masks to 99% RCA – that delivers on strength while maintaining good cohesion between the two materials. The mixture performs well when tested for stress, acid and water resistance, as well as strength, deformation and dynamic properties, meeting all the relevant civil engineering specifications.

While the experimental study was conducted with a small amount of unused surgical face masks, other research has investigated effective methods for disinfecting and sterilising used masks.

A comprehensive review of disinfection technologies found that 99.9% of viruses could be killed with a simple "microwave method", where masks are sprayed with an antiseptic solution then microwaved for one minute.

Web: www.rmit.edu.au

Fast Company recognition for Callaly

LONDON – Callaly – the creator of the award-winning Tampliner tampon, has been included on the Fast Company's list of the World's Most Innovative Companies for 2021.

The list honours businesses that have not only found a way to be resilient in the past year, but also turned those challenges into impact-making processes. It showcases businesses from 29 countries and Callaly was ranked number ten in the Design category.

"I couldn't be prouder of the whole Callaly team for this recognition," said Callaly co-founder and CEO Thang Vo-Ta. "Despite global challenges, this year has seen us reach some incredible milestones, from securing FDA clearance and exporting across Europe, to seeing our Tampliner – the first design upgrade to the tampon in 80 years – named one of TIME's Best Inventions of 2020. As a UK start-up, to be recognised on Fast Company's list alongside such incredible company is testament to the hard work and dedication from everyone here at Callaly and all those who helped us on our journey."

Tampliners and the company's panty liners, day pads and night pads are all made with 100% organic cotton and are free from dioxins, perfumes and pesticides.

Sustainable identity for Chargeurs interlinings

NEW YORK – Chargeurs PCC Fashion Technologies, the world's largest apparel interlinings manufacturer, has announced a new brand identity – Sustainable 360 – for its permanent line of nonwoven and woven interlinings launched just over a year ago.

The new name marks the collection's evolution into a stand-alone brand and reflects a full-circle commitment to sustainability and corporate social responsibility from the company.

Sustainable 360 will include new performance interlinings and linings, such as those made with Lainiere performance silver for antimicrobial and anti-odour protection.

The Sustainable 360 product line is the first complete collection of both interlinings and inner components such as shoulder pads, canvas chest pieces and undercollar felts made with eco-responsible materials, including BCI cotton, GRS-certified recycled polyester, hemp and recycled plastics.

Since its launch, the collection has seen widespread adoption by leading brands that include Adidas, J.Crew, Claudie Pierlot, Macy's, Maje, Madewell, PVH, Target and Uniqlo. Banana Republic Men's and Itochu are among the Chargeurs PCC customers that have also committed to creating whole ranges using Sustainable 360 interlinings exclusively in their products.

"Our sustainable collection has seen phenomenal growth since launching a year ago and based on that success, we designed the new Sustainable 360 brand identity to identify this as a permanent collection and more clearly convey to the market the breadth and benefits of our offering," said Audrey Petit, managing director of Chargeurs PCC Fashion Technologies."

The company has rolled out a series of innovations since initially launching the collection, including a line of circular-knit interlining products using a process patented by partner mill Weemeet that requires no water. The company is also creating coatings for products using recycled polyvinyl butyral (PVB), which is commonly used as a safety layer inside auto and building glass and then landfilled. At launch, the collection offered 50 items, but it has now expanded to include more than 250 articles. In addition, the company can now sustainably manufacture any base material in its catalogue of thousands of products, including nylon, polyester and cotton.

Web: www.chargeurs-pcc.com

Lyocell expansions in China for Sateri

SHANGHAI – Sateri, the world's largest producer of viscose fibre, is planning to expand its Lyocell production in China by up to 500,000 tons a year by 2025.

The first phase of this expansion kicked off recently with ground-breaking works for a new 100,000-ton facility in Changzhou, Jiangsu province. Another 100,000-ton facility will be built in Nantong, Jiangsu province later this year. The Changzhou Lyocell facility is expected to commence production in the third quarter of 2022 and will create more than 800 jobs.

Sateri's first foray into China's Lyocell market was in May 2020 when its 20,000-ton Lyocell production line in Rizhao, Shandong province commenced production. The same site houses a 5,000-ton pilot production line dedicated for the development of Lyocell application technology.

As a natural and biodegradable fibre, Sateri's Lyocell is made from wood pulp sourced from certified and sustainable plantations. It is manufactured using closed-loop technology, requiring minimal chemical input during the production process, and utilizing an organic solvent that can be almost fully recovered and recycled.

Sateri is the world's largest producer of viscose fibre for textiles, baby wipes and personal hygiene products. Its five mills in China collectively produce about 1.5 million tons of viscose fibre yearly and it also makes textile yarns and spunlace nonwoven fabrics.

Online shop for Freudenberg apparel fabrics

WEINHEIM - Freudenberg Performance Materials has launched an online shop for interlinings and paddings for the apparel industry.

Based on their individual fields of application, registered customers can use the shop to find information about Freudenberg's entire product offer, check availabilities, order samples and buy a comprehensive range of interlinings, tapes, canvas and preformed materials, linings and comfortemp thermal insulation.

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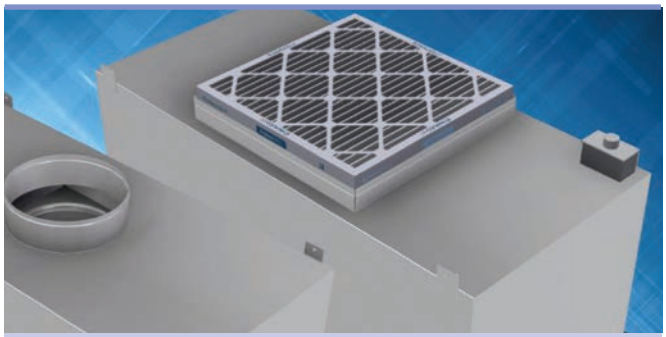
In total, customers can also choose from more than 2,000 different products ranging from bonding solutions up to the recycling range while a clear structure by groups makes finding the right product easier: ladies' and men's wear, sportswear, outdoor and work clothes, shirts, jeans and leather as well as special ranges for the production of accessories, for appliqués or embroidery.

In addition to their customer account for address and purchase order management, registered users have full access to detailed product information as well as technical data sheets in PDF format available for download.

The shop is also available without login – in catalogue format for full product search and information across the entire range. An application-oriented menu structure and detailed filter functions help customers during their search and guide them on their way to the selection of the desired product. Pictures with zoom function show the thickness, structure, strength and drape of the product and how it can be fused.

The Freudenberg Apparel Online Shop has been available since December 2020 for customers in Germany with a wider roll out now scheduled for April.

The online shop can be reached at https://shop.freudenberg-apparel.com



Mann+Hummel swoops for US filtration specialist

RALEIGH - The Mann+Hummel Group has announced its strategic investment in Pamlico Air, a US manufacturer and provider of high-quality air filter products, mainly for retail and wholesale applications. Pamlico Air will be part of the Mann+Hummel Group and complement the existing air filtration portfolio of its subsidiary Tri-Dim, which focuses primarily on the commercial and industrial air filtration aftermarket.

Kurk Wilks, president & CEO of the Mann+Hummel Group, said he believed Pamlico Air will be an ideal partner to propel the North American air filtration business. "By investing in Pamlico Air, we see a tremendous opportunity to accelerate the growth of our Life Sciences & Environment business unit.

"We highly value Pamlico Air's expertise and leadership in the area of retail and wholesale air filtration. As part of the Mann+Hummel Group, Pamlico Air will strengthen our filtration offering in the Aftermarket business as well as open up opportunities in the planning and specification phase of new installments."

Pamlico Air will continue to be led by Harry Smith and his management team. Mark King remains President of the Mann+Hummel subsidiary Tri-Dim Filter Corporation and will work closely with the Pamlico Air leadership team as one organization.

"This strategic partnership with Mann+Hummel enhances Pamlico Air's operational capabilities and gives us a significant stake in one of the most exciting segments of filtration," said Smith. "We see significant opportunities to drive value for Mann+Hummel's air filtration business in the region."

"We look forward to joining forces with the Pamlico Air team to expand our existing product portfolio in North America, and accelerate efforts in strategic business areas," King added. "Both companies share the same market understanding and value for our customers, which is why we see great growth opportunities ahead."

Culture shift for US Nonwovens

MELVILLE – Radienz Living is the new name being adopted by US Nonwovens – the leading North American manufacturer of home and personal care products for the private label and branded markets.

With more than 1,400 employees across nine locations in North America, the company manufactures a broad portfolio of products in the home and personal care categories, including disinfecting and antibacterial wipes, facial cleansers, baby wipes, fabric care, and unit dose solutions for laundry and auto dish.

It is a supplier to major retailers like Walmart and Walgreens, and to Fortune 500 and branded customers. It also manufactures and nationally distributes laundry brands, such as Ajax and Final Touch, and cleaning wipes, such as Redi Wipes.

"The new brand identity is more than a name change, it's a culture shift," said CEO Matt Stillings. "We are proud of the work we have done as US Nonwovens and view our rebranding not as an absolute departure from all that has been achieved under this name, but rather as an exciting next step in our journey as a company. We look forward to this new era."

US Nonwovens was established in 1995 as a manufacturer of dryer sheets. Since then, its manufacturing volume has grown substantially, and as Radienz Living it now produces more than five million bottles, packs and canisters of home and personal care products each week. Through these superior in-house capabilities led by experienced teams of industry experts, the Radienz Living rebrand aims to create customer partnerships made for life and reassure long-term clients of the brand's intentions.

The Radienz Living rebrand also marks a corporate unification. In 2019, Wind Point Partners, a Chicago-based private equity firm, acquired a controlling interest in US Nonwovens and subsequently invested more than $25 million in doubling its disinfectant wipes capacity and in a new state-of-the-art manufacturing and distribution centre in Pennsylvania. Later in 2019, it acquired Soluble Packaging Solutions (SPS), which is North America's largest independent manufacturer of unit dose packaging for dish, laundry and other categories.

Danimer doubles Nodax PHA capacity plans

BAINBRIDGE – Danimer Scientific has announced plans to double the anticipated capacity of its previously-announced greenfield Nodax PHA plant from 125 million to 250 million finished pounds – and based on current demand still expects that all capacity will be completely sold out.

Currently in the pre-construction engineering stage, the plant will now come online in two phases, with an initial three fermenters expected to be operational in mid-2023 and a second three in early 2024.

Danimer reported sales up 46% to $47.3 million in 2020, driven by stronger demand and additional PHA production capacity at its plant in Winchester, Kentucky, which only became operational at the start of the year.

"We are experiencing intense demand for our Nodax PHA which is translating into long-term commitments for our products," said CEO Stephen E. Croskrey. "Our facility expansions will further extend the reach of our biodegradable and compostable products and help our customers commitments to reducing plastic waste."

Nodax PHA was initially developed at Procter & Gamble and has many advantages as a new plastic, and not least for nonwoven products.

PHA is a bio-based and biodegradable aliphatic polyester made by the bacterial fermentation of renewable biomass, such as vegetable oils, sugars etc.

It shows rapid biodegradation under both aerobic and anaerobic conditions and has polyolefin-like thermo-mechanical properties in terms of strength, flexibility, ductility, toughness and elasticity, and polyester-like physical properties in terms of compatibility with additives and other fibres in polymer blends

Properly compounded Nodax resins can be spun into fibres in a manner very similar to polypropylene, to make totally bio and marine degradable nonwoven products.

Mitsui to sell Chinese nonwovens business

TOKYO - Mitsui Chemicals is to sell its 100% ownership of Mitsui Chemicals Nonwovens (Tianjin) Co to Nanhai Beautiful Nonwoven Co.

"This share transfer will see the Mitsui Chemicals Group concentrate its resources on two bases in Japan and Thailand," Mitsui Chemicals said in a statement. "In doing so, the group will look to further bolster its presence in the sanitary nonwovens markets of Japan and the ASEAN region," it said.

Nanhai Beautiful Nonwoven Co operates sixteen high-speed spunbond and spunmelt production lines, and one 7-metre SXMS Bicomponent nonwoven production line. It manufactures nonwoven fabrics from 100% virgin polypropylene chips for hygiene, medical, and industrial applications with an annual capacity of 100,000+ metric tons.

Financial details of the transfer were not disclosed.

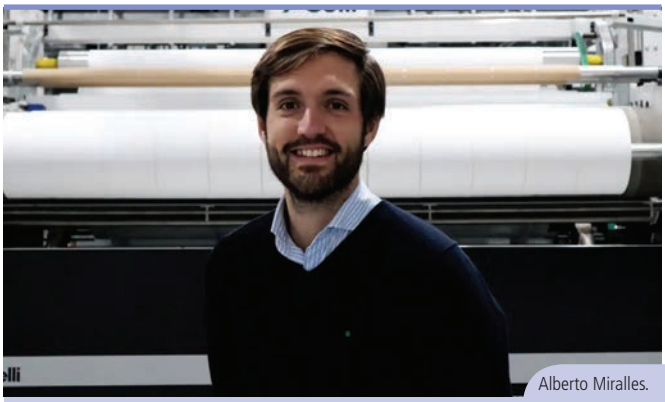


Image © El Espanol

Alberto Miralles.

Reicofil meltblown line for Spain

MURO DE ALCOI – Nonwovens Ibérica is the latest company to commission a Reicofil meltblown line at its new Neolite Division, to ensure the Valencia region of Spain has enough filter material for facemasks going forward.

The line will produce enough meltblown for 1,500 million FFP3 masks with a bacterial and particle filtration efficiency of 99%

"We cannot afford to go through another drought in basic products for our health," Alberto Miralles, deputy director of Nonwovens Ibérica told local newspaper El Espanol. "Our new division will fully guarantee to provide our country and beyond with these basic needs."

With more than 50 years of experience Nonwovens Ibérica is specialised in the home cleaning sector with clients including Vileda, Scotch-Brite.

"This know-how is useful when operating a process as delicate as meltblown," Miralles said.

Stein Fibers acquires Consolidated Fibers

ALBANY - Stein Fibers Ltd. has announced the acquisition of Charlotte, N.C.-based Consolidated Fibers.

Founded in 1960, Consolidated Fibers is a major supplier of man-made fibres specializing in various products for the nonwovens industry.

As well as polyester and viscose fibers, the deal will bring a complement of specialty and niche products to Stein's portfolio. Consolidated supplies a wide range of industries including hygiene, wipes, furniture, bedding, filtration, insulation, automotive and more. The portfolio of fibre solutions includes: virgin polyester for spunlace, wet laid, needlepunch and other nonwoven formation technologies; CoPET, PE/PP & PE/PET bicomponents for thermal bonding; and Type 6 & Type 6,6 nylon staple. It also offers recycled post consumer and post industrial fibres.

Stein Fibers is a major supplier of polyester fiberfill and nonwoven fibres with annual shipments exceeding 500 million pounds. The company said it will retain Bob Kunik, the owner and president of Consolidated Fibers, as well as several other Consolidated Fibers key sales and operational associates.

Techtextil NA to pivot to new cycle

ATLANTA – Co-located events Techtextil North America and Texprocess Americas will change their event cycle and shift permanently to odd years after the 2022 editions.

Last year, Techtextil North America and Texprocess Americas postponed their 2020 editions due to the COVID-19 pandemic. The largest co-located event for technical textiles, nonwovens, machinery, sewn products, technology, and equipment in the Americas will next be held May 17-19, 2022 in Atlanta, Georgia. Beyond 2022, however, due to a shift of the events' parent shows – Techtextil and Texprocess Frankfurt – to an even-year cycle, the North American editions will also undergo a cycle change, with the subsequent events scheduled for May 10-13, 2023 in Atlanta, and remaining in the odd year thereafter.

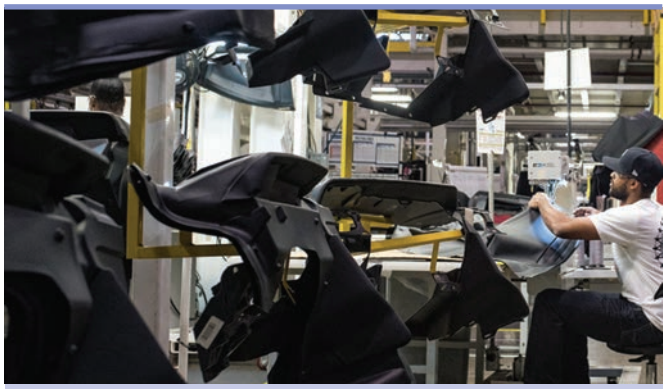
"The shift in cycle for Techtextil North America and Texprocess Americas may take some getting used to," said Kristy Meade, Group Show Director – Technical Shows at Messe Frankfurt North America. "But given the changes being made in Frankfurt in response to the pandemic, we must act with the best interest of the industry in mind. As the premier events for the textile and sewn products industries, we know that many companies rely on a presence at our shows for global exposure; hosting the Frankfurt and North American events within the same calendar year would make it hard, if not impossible, for many companies to participate in both, and the last thing we want to do is limit our customers' ability to do business."

The North American team has received support in this decision from their partners at ATME-I and SPESA:

"Two of the most important lessons we learned this past year are that nothing can replace the value of live trade shows when it comes to making personal connections, and that the ability to adapt is key to success," said Michael McDonald, President, SPESA. "SPESA is excited to welcome our members and the entire sewn products industry to Atlanta once again for Texprocess Americas 2022 and again in 2023 as we pivot to a new odd-year show cycle. We look forward to many more successful shows in the future. We are confident that making the switch to odd years will allow Texprocess Americas to continue to be the best equipment trade show in the Americas and an invaluable resource for our industry."

This cycle change will also affect Techtextil North America's standalone event, which will switch to an even-year cycle starting in 2024. The next edition will take place August 23-25, 2021 in Raleigh, North Carolina.

Web: www.techtextilNA.com



Adler Pelzer to acquire Faurecia materials business

HAGEN – Adler Pelzer Group (APG) is to in discussions to acquire the Acoustics and Soft Trims (AST) business of Faurecia.

Faurecia AST operates throughout Europe with three plants and its R&D centre in France and other plants in Luxembourg, Poland, Spain and the UK. It has 1,820 employees and achieved sales in 2019 of €385 million.

With this acquisition, APG makes a further step towards its vision of becoming a worldwide leader in automotive acoustics, as an industrial investor with long term loyalty to the automotive industry and a proven track record of growth.

The acquisition will provide Adler Pelzer with a strong relationship with Faurecia AST customers, such as Stellantis and Renault-Nissan alliance in France. AST also has a strong presence in East Europe via German OEM customers, as well as with Stellantis in Italy and the USA.

The R&D activities of the two companies are now to be centralized at Mouzon in France and synergies are anticipated from the material supply and vertical integration of semi-finished products such as nonwoven-based heavy layers and carpet roll goods for interiors and trunks, along with a reduction of waste and an increase in recycling and process innovation.

"We believe that the best future for our AST division is within Adler Pelzer because of all identified complementary activities and Adler Pelzer's market positions" said Patrick Koller, CEO of Faurecia."

Neenah acquires release liner business

ALPHARETTA - Neenah, Inc. has signed an agreement to acquire Global Release Liners, the parent company of Industrias de Transformacion de Andoain, (ITASA), from Magnum Capital for €205 million in cash.

Closing is expected to occur in early April and is subject to customary conditions.

ITASA is a major global coater and converter of release liners used in fast-growing hygiene, tapes, industrial, labels, composites and various other end markets.

With COVID-impacted sales of $120 million in 2020, Neenah expects sales of approximately $140 million in 2021 and consistent, pre-synergy mid-teen EBITDA margins. ITASA has historically grown sales by more than 8% annually and serves global markets from its operations in Spain, Mexico and Malaysia.

"Neenah's strategy is to drive long-term value creation by accelerating performance in our four targeted growth platforms. The acquisition of ITASA, with its advanced coating capabilities and strong market reputation for technical

expertise, new product development and premium performance, provides us with an opportunity to meaningfully accelerate our presence in specialty coatings," said Julie Schertell, chief executive officer. "The release liner market is a large, growing market and ITASA gives us a strong foundation to build upon, while complementing our organic initiatives with overlapping paths to market and customers."

"With a double-digit rate of return, earnings accretion and up to $4 million per year of synergies, this acquisition is an attractive use of capital and allows us to maintain our strong balance sheet and financial position. ITASA's impressive long-term record of profitable, capital-efficient growth is a testament to their talented management team, and I'm excited about their potential to create additional value as part of Neenah."

Freudenberg planning apparel competence centres

WEINHEIM - Freudenberg Performance Materials Apparel is to relocate two lines from its headquarters in Weinheim, Germany to its site in Sant Omero, Italy as it looks to adapt to changing market dynamics.

The Freudenberg division produces interlinings for all segments of the apparel industry. Currently, the company manufactures interlinings for the European mass market at its site in Weinheim, Germany, while high quality canvas interlinings for the European luxury market are made at the site in Sant Omero.

As a result of significant market changes, Freudenberg said it is planning to concentrate on manufacturing base materials for interlinings in Weinheim while base material finishing and coating is to be bundled at Sant Omero.

As part of the plan, Freudenberg will relocate two lines for finishing and coating from Weinheim to Sant Omero, along with one line from the site in San Martín, Argentina. This line was decommissioned and disassembled in 2017.

The changes will be concluded by the end of 2022 with 176 jobs in Weinheim affected by the time all planned measures have been completed.

According to Freudenberg the middle price segment of the mass market has been particularly hard hit in recent years. Increasing numbers of consumers are following the trend towards casual wear in many areas of life.

Generally speaking, casual garments only require very few interlinings, or none at all. The global pandemic has further accelerated this trend.

Next step for regenerated cellulose

NYMÖLLA - TreeToTextile, the recycling company formed by H&M, Inter IKEA, Stora Enso and LSCS Invest, is to build a €35 million demonstration plant for up-scaling its process for the production of new regenerated cellulosic fibres for textiles and nonwovens.

The aim is to demonstrate that the company's technology can be industrially scaled up and the fibres produced at low manufacturing cost.

The TreeToTextile technology is a chemical process using renewable forest raw material and regenerating the cellulose into a textile fibre by spinning dissolving pulp. It uses less chemicals than conventional production, allowing for a more sustainable and cost-efficient process. There are no sulphur emissions during the production and the water and chemicals used are recycled and reused.

The strong sustainability performance of the technology has been confirmed by a third party verified Life-Cycle-Assessment study. The process is deliberately designed to have low energy demand and low chemical need and is engineered to suit large scale production, including a recovery system for reusing the chemicals.

"Our technology has the potential to reduce the environmental footprint of the textile industry significantly," said TreeToTextile CEO Sigrid Barnekow. "With the support, innovative agendas, know-how and size of our owners, we can make an important contribution to enabling the textile industry to become more sustainable and circular."

The owners are contributing €27.4 million of the cost for building the new plant, with €7.6 million coming from the Swedish Energy Agency. The plant will be established at Stora Enso's Nymölla mill in southern Sweden, and construction will start in spring 2021. The production capacity will be 1,500 tons of fibre per year.

Web: Treetotextile.com

Lydall-Gutsche secures huge filter bag order

PRAGUE – Gutsche, which was acquired by Lydall for $32 million at the start of 2017, is to supply 25,000 filter bags to ČEZ AS, an integrated electricity conglomerate, which is the largest utility in the Czech Republic.

ČEZ continues to raise the environmental standards of its coal-fired power plants and is currently undertaking a project to reduce dust emissions at a coal-fired power plant in Tušimice over the next two years. At four 200MW Tušimice units, de-dusting will be carried out by fabric filters with a total flue gas volume of approximately 5.64 million m^3 per hour.

Lydall-Gutsche will supply its microvel PL filter elements for the project. The company has advanced needlefelt nonwoven operations in Germany and China.

Medical sector drives carded nonwovens growth

CLEVELAND - Demand for nonwovens in medical applications is expected to increase 3.9% per year to $255 million in 2024.

The prediction comes in a new report from the Freedonia Group, which also notes that nonwovens used in medical applications accounted for 9% of carded nonwovens sales in 2019.

In the medical market, nonwovens can be used to produce a variety of disposable products, including such products as healthcare wipes, bandages and bedding, among others. Adult incontinence products are included in the consumer market. Demand is dependent on several variables, including the volume of healthcare activity, the number of surgical procedures, demographic patterns, and incidence of diseases and disorders.

The report, Carded Nonwovens, says that the demand to 2024 will be driven by concerns over healthcare-associated infections (HAIs) and the effectiveness of infection prevention protocols, which will support continued growth among products like disinfectant wipes.

There will also be fast growth in the senior population (aged 65+), which will benefit medical nonwovens since the elderly have greater healthcare needs than other parts of the general population.

Other drives include the compatibility of nonwovens with many medical applications, due to their potential for softness and absorbency, and, just as in consumer products, many of the personal hygiene products used in healthcare settings continue to undergo new research and development to improve product performance, safety, and sustainability. This includes developing products with greater strength, low linting, and safer chemical treatments.

The report also notes how the COVID-19 pandemic has spurred demand spikes for a variety of medical supplies as well as those that limit transmission of the virus, such as surface disinfectant wipes. However, the pandemic has also put some limitations on the demand for nonwovens in the medical market. Many hospitals opted to limit elective surgeries as the pandemic spread, both to limit the potential transmission of the virus, but also to focus resources on the treating the disease and protecting healthcare staff.

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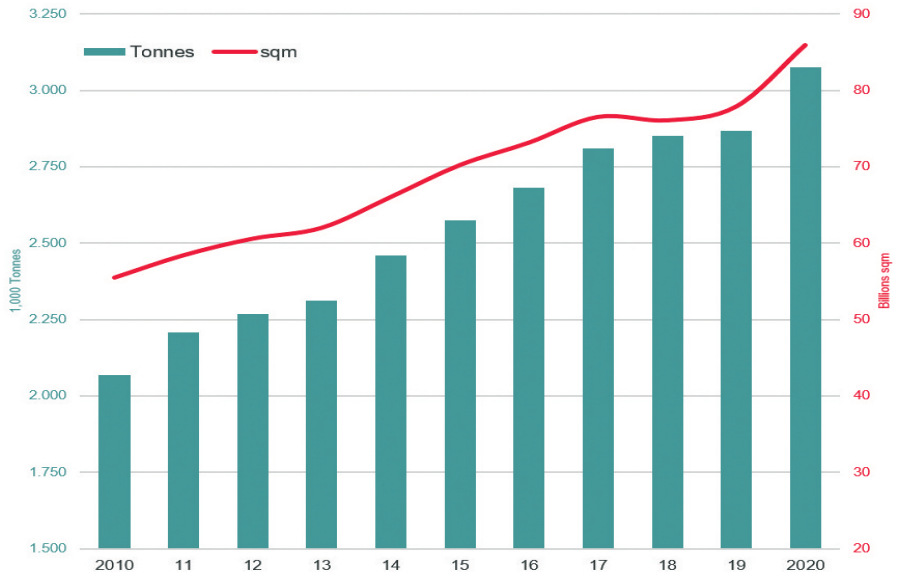
European production exceeds 3m tonnes in 2020

The latest EDANA statistics highlight the crucial role played by nonwovens during the pandemic.

EUROPEAN NONWOVENS PRODUCTION



Production of nonwovens in Greater Europe grew by 7.2% in 2020 to reach 3,075,615 tonnes (and 85.9 billion square metres) with a total estimated turnover of €9,555 million.

The latest figures from EDANA, which demonstrate the industry's drive and durability during a period of unprecedented change to demand drivers and supply chains, also show that the total output of the 27 European Union countries is now over 2.15 million tonnes.

Jacques Prigneaux, EDANA's Market Analysis and Economic Affairs Director elaborated on the main drivers for the impressive growth rate, which well outpaced the annual average growth rate over the last decade of 4.0%. "The highest demand for materials intensively used to fight the pandemic impacted the production," he said. "Spunmelt and Drylaid-Hydroentangled nonwovens witnessed two-digit growth rates in both weight and surface area. Thanks to the development in similar applications, the growth in the Wetlaid nonwovens was also substantial last year. Airlaid production, with opposite trends in different applications, recorded a flat situation compared to a year before."

The report also shows that the main end-use for nonwovens remained the hygiene market with a 28% share of deliveries, amounting to 857,940 tonnes, a 9.6% growth in 2020. Unsurprisingly, the most significant growth areas for nonwovens in 2020 were observed in medical (+118.0%) and wipes/personal wipes (+22.0%) followed by garments (+32.6 %).

In contrast, major declines were noticed in automotive interiors (down 23%), floor coverings, table linen and interlinings. Additionally, several important durable sectors in terms of volumes sold, such as in construction markets and liquid filtration showed limited growth and, in the case of agricultural applications, negative growth.

"Thanks to a convergence of efforts of the participating companies and of the EDANA staff in the last few years, these results are based on the collection of actual data from an increasing number of companies and not less than 118 companies/plants directly reported their 2020 returns this year," Prigneaux added. "More and more accurate figures will certainly make these statistics ever more relevant for planning and benchmarking purposes within member companies."

Pierre Wiertz, General Manager of EDANA added: "Behind those figures we see first and foremost the efforts and labour of thousands of women and men who can be proud of working for companies whose purpose has always been, but is perhaps now recognised better than ever, to contribute to deliver excellence for the well-being and health of fellow citizens.

"The modest and yet essential role of these annual EDANA statistics – the most comprehensive available in the world – has been now for 50 years, to document this performance and provide this unique source of business intelligence to our member companies, thanks to direct input from producers and exhaustive market insight."

Further statistical detail and analysis is available in the report "2020 European Nonwovens Market Insights", shared with all EDANA members. EDANA members who are nonwoven producers will receive more detailed data, in recognition of their survey participation. Members can also access comprehensive figures across a full range of applications and production processes via the EDANA Statistics App. **SNW**

Demand driven

Fibertex is expanding its capacity in North America to meet the growing need for locally produced nonwovens fabrics.

Danish industrial group Fibertex Nonwovens is looking to capitalize on the booming demand for advanced nonwovens seen in recent years with a fresh DKK 300 million (US$48 million) investment to expand its output capacity and meet the growing need for the local production of nonwovens in North America.

The company has also acquired an 84-acre industrial plot adjacent to its existing facilities in South Carolina with a view to expanding further to accommodate demand from North American global brands.

Fibertex Nonwovens, owned by the Danish industrial conglomerate Schouw & Co., has invested heavily in its US presence in recent years: in 2019, it acquired a state-of-the-art spunlacing production facility in South Carolina and last year, the company added a new production line at the site based on advanced needlepunch technology.

A tranche of the new spending has been earmarked for the purchase of a further high-capacity line spunlace line, which will focus on the use of sustainable raw materials. This, said the company, will support its ambition of building a strong position in the North American market, with the total investment expected to bring revenue from its US operations to more than DKK 1 billion within a few years. "Over a period of more than 50 years, nonwovens have evolved into high-tech performance materials used in a wide range of sectors," explained Fibertex Nonwovens CEO Jørgen Bech Madsen, speaking from the company's head office in Aalborg, Denmark. "In 2020, the coronavirus pandemic led to a dramatic surge in demand for PPEs and disinfection products for the healthcare sector, an area where we're a frontrunner providing innovative products based on spunlacing, advanced needlepunch, nano and other value-added technologies."

Sustainable

Madsen also highlighted the substantial growth of the global nonwovens market in 2020, which, he said, was partly driven by the coronavirus pandemic. "We expect to see it grow by a further 8% annually during the period to 2026, regardless of how the coronavirus pandemic evolves," he said. "The North American market especially is set to see a surge in growth, with demand exceeding supply even before the coronavirus crisis. Fibertex Nonwovens is a major supplier to a wide range of global brands in this market. That's why we see a special potential in building local production in this market to serve our many customers demanding sustainable products with unique properties.

"Market trends are finding support in the added focus on health and hygiene,

more emphasis on local production and added focus on sustainability, which is also to our benefit. With this new investment, we'll be able to build an extremely strong position in the important North American market for, among other things, high-performance wipes for sanitizing and disinfection purposes in the healthcare/medical sector, sustainable personal care products, a range of industrial applications as well as in the automotive industry and the construction sector."

The additional capacity will be based on the spunlacing technology, where the fibres of the nonwoven textiles are entangled using high-speed jets of water, and installed at the company's site in Greenville, South Carolina. This is a technology Fibertex Nonwovens has been perfecting for a number of years and one of the reasons why the company says it is a market leader within special-performance materials and value-added solutions.

"We have a lean, technologically advanced production setup, focused on value-added innovation," Madsen added. "Our North American operations are based in South Carolina and Illinois. Our strategy is: *The Right Technology at the Right Location*, which is appreciated by our customers in the automotive industry, the healthcare sector and the construction and filtration industries in the USA, Brazil, France, Denmark, the Czech Republic, Turkey and South Africa."

"Fibertex Nonwovens holds huge potential, which we're currently unfolding," added Jens Bjerg Sørensen, President and CEO of Schouw & Co. "The coronavirus pandemic has made what we do even more relevant, and this demand is here to stay. In other words, there's enormous growth potential, and we intend to build on our current position, especially in advanced and high-tech performance materials."

Automatic precision for mask production

Autefa Solutions has developed a fully automated production line for facemask production.

Autefa Solutions, the manufacturer of nonwoven machines and automation solutions, has developed HiPerMask, a fully automated production line for the production of protective facemasks.

HiPerMask, which is said to offer high process reliability and productivity, has been designed to produce protective masks in accordance with the EU FFP2 and FFP3 standards as well as the US N95 and N98 standards.

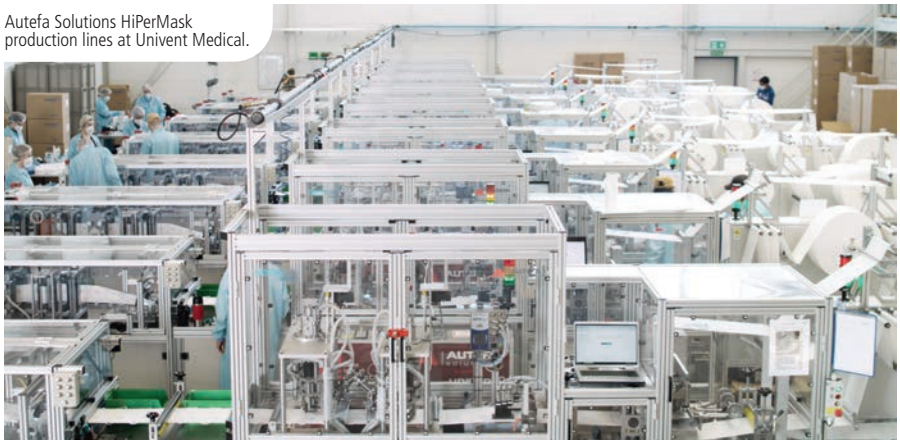
Autefa is now reporting double-digit sales of the machines following the initial deliveries in May 2020 to Univent in Germany and Flawa in Switzerland, both market leaders in mask production in their respective countries. Both companies were also among the first to be able to handle the corresponding Federal orders in Switzerland and Germany.

The mechanical and electrical design, production and assembly, software programming and in-house tests for the HiPerMask take place in Friedberg, Bavaria and Frauenfeld, Switzerland, says Autefa, noting that all parts and components used in the machines are from well-known German and European manufacturers. This ensures that all production processes are subject to the ISO 9001-2015 certified quality standards of the machine manufacturer.

As the rollout of the machines continues, the supply of the additional machines and production lines will be carried out by Autefa Solutions Germany. In addition to the DACH region - Austria, Germany, and Switzerland - the target countries for sales are the rest of Europe and the USA.

"The unique combination of knowledge at Autefa in mechanical engineering, nonwovens technology and automation has enabled us to provide customers with a complete solution that leaves nothing to be desired," explained Christian Egger, CEO, Autefa Solutions Germany GmbH. "We provide customers not only with mask production line, but also with access to premium material, camera-based quality control and a fully automated packaging solution for the final product. These added values offered by Autefa allow economic mask production."

Autefa Solutions HiPerMask production lines at Univent Medical.



Facemaks produced on the Autefa line.

Technology

As Egger notes, the fully automated HiPerMask production line offers numerous advantages for successful FFP/N protective mask production, for which Autefa Solutions stands as a leading machine manufacturer with the requisite expertise and know-how.

Particularly noteworthy is the high process reliability with reproducible product quality and a production output of over 50,000 masks per day.

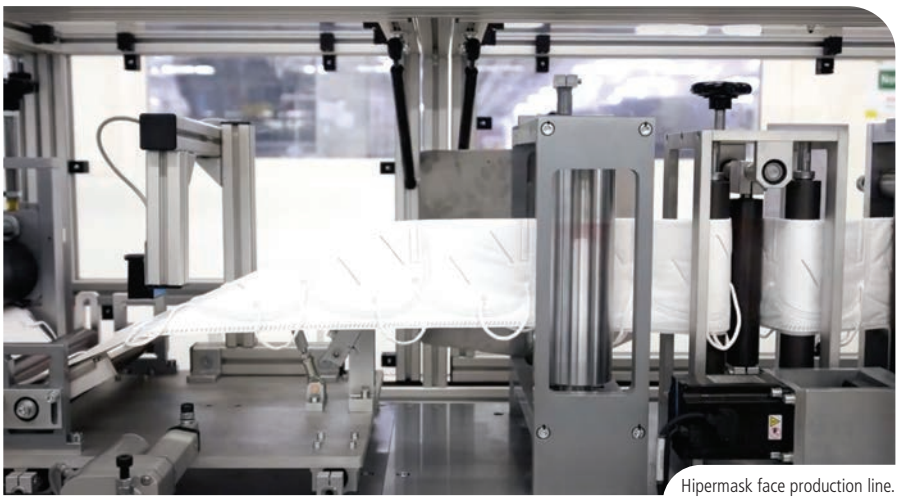
The complete line consists of numerous state-of-the-art individual units which are joined together into

what Autefa calls, "a unique machine solution". A single line consists of a material feed, nose clip feed and positioning, ultrasonic welding units, ear loops or headband stations, mask folding, punching, and dispensing of the masks into a collection container. The line also includes an unwinder with 6 stations to ensure a warp-free synchronized material feed while the respirator/ mask shape welding is carried out with Emerson Branson ultrasonic assembly technology.

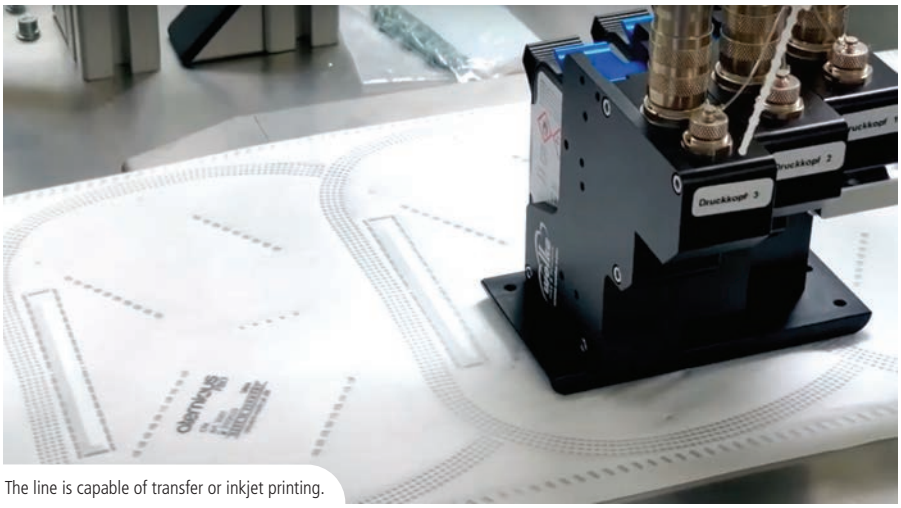
On closer inspection, it is clear that each of the individual units plays a key role in producing a high quality facemask. The nose clip unit, for example, ensures the precise feeding of the nose clips while a printing unit affixes the labeling on both sides, including individual numbering and company logos. The mask-folding unit is then equipped with automatic centering by means of a vision sensor and linear unit.

As an option, the mask strip welding can be carried out as an ear loop station or as a headband station with band length adjustment. A further feature is the shaping and welding of the protective mask contour for different mask sizes and protective mask shapes. The automation continues on the HiPerMask up to the integration of the packaging machines. Here, the masks can also be automatically packaged in individual bags with the entire process monitored by an integrated quality control system, which is controlled by cameras and carried out with the help of artificial intelligence.

The production line is completed with a comprehensive full-service package for starting production and procuring consumables for meltblown and spunbond nonwovens as well as other accessories. Autefa also offers companies assistance with certification. The resulting short delivery times and the fast "time-to-market", says the company, guarantee a successful entry into manufacturing FFP2 and FFP3 masks.



Hipermask face production line.



The line is capable of transfer or inkjet printing.

Customer

One of the first development partners for the fully automated HiPerMask production line was Univent Medical GmbH, which is based in Villingen-Schwenningen, Germany. "Mask production is a new business in Europe, and we spoke to various machine manufacturers who wanted to build the machines," said managing director Thomas Vosseler, highlighting his high levels of satisfaction with the system and the collaboration as a whole. "In the end, Autefa convinced me as a global acting specialist for nonwoven machines and lines. That has already created a lot of trust. In addition, everything that we had in our future plans, such as automated packaging, automated control and head loop stations, children's masks, i.e., everything we wanted to do in mask production, was never a problem for Autefa. The message was that we can do everything together, and it is working really well now. That's why I would definitely choose Autefa again."

Upgrade

A further benefit from Autefa is that an upgrade of customers' existing production technology for FFP / N masks is also possible. Using its extensive know-how in the sector, Autefa says that many FFP / N mask machines from other manufacturers that are available on the market can also be expanded and modernized.

Examples of such upgrades are the upgrading around ear loop and head band welding stations, mask shape stamping (for different mask shapes) and mask folding (here the centering is sensor-controlled), and, of course quality control of the processes and the entire production.

André Imhof, CEO, Autefa Solutions Switzerland explained: "The production of FFP /N protective masks is about quality, efficiency and output. At Autefa Solutions, we are happy to help wherever possible to improve production quickly and sustainably with our know-how and flexible solutions in order to be able to produce more masks faster and better."

Web: www.autefa.com **SNW**

All change in 2020

Consulting editor **Adrian Wilson** details new spunbond and meltblown investments before and after coronavirus moved the goalposts.

The three tables with this article reflect the significant change that has taken place in investments in new manufacturing capacity for spunmelt nonwovens since the first few months of 2020.

Principally, over the past 12 months, somewhere in the region of 150 new stand-alone meltblown lines are reported to have been installed or are currently being delivered or commissioned. Even Norway now has its own.

Some of these plans, however, especially in China, could have been abandoned as on- or near-shore manufacturing and related supply chains have become established in the USA, EU and elsewhere.

Scarcity

With the emergence of Covid-19 in China last January, the global shortages of facemasks hinged largely on the scarcity of certain grades of meltblown nonwovens for achieving the necessary quality standard for filtration efficiency.

The resulting chaos has been well documented in previous issues of *Sustainable Nonwovens*, but needless to say, the issue was elevated for a time, to the very top of the global political agenda.

The tables with this article are far from comprehensive, since many investment decisions have not been made public. Also, because very little is known about the current status of the estimated 100 new meltblown lines slated for installation in China, beyond a statement at the height of the first wave of Covid-19 last May by BYD. One of China's largest privately-held companies, BYD said it had rapidly created the world's largest mass-produced nonwoven facemasks plant and was building mask converting machines at the rate of one per week.

To give an idea of the Gold Rush fever that hit China, however, an article in the South China Morning Post reported that the price for a ton of meltblown fabric climbed from around $2,800 a ton pre-pandemic, to as much as $56,500 by May.

Further, in the first five months of 2020, over 70,000 new companies registered to make or trade in facemasks in China, and over 7,000 new companies registered to make or trade in meltblown fabrics.

Before the pandemic, most of the world's masks were manufactured in China and in March 2020, the figure could still have been as high as 85%, because in many countries, if China wasn't delivering the masks and PPE in general, there was no supply.

North America

As nonwovens industry conferences and exhibitions moved online in 2020, Brad Kalil of INDA – the North American nonwovens association – outlined the unique combination of factors that led to North America's shortages of facemasks during a webinar held last May.

Disposable medical apparel items – which include surgical gowns, scrubs, caps shoe covers and disposable bedding – all have to be individually sewn, as opposed to being converted by automatic equipment as diapers and

other AHPs are. Labour rates for sewing machinists in the USA average about $9 an hour, compared to $1 in China.

Consequently, in 2019 the USA imported some 92.5 million dozen packs of disposable medical apparel – 1.1 billion items – directly from China.

This figure did not even include facemasks, which INDA includes in its statistics under the separate filtration category.

At the start of 2020, the pipeline of supply from China to the USA for all of these products was completely cut off.

Kalil said at that time that there were eight companies operating 44 lines for composite spunmelt nonwovens in the USA, but virtually all of their capacity was sold out for the production of hygienic disposables like diapers, for which demand was higher than ever.

There were a further 24 US companies operating 79 specialised meltblown lines. Around 45% of their output was for filter media, which uses finer fibres and requires electrostatic charging, while the remainder was for applications including transportation and wipes and a range of other niche applications.

INDA estimated there was still an estimated 18% of unused capacity for meltblown in the USA and last year worked with manufacturers of sorbent products for oil containment applications as a potential source of new materials.

In an update presented at the online INDA Hygienix conference in November, Kalil said that a total of 57 new nonwoven manufacturing lines would come ›

TABLE 1: RECENT AMERICAS EXPANSIONS

Company	Technology	Location	Operational
AE PPE	Meltblown	Crestview, Florida	2020
Armbrust American	Meltblown	Austin, Texas	2020
Atex	Meltblown	Gainesville, Georgia	2018
Berry Global	Spunmelt	Incremental at various plants	2018
Berry Global	Spunmelt	Statesville, North Carolina	2021
Berry Global	Meltblown	South America (TBC)	2020
Biax Fiberfilm	Meltblown	Neenah, Wisconsin	2020
Fitesa	Spunmelt	Simpsonville, South Carolina	2017
Fitesa	Spunmelt	Simpsonville, South Carolina	2021
Fitesa	Meltblown	Simpsonville, South Carolina	2021
Lydall	Meltblown (2 lines)	Rochester, New Hampshire	2020/21
NPS Corporation	Meltblown	Green Bay, Wisconsin	2021
Shawmut/Fallon	Meltblown	West Bridgewater, Massachusetts	2020
Uniquetex	Spunmelt	Grover, North Carolina	2018-19

on-stream in North America in 2020 and 2021, of which 38 would be meltblown lines initiated in response to the shortages of facemasks and PPE production.

Bigger picture

In the bigger picture, nonwovens production growth in North America has been exceeding capacity growth for some time now.

INDA figures reveal that between 1990 and 2019, North American investments in new capacity have been on average 4.5%, greatly exceeding an average US GDP of 2.5% over the same period.

North American capacity for nonwovens was put at 5,479,000 tons in 2019, manufactured on 880 lines belonging to around 200 companies.

Of total capacity, 88% is in the USA, 8% in Mexico and 4% in Canada and 45% is drylaid, with spunlaid at 28%, wetlaid at 23% and airlaid at 4%. In total, 72% of capacity is fibre based,

A total of 57 new lines will come on-stream in North America in 2020 and 2021, of which 38 are meltblown lines initiated in response to the shortages for facemasks and PPE production.

Nonwoven materials also tend to stay where they are manufactured, with North America importing around 106,2000 tons in 2019 and exporting 356,800 tons.

China has been by far the biggest importer of nonwovens into North America for many years, but in 2019 these imports dropped markedly, as a result of the current trade war between the USA and China.

Europe

In Europe, Germany's response to the Covid-19 pandemic was the most robust, with the German government putting the domestic manufacture of facemasks out to tender and guaranteeing prices for all that are produced until the end of 2021.

Around 50 German companies, including technology firms, raw materials suppliers, manufacturers and distributors, secured a place on a rapidly ushered-in government scheme to produce ten million specialised FFP3 masks and a further 40 million operating room standard masks a week from August 2020.

Germany benefits from being the domestic market of the two largest European manufacturers of meltblown nonwoven manufacturing equipment – Reifenhäuser Reicofil and Oerlikon Nonwoven. At the height of the pandemic-induced shortages, both of these companies introduced shortened delivery times and turned over their own pilot lines to the production of emergency supplies around the clock. Reicofil's two pilot lines in Troisdorf alone have a combined capacity for making enough fabric for one million face masks a day.

Reicofil and Oerlikon are also benefiting from a new subsidy regime put together by the German government, under which it is covering 30% of the cost of a meltblown production line, as long as the manufacturer pledges to sell exclusively into the German and European markets by the end of 2023.

Italian machine manufacturer Ramina meanwhile only unveiled its Leonardo 01 pilot line December 2019 and by March 2020 it was in operation 24 hours a day producing 60 tons of meltblown fabric per month. Ramina has subsequently supplied a significant number of new lines in Europe.

TABLE 2: RECENT ASIA PACIFIC EXPANSIONS

Company	Technology	Location	Operational
Berry	Meltblown	Nanhai, China	2017
Berry	Spunmelt	Nanhai, China	2020
Beximco	Meltblown	Savar, Bangladesh	2020
CNCFitesa	Spunmelt	Rayong, Thailand	2019
Fibertex	Spunmelt	Nilai, Malaysia	2017
Fibertex	Spunmelt	Nilai, Malaysia	2021
Fiberweb India	Spunmelt	Nani Daman, India	2018
Global Nonwovens	Spunmelt	Maharashtra, India	2016
Kurary Kuraflex	Meltblown	Okayama, Japan	2020
Low & Bonar (Colback)	Spunmelt	Changzhou, China	2018
Mitsui Sunrex	Spunmelt	Yokkaichi, Japan	2017
Mitsui Sunrex	Meltblown	Yokkaichi, Japan	2020
Oz Health Plus	Meltblown	Queensland, Australia	2021
SINOPEC	Meltblown (12 lines)	Various, China	2020
Toray Polytech Foshan	Spunmelt	Foshan, China	2019
Toray Advanced Materials	Spunmelt	Gumi, Korea	2018
Toray Polytech	Spunmelt	Jakarta, Indonesia	2018
Toray Advanced Materials	Spunmelt	India	2018
UPA Healthcare Products	Meltblown	Malaysia	2020

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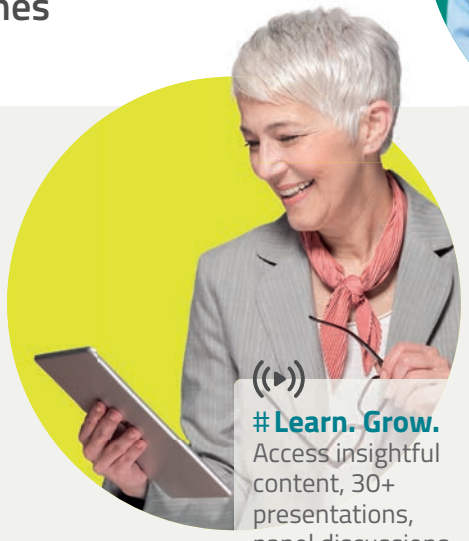

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EU-wide response

All told, EDANA reports that the EU production of facemasks increased twenty-fold by November 2020 compared to pre-crisis times. EU-based producers are now able to make the equivalent of 1.5 billion three-layer masks a month.

"These figures show how EDANA's members in the nonwovens sector responded in record time to the unprecedented challenge of the Covid-19 pandemic and the call by EU and national authorities to ramp up production of facemasks to protect public health," said EDANA general manager Pierre Wiertz. "As soon as the European Commission and member states asked for an increase in the production of facemasks, EDANA's members worked flat out to increase the production of meltblown nonwovens to overcome global supply shortages."

TABLE 3: RECENT EMEA EXPANSIONS

Company	Technology	Location	Operational
Avgol	Spunmelt	Dimona, Israel	2017
Berry (Avintiv)	Spunmelt	Nanhai, China	2020
Berry Global	Meltblown	Germany	2020
Berry Global	Meltblown	UK	2020
Berry	Meltblown	France	2020
Bluetree	Meltblown (2)	Rotherham, UK	2020
Don and Low	Meltblown	Forfar, Scotland	2016
Don and Low	Spunbond	Forfar, Scotland	2018
Don and Low	Meltblown	Forfar, Scotland	2020
DuPont	Flashspun (Tyvek)	Luxembourg	2021
Fibertex	Nanofibres	Aalborg, Denmark	2018
Fitesa	Spunmelt	Peine, Germany	2017
Fitesa	Meltblown	Trezzano Rossa, Italy	2020
Fitesa	Meltblown	Peine, Germany	2020
Freudenberg	Spunmelt pilot	Kaiserslauten, Germany	2015
Freudenberg	Meltblown	Kaiserslauten, Germany	2021
Gulsan	Spunmelt	Gaziantep, Turkey	2018
Gulsan	Spunmelt	Gaziantep, Turkey	2022
Gulsan	Spunmelt	Cairo, Egypt	2018
Gulsan	Spunmelt	Cairo, Egypt	2022
Gulsan	Meltblown	Gaziantep, Turkey	2020
HIK-91	Spunbond	Plovidv, Bulgaria	2020
Innovatec	Meltblown	Troisdorf, Germany	2019
Innovatec	Meltblown (2 lines)	Troisdorf, Germany	2020
Lydall	Meltblown	St Rivalaine, France	2021
Meltblo	Meltblown	Brognard, France	2021
Mogul	Meltblown (2 lines)	Gaziantep, Turkey	2021
Mondi	Meltblown (2 lines)	Gronau, Germany	2020
Nonwovens Iberica	Meltblown	Muro de Alcoy	2020
Naukatek AS	Meltblown	Trondheim, Norway	2020
Pegas	Bico Spunmelt	Znojmo, Czech Republic	2019
Pegas	Spunmelt	Cape Town, South Africa	2019
Radici	Spunmelt	Gandino, Italy	2018
Radici	Meltblown	Gandino, Italy	2021
Sandler	Meltblown	Schwarzenbach, Germany	2020
Spunchem	Spunmelt	Durban, South Africa	2018
Union Industries	Spunmelt	Masserano, Italy	2021
Wolfe PVG	Meltblown	Spenge, Germany	2021

Major players

Of the major players, Lydall supplied enough meltblown nonwoven fabric for almost a billion facemasks in 2020.

The company is currently in the process of a $40 million meltblown capacity expansion which will provide it with the means to provide materials for over two billion N95 respirators annually going forward.

"In late December, we successfully commissioned a new fine fibre meltblown production line in Rochester, New Hampshire, and reached full capacity in January," said president and CEO Sara A. Greenstein. "Additional capacity at Rochester and St. Rivalain in France is on schedule for production in the early third quarter of this year and all of these projects are expected to be strong profitable growth contributors in 2021."

In May 2020, Berry Global announced further expansions to its global spunmelt nonwovens capacity, with an $8 million investment in new machinery and enhancements at its plant in Statesville, North Carolina, and the first line to produce Meltex meltblown materials in South America.

In June, Berry announced a new meltblown line in the UK as part of a collaboration with Medicom to supply the UK Government with medical and respiratory masks and it has also added Meltex meltblown capacity at its plants in Germany and France.

In November 2020 Fitesa announced it would add several meltblown lines at its plants in Italy, Germany and the USA.

Also in November 2020, Innovatec started production on its second Oerlikon Nonwoven's meltblown system in Troisdorf Germany, having started up a first in June 2020.

The company now has filter media production capacities that can be used to manufacture up to 2.5 billion operating room filter masks or a billion highly-effective FFP2 masks per year.

In October 2020, Innovatec confirmed that it had also invested in a new Reicofil Bico spunbond line. The new line, which is expected to be operational by July 2021, will expand the company's production of technical spunbond fabrics by 5,500 metric tons.

Bigger picture

In the bigger picture, the spunbonding and meltblowing processes are primarily used for absorbent hygiene applications – baby diapers, femcare and adult incontinence products – as well as medical products.

The materials for these end-uses are usually made on multiple-beam machines in which the two materials are combined in layers – such as in popular SMS (spunbond-meltblown-spunbond) composite configurations – to exploit the properties of both types of web. These materials are commonly referred to as 'spunmelt'.

Spunbonding

Spunbonded nonwovens can be generally distinguished from dry and wetlaid fabrics using staple fibres by their one-step, integrated manufacturing process – from the polymer straight onto beams, without any fibre preparation steps. This manufacturing involves a series of integrated – and now highly automated – operations, including melt preparation, filament extrusion and drawing, web forming and bonding.

The first spunbonding systems originated from the proprietary technology of fibre producers such as DuPont in the USA, Rhone-Poulenc in France and Freudenberg in Germany.

DuPont is regarded as the first to have successfully commercialised spunbonding with its Typar product, launched as a tufted carpet backing system in the mid-1960s.

The first commercial spunbonding system to be offered was the Docan system developed by the German Lurgi engineering group in the 1960s and licensed to Corovin (now part of Berry Global) in Germany, Sodoca in France (also now Berry Global), Chemie Linz in Austria (subsequently split up and merged into other corporations), and Crown Zellerbach (now also part of Berry Global) and Kimberly-Clark in the USA.

The next major step toward the global commercialisation of the spunbond process was with the introduction of Reifenhauser's Reicofil system in 1984.

Reicofil's spunmelt technology is now in its fifth iteration and with the Reicofil RF5 systems, throughput for spunbond fabrics is now up to 270kg per metre of beam width and meltblown to 70kg per metre width. This represents a 35% overall increase in output allowing producers to run their lines at maximum speeds, even high weigh fabrics. Speeds are also up by 30%, to 1,200 metres of fabric a minute (the actual speed on the conveyor belt, not, as in the past the speed on the winder).

Another company making rapid inroads into commercial spunbond technology is Oerlikon Nonwovens.

Meltblowing

Like spunbonding, meltblowing produces fibrous webs directly from polymers using high-velocity air to form the filaments. The process is unique, however, because it is used almost exclusively to produce microfibres rather than fibres the size of typical textile fibres. Meltblown microfibres generally have diameters in the range of 2-4 microns which enhances the softness, cover, opacity and porosity of the webs obtained.

The basic technology for producing microfibres was first developed in the 1950s by the Naval Research Laboratory. The commercial significance of the work was recognised by Exxon, which subsequently developed the technology further. Researchers at Exxon extended the basic design and first demonstrated the production of meltblown microfibres on a commercial scale by modifying sheet die technology.

Just how unique meltblown fabrics actually are, only became apparent with the emergence of the Covid 19 pandemic and the immediate global shortage of medical grade facemasks.

Absorbent hygiene

There was a significant investment in spunmelt technology for the hygiene industry and other established markets for a number of years, but this slowed during 2018 and 2019, as the markets played catch-up.

Now, however, as our tables reveal, significant new capacity for absorbent hygiene is also scheduled to come onto the market before the end of 2022. **SNW**

Oerlikon aiming to be climate neutral by 2030

Oerlikon's first ever Sustainability Report sets out a number of key environmental, social and governance targets.

Nonwovens technology supplier Oerlikon has outlined a number of targets in its first ever Sustainability Report, *Innovation for a Sustainable Future,* including a pledge to be operationally climate neutral by 2030.

"Sustainability has been an integral part of our strategy that drives our innovations and operations to serve our customers' needs for many years," said Dr. Roland Fischer, CEO Oerlikon Group. "With the report, we now make a public commitment and join the ranks of people proactively engaging with sustainability and inspiring others to do the same."

Fischer also highlighted how helping customers in key industries to achieve more with less was an integral part of Oerlikon's value proposition, technologies and operations. Based on the materiality analysis, Oerlikon has now selected 8 out of the 17 United Nations Sustainable Development Goals (SDGs) where the company can make the most difference for its stakeholders.

Amongst these are environmental, social and governance targets for 2030 that have been set by the Group in areas that align most closely with its operations, policies and capabilities. These targets, which have been selected in areas where Oerlikon believes it can make the greatest impact, include using only energy from renewable sources, reducing the share of disposed waste, ensuring that 100% of R&D investment in new products must cover ESG criteria, and increasing the number of women in leadership roles.

Further targets include implementing energy management systems at all sites, increasing the share of operations that are climate neutral, and increasing the percentage of employees who have completed the compliance and Code of Conduct training.

"Setting ambitious targets, such as achieving climate neutrality in our operations by 2030, clearly underlines our commitment," added Dr. Fischer. "We also intend to have 100% of our R&D investment in new products to cover the ESG criteria."

Oerlikon said it had many tangible examples of how its engineering and processing of materials and surfaces contribute to sustainability in collaboration with its customers. The company's technologies, for example, lengthen the useful life of machinery and tools, improve automotive and aerospace fuel efficiency and pioneer advances in textile manufacturing and mobility.

Oerlikon's 2020 Sustainability Report is prepared according to the internationally recognized GRI Sustainability Reporting Standards which, the company says, underlines its commitment to transparently sharing its sustainability achievements and progress, and is accessible online at www.sustainabilityreport.oerlikon.com.

Performance

Elsewhere, despite the impact of the coronavirus pandemic, Oerlikon's Manmade Fibers Division delivered a strong performance in 2020, boosted by the performance of the Group's nonwovens division.

After securing record wins for filament

equipment at the beginning of 2020 (with a total value of more than CHF 600 million), the business proved to be highly resilient for the remainder of the year, even after the outbreak of COVID-19, Oerlikon said, adding that the nonwoven business benefited from the unanticipated surge in demand for protective wear and masks.

This was also boosted by the acquisition of a majority stake in the joint venture Teknoweb Materials S.r.l. which extended Oerlikon's nonwoven production system portfolio for disposable nonwovens and strengthened the company's position in the nonwoven sector.

For the fourth quarter, Manmade Fibers' EBITDA was up 81% to CHF 47 million on the back of an 11.2% increase in sales to CHF 296 million.

For the full year, sales and orders for the division both exceeded CHF 1 billion, while the business has full order books for filaments and nonwovens equipment for the next two years.

Year on year order intake decreased slightly by 2.3% to CHF 1097 million compared to CHF 1122 million in 2019 while sales also decreased slightly by 4.0% to CHF 1,061 million, compared to CHF 1106 million in 2019.

Operational EBITDA improved year-over-year to CHF 151 million, or 14.2% of sales, compared to CHF 145 million, or 13.2% of sales, in 2019.

Operational EBIT for 2020 was CHF 120 million (2019: CHF 119 million), or 11.3% of sales (2019: 10.8%). **SNW**

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Glimpsing the future

Digitalization is enabling a significant increase in efficiency in nonwovens production.

The onset of digital technology has been transforming the way we live, both at home and in the workplace. We can measure and manage pretty much all aspects of our lives by analyzing data, and then acting on the information it provides.

This digital transformation has also arrived on the scene in nonwovens production with solutions such as Metris Digital Solutions by Andritz, for example, designed to significantly improve production line performance.

"So, you are happy that your nonwovens equipment is running and producing a quality product, your customers are satisfied, and all is going as well as expected in your production plant," asks Andritz. "However now is not the time for sitting back, in fact now is the perfect time to explore what difference gathering and managing data could make in improving the performance of your nonwovens lines."

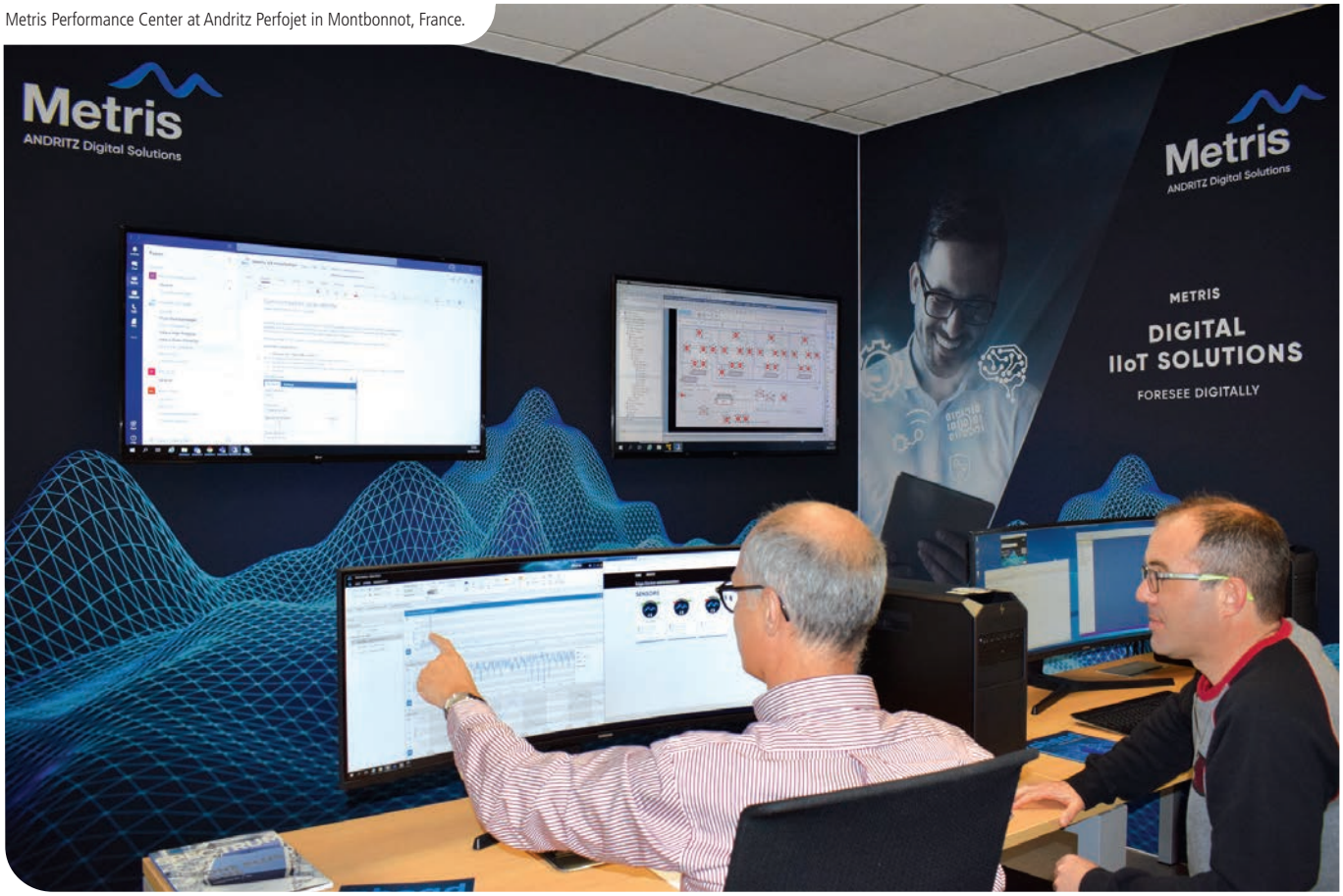
Digitization in the nonwovens industry is now a reality. However, there are many suppliers offering the ability to digitize your production plant, but most of them without the process knowledge that is essential in obtaining the right result.

As Alexandre Butté, Business Development Director, Andritz Nonwoven, explains, this is where partnering with an experienced supplier not only in digitization, but one that implicitly knows the processes involved in nonwovens production, is a real benefit.

"Andritz has a lot of experience already in the managing of data for enhanced production," he says. "We have had decades of experience in the gathering and managing of data from the pulp and paper industries where we are a major player in the supply and optimization of complex process solutions.

"Since 2017 we have been bringing our digital technology experience over and installing it on to our nonwovens solutions, beginning with our pilot machines. We have implemented data gathering and management now on all

Metris Performance Center at Andritz Perfojet in Montbonnot, France.



our technology groups for nonwovens, including spunlace, wetlaid, needlepunch and calendering product groups. And we are discovering that we are able to offer huge benefits to our customers."

Data

Andritz has installed Metris solutions on a growing number of its nonwovens customers' lines, who are reporting major savings and increased production uptime after the implementation. And thanks to its internal R&D strategy, the Metris solutions are constantly evolving in order to meet the demands of tomorrow.

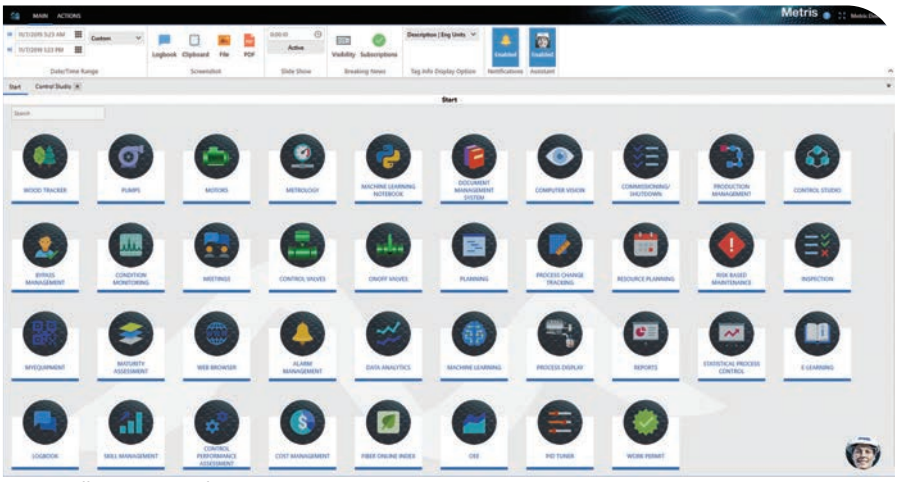
"The gathering of the data is the easy part," continues Butté. "Many digital technology providers have the technology to gather data from production lines – and there is a lot of it, which can be very confusing for the customer. The real secret is to be able to classify the data and to be able to display it in a usable and understandable manner for the operator to then act upon. This is exactly what we have done with Metris, which gathers data, sorts through it, and then displays relevant information on easy-to-read dashboards."

Metris can collect data from right across the complete line, or in particular processes where the customer wants specific information to help manage the line better. The technology can be installed on all nonwovens equipment, whether brand new or already existing, including from suppliers other than Andritz. And importantly, the data recorded is the property of the customer with Andritz saying it guarantees that this data is secure, complying with the highest safety-standards.

Metris can be implemented across the whole production line to enable a number of key operations. These include:

- Production monitoring
- Control of stability for consistent quality
- Cost optimization leading to major savings in raw materials and energy use
- Predictive maintenance

When it comes to production monitoring the Metris platform has been fully adapted to nonwovens fabric production and is tailormade for each production line according to the individual needs of the customer, the company says, adding that this is where its know-how in process, mechanics and electronics of nonwovens lines comes to the fore.



▲ Metris offers a multitude of tools.

▲ All the settings of production line are available at a glance.

▲ Users can customize their own dashboard.

Production monitoring via Metris allows the customer to identify the sweet spots in the line – where there are wins and, most importantly, where there are losses in production performance, as well as data on raw material and energy use.

"This is a flexible and adaptable solution," explains Mario Raison, Division Head of Process and Start-up, Andritz Nonwoven. "In a production unit there is a whole set of people who need different information, for instance the general manager, production manager and maintenance teams.

"Metris, using sensors applied on the line, gathers and then synthesizes the data which is then accessible through a series of apps containing simple but ❱

relevant data, displayed in an easy-to-read format. There are no complicated Excel sheets to have to wade through looking for information. The customer can easily analyze the data and then identifies the areas of the line that are performing well, and those where it's not."

Predictive

A further key function of Metris is its abiliyty to "see into the future" in the vital area predictive maintenance. Again, using sensors applied around the line, machine parts and ancillaries are monitored for anything that might be going wrong, for instance a bearing or motor heating up, or an accumulation of fibre that might damage a machine.

Nicolas Pirard-Branche, Global Service Director, Andritz Nonwoven, explains: "The predictive maintenance element of Metris is much like an insurance policy for your nonwovens line. It will tell you when a bearing is heating up or showing critical wear, or any other abnormal running conditions before eventually the complete line shuts down unplanned.

"This is again where Andritz's knowhow of the nonwovens process is key, and an area where we feel will make a big difference to the customer when it comes to uptime on production lines. It really is a way of foreseeing into the future to avoid potential breakdowns."

Support

Along with the digitalization package, Raison is also keen to stress the expertise offered by Andritz's experienced personnel. "Although this is a digital solution," he says, "we still have the vital human factor with our customers. We are also well aware that digitalization is relatively new to nonwovens production, and some customers need a degree of 'hand-holding' to begin with.

"First of all, when it comes to discussing a digital Metris solutions package, we can show our customers first-hand the improvements that can be made at our pilot plants. Secondly our experts are there when the installation takes place where we make sure the customer and all production or maintenance teams are comfortable with the digitalization technology. Thirdly, once the installation is complete and functioning, we are always there in the background, monitoring the systems, and reporting on where improvements can be made on the production line."

A further key advantage of implementing Metris digitalization on nonwovens production facilities, says Andritz, is that it is not a major hardware or heavy metal investment. As Pirard-Branche notes: "There are major quick wins possible here, with not a huge amount of investment. This is not like a big capex investment that takes years to make a return; our customers see the benefits in a very short time.

"Digitalization is not something our customers in nonwovens need to be afraid of, even if they are completely non-specialist. Thanks to the easy-to-use, intuitive operation of the Metris solution, as well as constant and ongoing support from Andritz, real rewards can be obtained in a short space of time.

"The digital age has arrived into nonwovens production lines, and we are seeing the benefits of bringing it to our customers." **SNW**

Increasing efficiency

Sapro is a fast-growing nonwovens producer located just outside Istanbul, Turkey. As one of the world's largest producers of wet wipes, cost leadership is high on its list of priorities. In early 2019 the company installed a full suite of Metris Digital Solutions on a recently started-up spunlace line.

The package consisted of sensors linked to the Metris platform for measuring and managing a vast array of process operations from pumps and motors to P&ID loops. The system was designed so that operators could clearly see exactly the line's real time usage of raw material, energy, water and also monitors maintenance issues, for instance an overheating pump or a bearing that needed replacing.

"This is a very busy spunlace line, we sometimes have up to 10 or 11 changes of products being made in a day," says Volkan Yavuz, Factory Manager for the spunlace plant. "Before Metris was installed, we didn't really know how long a change for one product to another was taking us, but we soon could see that it was around 15 minutes. Using Metris, and analyzing data from the line, we could see areas that were slowing the change times down and after some concentration on these areas we have now got the changes down to around five minutes. This is a real saving."

Metris in action at Sapro.

The Metris Digital Solution at Sapro is also a viable and real solution for predictive maintenance using a series warning lights and alarms. "Before Metris, each area of operation on the spunlace line was down to the expert knowledge of the operator," adds Yavuz. "Now, with the traffic light system of red, amber and green, we can tell straight away from the monitor display how each part of the process is performing and if we need to carry out any maintenance. If everything is green, we are happy, if its amber we act, the plan is to never get to the red. Metris helps us with that."

Summing up the Metris Digital Solutions implementation on the spunlace line, Managing Director of Sapro, Ceyhun Zincirkiran, added: "This is really the future for improving efficiency at our plant. Even an expert on the line can't be a fortune teller, but Metris is our fortune teller. We can see exactly what we are looking at, trends on the line, figures, graphs and tables all in real time, and then act on them."

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Innovation overdrive at the finishing line

Consulting editor **Adrian Wilson** recently chaired the 1st World Congress on Textile Coating (WCTC), and here reports on some key highlights from its programme.

The finishing and coating of nonwovens and technical textiles are critical stages in determining full suitability for their intended end-use applications.

At the 1st World Congress on Textile Coating (WCTC) held online over four very full afternoons during February, it became evident that the providers of technologies for these processing stages – both established players and new entrants – are currently in innovation overdrive.

Multi-functional

As one of the leading established technology companies in this field, Monforts, headquartered in Mönchengladbach, Germany, has installed many lines for the coating of a wide range of nonwovens and technical textiles.

These range from substrates for digitally-printed soft signage to carbon fabrics for today's high-performance composites, and from filter media which must perform in extreme temperatures to flame retardant barrier fabrics.

Then there are the heavy duty membranes which are employed in the collection and storage of methane in biogas plants, as well as materials equipped with sensors and electrical conductors which are now used as base liners in DSC solar cells, to name just a few examples.

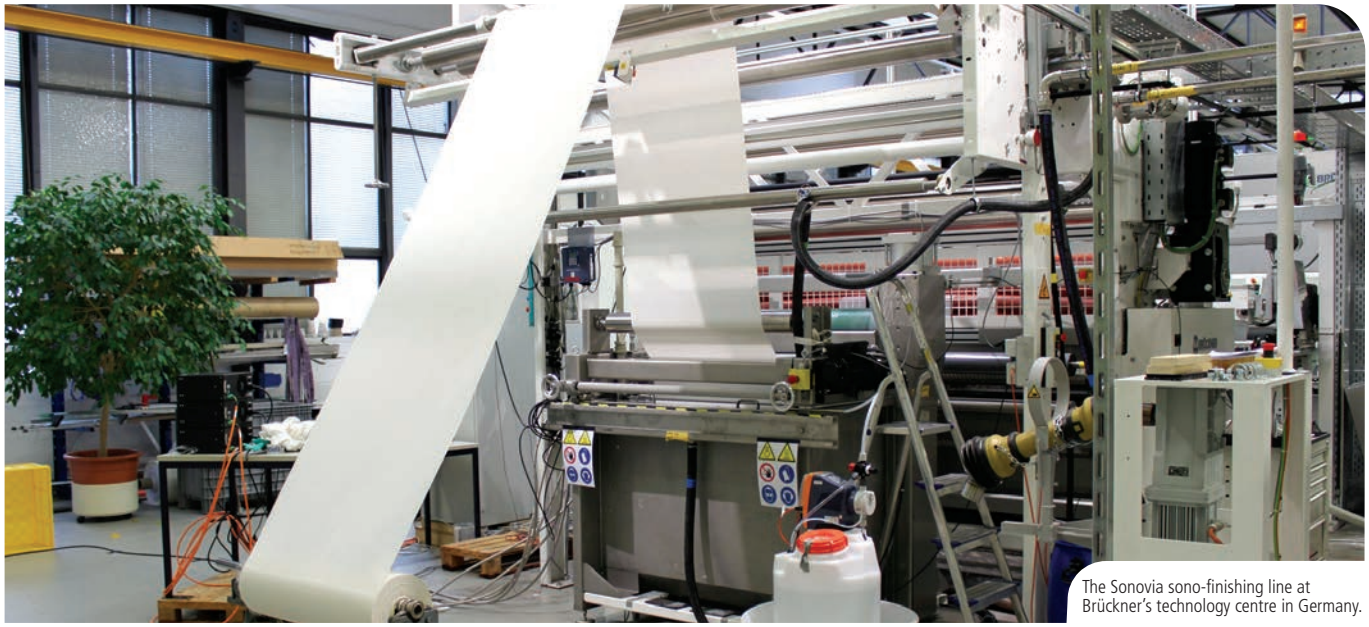
These very different materials, however, have one thing in common – they all require expert coating and finishing for maximum efficiency and the technology to allow for ultimate flexibility. The ability to switch quickly from one fabric formula to the next, without compromising on the economical use of energy or raw materials is also a prerequisite.

Monforts has introduced multi-functional coating heads for its industrial Montex Coat coating units in order to offer a wide range of options, including air knife, roller knife, magnetic roller and foam coating, in addition to screen printing. The company also provides fully explosion-proof lines for solvent-based coatings and for high-temperature processes up to 320°C, such as for PTFE sintering.

Adjustments can be made simply and easily on the Montex Coat unit following the introduction of a new hand-held remote controller.

Wide widths

At the WCTC, the company's head of technical textiles Jürgen Hanel said there had been a notable adoption of magnetic roller coating technology by technical textiles and nonwovens manufacturers who are finishing wide-width materials.



The Sonovia sono-finishing line at Brückner's technology centre in Germany.

> Magnetic roller coating allows uniformity across the entire width of a fabric with no difference in tension – which is particularly important when companies are operating at wide widths.

With this option, it is possible to carry out applications such as full PVC coatings, pigment dyeing or minimal application surface and low penetration treatments.

Typical products this technology is eminently suited to range from tents and awnings, black-out roller blinds and sail cloth to automotive interior fabrics and medical disposables.

"Magnetic roller coating allows a wide range of coatings and finishes to be carried out, while being easy to handle for operators and much easier to clean at the end of the process," Hanel said. "As important as anything, however, is the coating uniformity it guarantees, with no difference in tension across the entire width of the fabric – which is particularly important when companies are operating at wide widths."

With traditional dip coating systems, he added, as well as with many standard knife coating technologies, there is always a difference in the tension – and hence the amount of pressure with which the coating is applied – between the centre and the edges of the wide width fabrics being treated. With the use of a magnetic roller, there is no difference in the pressure being applied anywhere on the fabric.

"Our magnetic roller technology provides finishers with an expanded range of options due to the fully-adjustable positioning of the magnet within the roller," explained Hanel. "With four different magnet positions possible, the roller can be set to operate both as a direct coating system and as an indirect coater. We recommend the use of this technology for companies working with fabrics of over 2.4 metres."

Adjusting the roller surface, rather than changing the finishing formulation, to match the required add-on and viscosity for each coating effect required, leads to much higher output from the line, he added. Adjustments are also now made simply and easily with the new hand-held remote controller which has recently been introduced for the Montex Coat unit.

Sono-finishing

Another long-established leader in the finishing technology field, Brückner, based in Leonberg, Germany, has recently teamed up with ultrasound technology components maker Weber Ultrasonics, of Karlsbad, Germany, and Bar-Ilan, Israel-based Sonovia

The three companies are working to commercially launch of the Sonovia's sono-finishing technology, which notably offers some crucial advantages in the production of antimicrobial nonwovens and textiles.

Sonovia began industrialising its patented sono-finishing process, developed at Bar-Ilan University, in 2017. The one-step process is suitable for all types of fabrics – whether from natural or synthetic fibres or their blends.

The process uses zinc-oxide nanoparticles as an active medium and is based on the physical phenomenon of acoustic cavitation – when exposed to ultrasound, small bubbles continuously form in the solution mixed with the nanoparticles, which then expand and collapse within split seconds.

> With sono-finishing technology, the particles are mechanically embedded, so the antimicrobial properties remain in place for a long time.

This creates high-energy microstreaming patterns, which move at around 500 metres per second. These patterns carry the particles with them and embed them firmly in the textiles.

"This is a distinctive feature of our technology compared to conventional textile finishing processes that use chemical binding agents," explained Professor Aharon Gedanken of Bar-Ilan

University at WCTC. "With sono-finishing technology, the particles are mechanically embedded, so the antimicrobial properties remain in place for a long time. What's more, no polluting binding agents are required in the process, and the use of chemicals can be reduced by up to 50 per cent."

The formation of cavitation bubbles via ultrasound is crucial to ensure the reliable application of the antimicrobial zinc-oxide particles. Standard ultrasonic systems cannot be used for this.

The first system prototype for the sonochemical process has been in use at Brückner's technology centre since early 2019.

In addition to ensuring maximum process reliability, key aspects in its development included meeting high standards in terms of productivity, reliability, sustainability, ease of maintenance and cost effectiveness.

"Although development is not yet complete, initial, conservative calculations suggest potential savings of around 10 per cent from the reduction of chemicals used," said Gedanken.

The new application unit can easily be integrated into existing plants and lines and used for finishing both woven and knitted fabrics, as well as nonwovens and carpeting.

Proven

To prove the lasting and reliable antimicrobial efficacy of sonochemical textile finishing, Sonovia conducted testing with textile research and certification institutes which confirmed that the finished fabrics retain their full antimicrobial properties after multiple wash cycles at high temperatures.

Sonovia now manufactures and sells antimicrobial respiratory masks that use the technology. Tests carried out in summer 2020 revealed more than 99 per cent efficacy against SARS-CoV-2. Additionally, the mask filters 95 per cent of 3 microns particles – the particle size which has been identified by the WHO as relevant to the spread of Covid-19.

The new technology's proven, lasting protective effects, in addition to the user-friendly and sustainable process, make it an optimal solution for finishing clothing for medical and care workers and laundry/linen in hospitals, senior homes, and hotels, as well as many other areas where hygiene and infection control are critical. The fashion and sportswear industries, as well as the automotive sector are also interested in sono-chemically finished textiles. Relevant tests are set to be carried out at Brückner's technology centre starting in the second quarter of 2021.

Functional powders

Fibroline, based in Limonest, France, has developed a portfolio of advanced technologies for achieving the thorough integration of dry functional powders into or onto the surface of fabrics or yarns via a high voltage generator and an alternating electric field.

> "Fibroline, technologies achieve the thorough integration of dry functional powders into or onto the surface of fabrics via a high voltage generator and an alternating electric field."

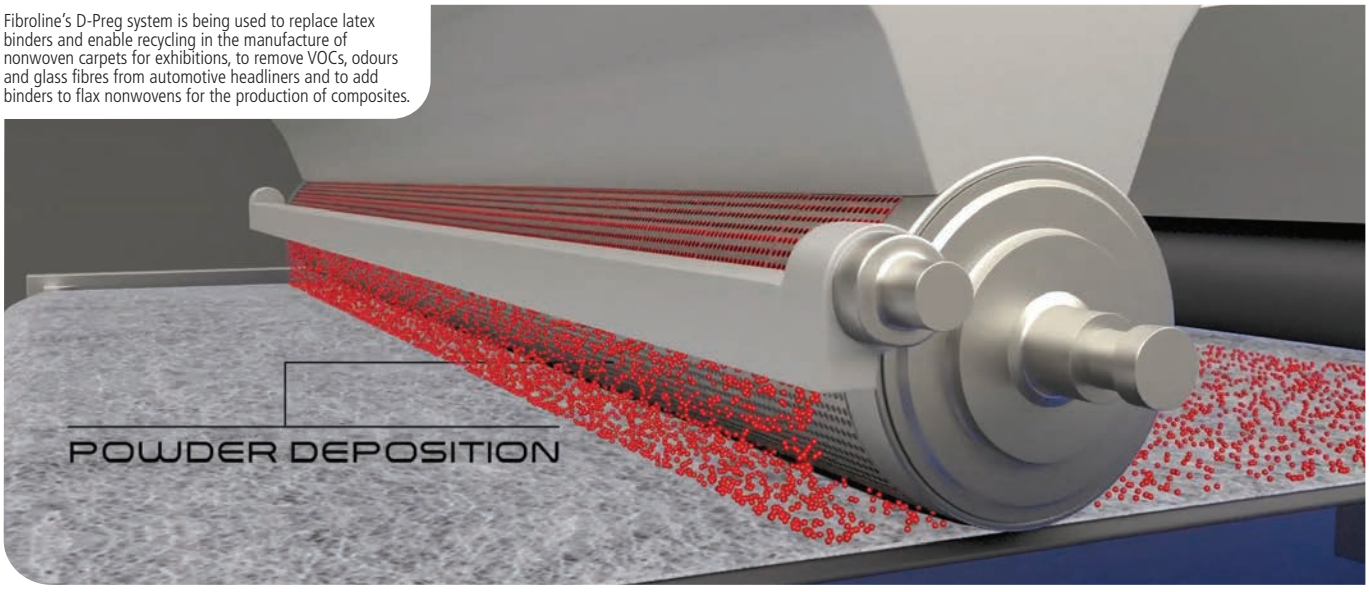
This, explained CTO Joric Mardue, allows for the precise control of the powder distribution and a large range of both powders and substrate supports can be deployed. These are environmentally-friendly processes with extremely low energy consumption, involving no water or solvents.

Partnerships

Fibroline has pursued a successful strategy of working in partnership with its customers – from product development through to industrialisation – and Beaulieu, for example, is employing the Fibroline D-Preg system to replace latex binders and enable recycling in the manufacture of nonwoven carpets for exhibitions. Other companies are employing D-Preg technology to remove VOCs, odours and glass fibres from automotive headliners and to add binders to flax nonwovens for the production of composites.

The T-Preg system has meanwhile been validated by TWE Group, headquartered in Emsdetten, Germany. This technology employs a different electrode to achieve much higher impregnation capacity per

Fibroline's D-Preg system is being used to replace latex binders and enable recycling in the manufacture of nonwoven carpets for exhibitions, to remove VOCs, odours and glass fibres from automotive headliners and to add binders to flax nonwovens for the production of composites.



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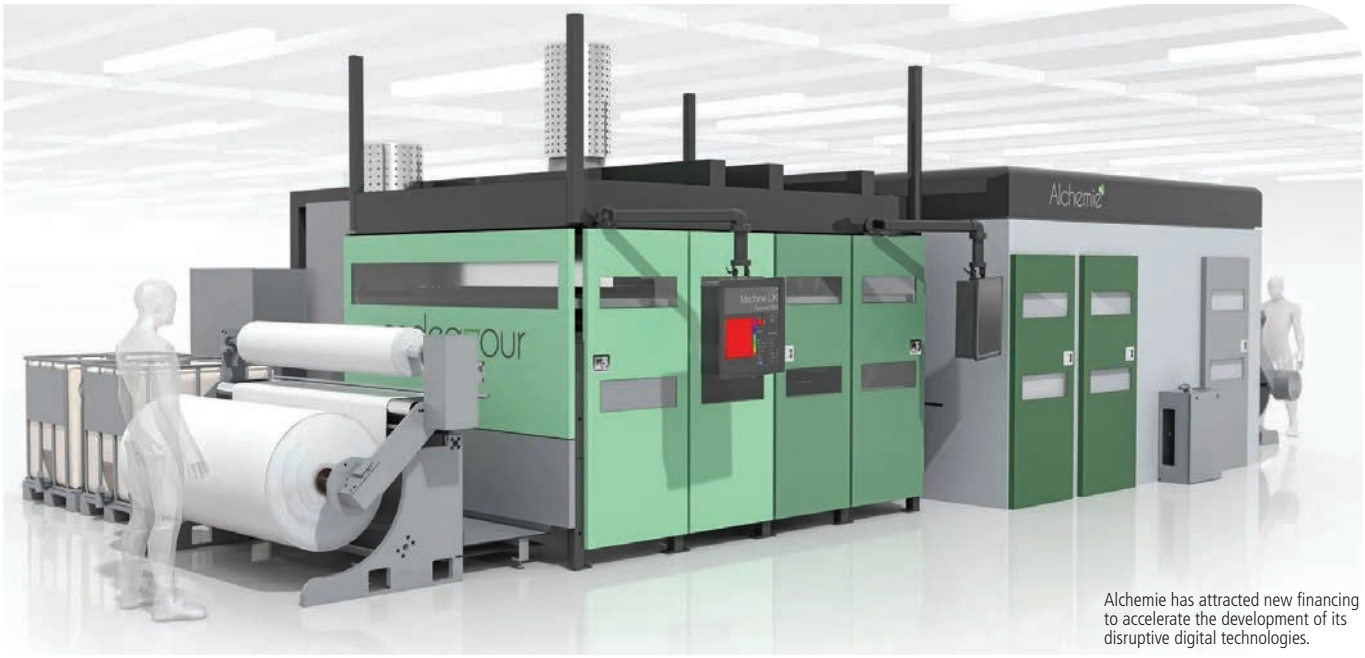

Alchemie has attracted new financing to accelerate the development of its disruptive digital technologies.

linear metre, specifically to load superabsorbent polymers (SAPs) into nonwovens for the absorbent hygiene industry. For this application, much higher operational speeds of up to 500 metres per minute are required, in order for the system to be operated in-line with baby diaper machines. TWE now runs a number of these lines industrially.

Powder coating

S-Preg is a very clean and consistent process for powder coating with low risk of powder dispersion or contamination, with easy cleaning made possible by a removable engraved deposition sleeve.

Among companies partnering with Fibroline to develop this process in France are Armalyne, of Lyon, which is employing it for the application of diamond powders for abrasive polishing pads, and Biomérieux, of Marcy-l'Étoile, which is producing smart bandages that are able to change colour to indicate infections.

A third partner is Euro Wipes, the Nogent-le-Rotrou-based manufacturer of wipes and facemasks for hygiene, cosmetics and healthcare, to add a wide range of active ingredients to its products that are cleaner, based on natural formulas and are preservative-free.

S-Preg is allowing Euro Wipes to design new products based on active substances that are not available in liquid form, such as bio-based wipes, those with localised exfoliating sections and beauty products incorporating encapsulated natural scents and perfumes.

Fibroline owns a large number of patents on its technologies to guarantee its customers reliable worldwide protection and is not an equipment manufacturer, instead licensing out its technologies and know-how. It has established technical co-operations with machine manufacturers, depending on machine specifications and targeted markets.

Alchemie

A new player is Cambridge, UK-based Alchemie Technology, which has already attracted new financing from At One Ventures and H&M CO:LAB, H&M Group's investment arm, to accelerate the development of its disruptive digital technologies.

While colour dyeing of nonwovens is not so often necessary, Alchemie's Endeavour smart waterless technology allows fabric manufacturers to eliminate the production of contaminated wastewater and dramatically reduce the carbon footprint of dyeing.

> "Alchemie's solutions dramatically reduce both the environmental impact and the cost of dyeing and finishing."

Demonstrated to radically reduce lead times and enable lower minimum order sizes, alongside a 50% cost saving compared to traditional technologies, the Endeavour solution has been well received by textile manufacturers and fashion brands worldwide.

The waterless process can achieve high colour consistency and colour fastness and no post dyeing washing steps are necessary. It can deliver any colour shade required and enables on-demand digital colour changeovers in any run length, from a few metres to several kilometres.

At its heart is a unique process that distributes dye molecules deep into the fabric, enabling very high absorption, homogeneous distribution and excellent fixing efficiencies. This is claimed to result in minimal washout, even at very high saturation levels of dye.

Novara

Alchemie has also seen a surge in market demand for its Novara precision digital finishing technology. Novara enables functional coatings to be applied with unparalleled precision, all controlled with real-time digital data.

"The textile manufacturing industry has a significant impact on the environment, and with our Endeavour and Novara technologies, we are disrupting manufacturing processes that are responsible for over 3% of global CO_2 emissions and 20% of global water

pollution," said Alchemie managing director Simon Kew. "Our solutions dramatically reduce both the environmental impact and the cost of dyeing and finishing, which has proven to be a compelling combination. We are building on the momentum we have generated in the market with successful commercial trials of our fabrics and are looking forward to rolling out the first global commercial installations this year."

imogo

Another new player is imogo, which has just installed its first industrial scale Dye-Max spray dyeing line at the plant close to Borås of Swedish commission dyeing company 7H Färgeri – the Nordic region's most complete dyeing and processing plant.

The new line has a working width of 1.8 meters with an operating speed of up to 50 meters for the reactive dyeing of cellulosic fibre-based fabrics. In addition, it can carry out the application of a wide range of fabric pre-treatments and finishing processes, providing the company with unbeatable flexibility in production.

A proven Mini-Max laboratory unit for pre-determining application volumes and colour matching has also been installed at the 7H plant.

imogo, which has just installed its first industrial scale Dye-Max line at the plant close to Borås of Swedish commission dyeing company 7H Färgeri.

> "Imogo's system allows fast changeovers with virtually no waste, high productivity and unmatched production flexibility."

With the potential to slash the use of fresh water, wastewater, energy, and chemicals by as much as 90% compared to conventional jet dyeing systems, the DyeMax has gained considerable attention since the concept was outlined and a prototype machine constructed in 2019.

The application unit of the Dye-Max consists of a closed chamber containing a series of spray cassettes with precision nozzles for accurate and consistent coverage, in combination with the patented imogo Pro Speed valve that controls the volume to be applied.

"We are achieving an extremely low liquor ratio of around 0.5-1 litres per kilo of fabric and we fully control the pickup, applying precisely what is required to the specific fabric," says imogo founding partner Per Stenflo. "Compared to traditional padders there is no contamination of the dyebath or dilution of the dye liquor to worry about."

Fast changeovers with virtually no waste, together with a high production speed, enable a high productivity and unmatched production flexibility.

"The Dye-Max will be implemented in 7H daily production and producers and brands are welcome to visit when the Covid-19 situation allows. They are also welcome to do test productions at 7H to verify the performance on their fabrics," Stenflo said.

Drying

The technologies of Alchemie and imogo are among a number of minimum application digital technologies now being commercialised and claiming major resource savings in terms of water, energy and chemicals, but what about the drying stages for these fabrics?

Applying much smaller amounts of dyes and finishes to fabrics – and much

adphos NRI technology is able to incorporate the highest possible energy densities in the smallest applicable areas without effecting substrates and the surrounding environment.

more precisely than with the conventional dyeing route of running them through vats of liquid – can clearly make a huge difference to the energy required for drying.

The drying technology of adphos, based in Heufeld near Munich, however, goes much further.

At the WCTC, Dr Kai Bär, adphos managing director detailed systems that are being designed for the near-instantaneous drying of fibres, yarns, webs and fabrics after dyeing or coating with its adphosNIR technology.

Wavelengths

The electromagnetic wavelength spectrum which is relevant for thermal and drying processes starts in the UV wavelength and goes through visible light to NIR (near infrared) to mid wave IR and long wave IR.

NIR lies just above visible light. This is where the wavelength of electromagnetic radiation reaches its maximum energy density and optimum physical characteristics.

The proprietary adphosNIR technology now makes it possible to use the unique physical properties of this part of the electromagnetic spectrum in industrial production processes.

It is based on the NIR wavelength range of 800nm up to 1,200nm. With a peak of 800nm, the adphos technology is able to incorporate the highest possible energy densities in the smallest applicable areas without effecting substrates and the surrounding environment.

The technology combines NIR light energy, management of this energy, integrated hot air knives and moisture extraction.

Energy density

Its underlying principle resembles the way a microwave oven works. Microwaves activate the water molecules directly, in contrast to a conventional oven that has to heat up the substrate before the energy reaches the target, the water or solvent molecules. The electromagnetic waves of adphosNIR technology have the highest energy densities, which effect molecules of various substances. As a result, adphosNIR technology can be implemented in a multitude of industrial processes and market places.

adphosNIR radiation quickly enters into the depth of a coating to remove the water and solvents from its entire thickness compared to conventional infrared and hot air technologies, where the energy is absorbed at the surface and is then slowly conducted into the coating.

> “The electromagnetic waves of adphosNIR technology have the highest energy densities which effect molecules of various substances.”

There is a similar process with powder coatings and plastics. The powder is heated, melted and cured over through the entire thickness of the coating. As there is no conduction of heat required using adphosNIR technology, powder coatings can be melted and polymerised within seconds instead of minutes.

In the adphosNIR wavelength range, most plastics have a high radiation transparency. The beams immediately penetrate deeply and heating is performed rapidly and evenly with extremely short processing times. There is also a clear reduction in energy consumption because the system does not have to be preheated. In addition, it takes up a lot less space.

Shorter heating paths also enable optimum integration into production machines and equipment and an integrated control loop also reduces the number of rejects produced.

Needless to say, a number of the new developers of dyeing, finishing and coating technologies are now talking closely to adphos. **SNW**

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Commercial scale Spinnova plant in 2022

Finland is playing a key role in the advancement of recycled fibre production for the nonwovens industry.

Spinnova and Suzano – the world's largest wood pulp producer – will make an estimated €22 million investment to build the first commercial scale Spinnova production facility in Finland.

The total investment, including all needed infrastructure such as real estate, is estimated to be some €50 million. Spinnova's sustainable fibre, created out of wood and waste without the use of harmful chemicals, will be available for global textile and nonwovens brands in 2022.

The new, industrial scale production unit will be located in Jyväskylä, Finland, home of Spinnova's R&D hub and pilot facility. Production will be managed and operated by a new joint venture company owned 50/50 by Spinnova and, Suzano.

"Every leading textile brand is looking for ways to minimise their emissions and ecological footprint, and build a circular material foundation for their products," says Spinnova's CEO and co-founder Janne Poranen. "We feel humble and proud that soon we will shortly be able to provide brands with our new, disruptively sustainable fibre and fabrics."

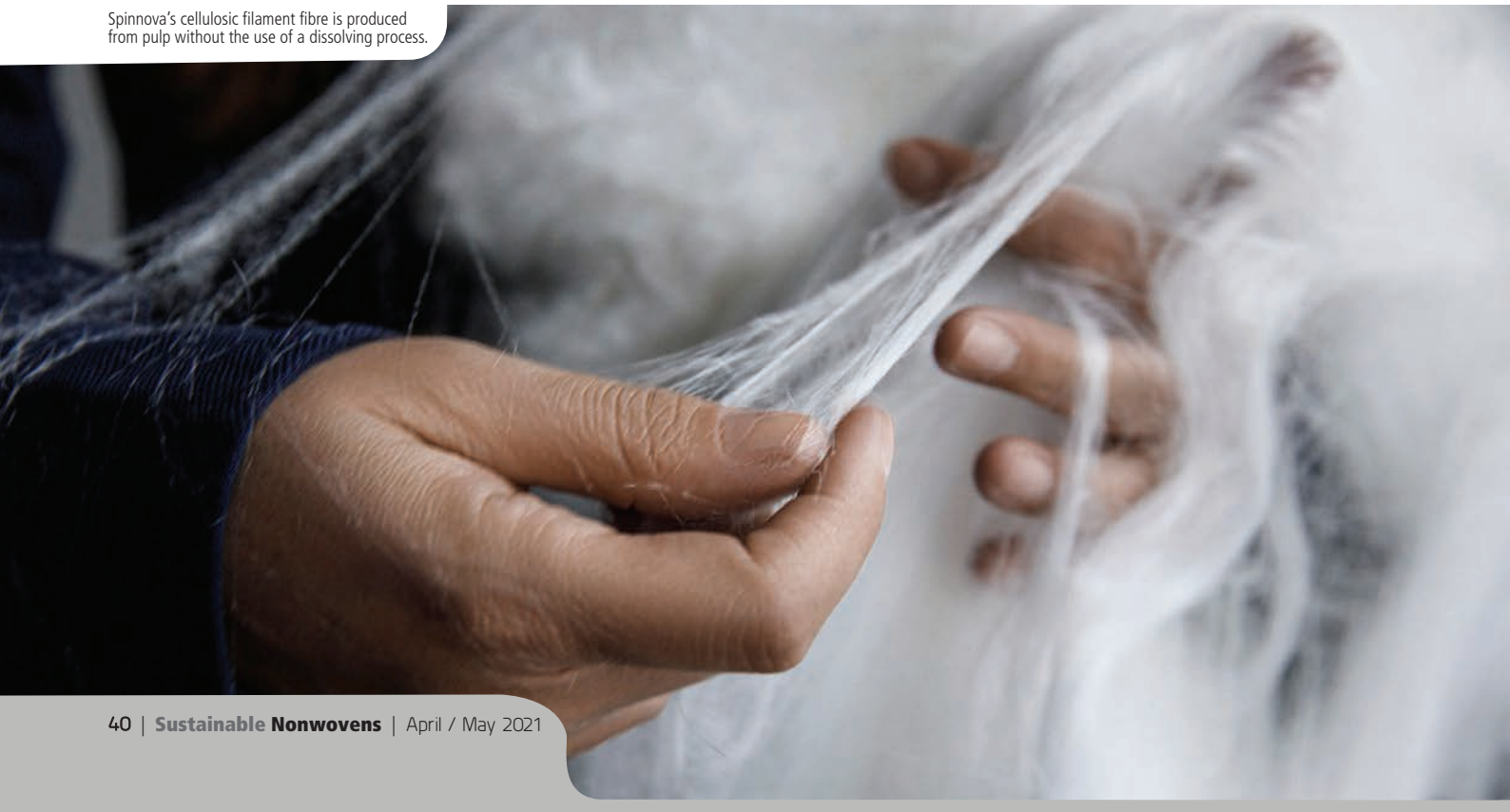
Suzano, headquartered in São Paulo, Brazil is a world leader in the production of eucalyptus pulp and has expanded its operations to create sustainable solutions derived from trees. In the joint venture, Spinnova will be the exclusive technology provider, while Suzano will ensure the supply of sustainably produced microfibrillated cellulose obtained from eucalyptus planted by Suzano in Brazil. The fibre produced will be sold under the Spinnova trademark.

"Suzano uses only planted trees in its production processes," says its chief technology and innovation officer, Fernando Bertolucci. "This renewable raw material is being combined with Spinnova's technology for producing fibres that are more sustainable than the options currently available in the textile industry, which is aligned with the demands of contemporary society."

With a process that uses no harmful chemicals and 99% less water than the cotton value chain, Spinnova fibre creates minimal CO_2 emissions, is quickly biodegradable and contains no microplastics. The fact that these fibres can be recycled into a new fibre again and again makes the fibre disruptively circular. The technology enables fibre production from wood but also from textile waste or agricultural waste such as wheat or barley straw.

H&M collaboration

Spinnova materials have been developed in collaboration with leading fashion brands such as Danish clothing company



Spinnova's cellulosic filament fibre is produced from pulp without the use of a dissolving process.

Touchpoint aims to push the boundaries of how modern workwear can be done for a more sustainable and circular industry.

Bestseller, Finnish fashion house Marimekko, and Norwegian outdoor brand Bergans. The H&M Group has now has joined this group.

"Our ambition is to become fully circular, and we are continuously testing and actively looking to further integrate the use of sustainable materials," said Mattias Bodin, head of H&M's Circular Innovation Lab. "We see Spinnova as having great potential to address several of the sustainability challenges we face today."

Most leading apparel brands are committed to cut greenhouse gas emissions by 30% by 2030. Since the cradle to gate emissions of Spinnova fibre are considerably less than those of cotton, it's a radical improvement to existing textile fibres. Spinnova's fibre already works well in blends with other natural fibres, especially cotton. In big volumes, Spinnova blends alone could have a big positive environmental impact.

The company expects to fill the new factory's production capacity during this year.

Post Consumer

Elsewhere in Finland, a new recycling plant for turning waste clothing into durable nonwovens is being established this year.

Rester Oy, based in Paimio, will have the capacity to recycle an annual 12,000 tons of post-consumer textiles – about 10% of the country's total textile waste.

Its two production lines will turn the waste clothing into recycled fibres for various industrial nonwoven applications such as insulating materials for the construction and shipping industries, acoustic panels, filters and geotextiles.

The main investor is Finnish workwear brand Touchpoint, which aims to offer the widest selection of environmentally preferred materials and also to introduce carbon neutral workwear by 2023.

"We made a big decision in 2020 to invest in the new plant, which will be the solution for our end-of-life garments," said CEO Noora Salonoja.

She was speaking during a webinar held by the Consulate General of Finland in New York, *From Waste to Fashion*, held on March 25th, as an official partner event of Circular City Week New York.

"We are involved in a lot of publicly-funded and private projects involving the circularity of textiles and Rester is just one example of this," said Salonoja. "We want to really push the boundaries of how modern workwear can be done for a more sustainable and circular industry."

Among other projects, Touchpoint has worked on prototype aprons with Spinnova which are 100% wood based, do not include any harmful chemicals in production and are also biodegradable.

"Touchpoint has to partner with the best and this is just one example," said Salonoja. "We provide garments for the military, healthcare, hotels and restaurants and our approach when we start a new workwear project begins with design, which we believe dictates 80% of a garment's footprint, as well as its suitability for recycling. We always look for environmentally preferred materials whether recycled polyester, organic cotton or now more than ever these new cellulose-based fibres, but the baseline we for our workwear is it has to be uncompromisingly functional, comfortable and durable."

Touchpoint's previous prototypes of recycling routes included working with Hesberger, a fast food hamburger chain in Finland in 2017, turning its waste workwear into composite furniture that is now used in the chain's restaurants.

"We are committed to taking back all textiles that we deliver or produce for our customers as of 2021 following our investment in Rester," Salonoja concluded.

The Rester plant is the second major new Scandinavian recycling operation to be announced in 2021 so far – Sysav Industri AB is now operating the world's first fully automated sorting plant for textiles recycling in Malmö, Sweden. **SNW**

Zero-carbon determination at Lenzing

Despite the impact of the coronavirus pandemic, cellulosic fibre specialist Lenzing marked a number of significant sustainability milestones in 2020

Notable developments for Lenzing in 2020 included the introduction of the first Tencel branded CarbonNeutral cellulosic fibres and the establishment of the Renewable Carbon Initiative aimed at speeding up the transition from oil-based products.

The company also won the Austrian State Prize for Innovation for its Web Technology – a process combining fibre and nonwovens production in a single step and moving cellulosics into the spunmelt category while setting new standards in terms of efficiency, circularity and ecological sustainability.

2020 also saw Lenzing and Hof University of Applied Sciences open a new Nonwoven Development Center (VEZ), a key aim of which is to support the development of sustainable solutions for the hygiene, body care and medical nonwovens sectors.

As a strategic partner at the VEZ, Lenzing has access to a new spunlacing line and other nonwoven technologies at the campus in Munchberg. This offers new opportunities for sustainable fibre and nonwoven innovations for a wide range of applications across the nonwovens sector.

The access to the latest state-of-the-art machinery and technologies, which its customers and partners are also able to use to process Lenzing fibres, should enable the company to enhance its collaboration with brands and private labels in the cosmetics and hygiene sectors as well helping it explore new wound care products to extend its offering for medical applications.

With its Veocel branded wood-based cellulose fibers, Lenzing says it has been laying the foundation for many years for sustainable nonwoven applications and will test and develop innovative ideas using the new possibilities offered by the VEZ.

With the spunlace pilot plant at the VEZ, as well as supporting customers and partners more intensively in the development of new nonwoven applications, Lenzing says it will also be able to promote cooperation in marketing.

Demand

In an extremely difficult market created by Covid-19 in 2020, Lenzing also introduced a broad package of measures to ensure service to customers was uninterrupted, despite pressure on both fibre prices and volumes. In total, sales fell to €1.63 billion from €2.1 billion in 2019 leading to a net loss of –€10.6 million, compared to profit of €114.9 million in 2019.

A recovery of demand in the second half of the year, primarily for wood-based specialty fibres such as Tencel Modal and Ecovero, had a positive impact on revenue and earnings but could not compensate for overall losses.

"Strategically, we remain fully on track and the implementation of our key projects in Brazil and Thailand continue to proceed according to plan," said CEO Stefan Doboczky. "We are consistently pursuing a major goal of making a zero-carbon future come true."

Expenditures related to the major projects in Brazil and Thailand nearly tripled to €668.8 million in 2020.

They are aimed at expanding the internal production of pulp, increasing the share of speciality fibres and implementing climate targets in line with the company's sCore TEN corporate strategy.

The construction of the dissolving wood pulp plant in Brazil continues to progress according to plan and commissioning is scheduled for the first half of 2022.

The total investment in the new speciality fibres plant in Thailand, which will have a capacity of an annual 100,000 tons. amounts to roughly €400 million. Construction work started in the second half of 2019 and production is expected to be launched at the end of 2021.

Going forward, the company expects a continued increase in demand for sustainably produced fibres for the textile and apparel industry as well as for the nonwovens sector. This trend is likely to continue unabated after the Covid-19 pandemic, not least due to new legislative initiatives.

With the prospect of a broad population being vaccinated against Covid-19 in the near future, optimism and confidence in an early return to normality are also growing. However, the currently positive environment is still characterized by a high level of uncertainty and earnings visibility remains limited. Taking into account the above factors, Lenzing Group expects operating result to develop in 2021 at a similar level to the pre-crisis year of 2019. **SNW**

Supply chain security

The nonwovens supply chain is continuing to invest in the PPE sector.

In the United States, Shawmut Corporation, together with its primary N95 mask production investor, The Fallon Company, has announced the launch of its NIOSH-approved Protex N95 mask with the patent-pending Protex ADC all-day-comfort system for prolonged use.

The technical textile specialist has also announced the creation of a new Health & Safety business that will produce US-made, health and safety products, including its Protex line.

Production lines are now operating with a goal of creating up to 10 million masks per month by the end of 2021 to meet continued demand for domestically produced PPE.

The company has also announced a multi-year distribution contract for its N95 masks with Thermo Fisher Scientific Inc. representing one of many early orders for the Protex N95 particulate respirator.

Shawmut's new domestic N95 manufacturing operation is based at the company's West Bridgewater, Mass. headquarters and was created through a purpose-driven partnership with The Fallon Company and supported by a grant from Massachusetts's Manufacturing Emergency Response Team (MERT), a program created to support in-state manufacturing of critical PPE items, including N95 masks, protective gowns, hand sanitizer, and ventilators.

The new manufacturing facility, which went from concept to production in six months, is expected to create as many as 300 new jobs in Massachusetts.

As part of its US-made Protex N95 initiative, Shawmut retrofitted nearly 70,000 square feet of industrial space to accommodate production. Its N95 facilities include a multi-million-dollar investment of new equipment from Germany's Reifenhäuser Reicofil for the production of meltblown fabrics as well as a fully automated and flexible molded-cup-mask production system which has proved to be critical in providing a unique combination of a secure fit and lasting comfort to broaden usage of the Protex N95 particulate respirator.

Keen to overcome user critiques that N95s are uncomfortable to wear for long periods of time, Shawmut designed custom-engineered, thermoform molds with feedback from front line workers and other users, to achieve a better fitting mask that doesn't provide excessive pressure on the face and skin. With the combined use of 3D scanning, in-house testing and rapid prototyping, Shawmut innovated its patent-pending Protex ADC all-day-comfort system that combines a uniquely soft but strong inner layer, incredibly lightweight but highly efficient and effective inner filtration layer, and high-sealing viscoelastic nose foam for a secure but comfortable seal. The result is an N95 mask performance with less air resistance, cooler and less stale air inside the mask for easier breathability, less eyeglass fogging, and less pressure on the face for all-day-comfort and wear.

The Protex N95 Particulate Respirator Model SR9520 also offers a minimum of 95% filtration efficiency, meeting the government standard for N95s. The molded-cup-style respirator – preferred by most users for its performance – is made with Shawmut's proprietary high-efficiency, bi-layer, meltblown filtration material offering a comfortable fit for extended wear.

Biodegradable

FPInnovations has successfully developed a biodegradable mask ready to be manufactured in Canada and ready for public use. The biodegradable mask is now ready for commercialization by Canadian manufacturers.

The collaborative research and scientific innovation between FPInnovations and its partners allowed for the successful development of a fully biodegradable mask using its unique pilot-scale paper-machine.

In addition to the mask filtering materials, FPInnovations has identified and successfully incorporated elastic ear loops and nose pieces that are biodegradable. An important part of the success is also that the mask components can be assembled readily on existing commercial mask-converting machines.

The green Personal Protective Equipment (PPE) mask has been assessed by external labs according to international norms. It is hoped that the line will set the standard for ❱

A biodegradable mask from FPI.

non-medical masks in terms of filtration, breathability, and biodegradability. With its unique product design, FPInnovations has also recently attained the more demanding ASTM norms of filtration efficiency and breathability that are required for procedure masks.

"The development of a biodegradable mask clearly shows that stimulating the bioeconomy can contribute to a cleaner environment in Canada," said Stéphane Renou, president and chief executive officer of FPInnovations. "The outstanding collective scientific and technological expertise of the forest sector has been key to the success and speed of this project, and is proof that together, we are capable of bringing eco-friendly bio-sourced products through the pipeline from research to market within just months."

"Biodegradable masks made from Canada's sustainably managed forests: what a great example of the ingenuity of Canada's forest sector," added Seamus O'Regan, Minister of Natural Resources of Canada. "Keeping Canadians safe, and protecting our environment."

FPInnovations is a private not-for-profit research and development centre with professional researchers who create solutions in support of the Canadian forest sector's global competitiveness.

It is positioned to perform state-of-the-art research, develop advanced technologies, and deliver innovative solutions to complex problems for every area of the sector's value chain, from forest operations to consumer and industrial products. Its R&D laboratories are located in Québec City, Montreal, and Vancouver, and it has technology-transfer offices across Canada. FPInnovations is associated with Innoventures Canada (I-CAN), a non-for-profit consortium that aims to improve Canada's performance in commercializing research and that includes Canada's top RTOs.

Breathability

Artofix, a subsidiary of Canadian warp knitter Duvaltex, the largest manufacturer of office furnishing textiles in North America, has developed an N95-type mask approved by Health Canada.

The mask, manufactured through a predominantly Canadian supply chain, is said to offer a new standard in breathability and comfort for this type of personal protective medical equipment.

The company is now seeking a supply contract with the government. In the short term, Artofix will be able to meet demand from Quebec and Canadian hospitals for N95 masks by producing close to 100,000 units per week. In the coming months, the production capacity could even be increased to more than 400,000 units weekly.

At the onset of the COVID-19 pandemic, Artofix responded to the government's call and mobilized its production line to develop an N95-type mask. According to the company, it differs from what is currently available on the market by its superior comfort, even when worn for several hours. In fact, because of its ergonomic shape and increased comfort, Artofix describes the mask as the ideal personal protective equipment for health care professionals in the fight against COVID-19.

The critical materials that ensure a filtration level of upwards of 95 per cent of particles are entirely manufactured by Canadian companies while also helping the healthcare network to mitigate the risks of volatile international markets and the protectionist reflexes of foreign countries.

Artofix hopes that its product will convince the federal government to promptly approve a long-term supply contract. The mask has been licensed by Health Canada, having already been subjected to stringent laboratory testing by the public health agency for critical particle filtration and resistance to inhalation and exhalation. The Canadian 95PFE certification, modelled on the American N95 standard, ensures that the mask filters a minimum of 95% of particles and aerosols in the air. The certification also confirms Artofix as a medical equipment supplier and ensures that the company has rigorous quality control processes in place.

Nanofibres

Also in Canada, BIG-nano Corporation is involved in three of 12 projects that are receiving more than $27 million in funding from Next Generation Manufacturing Canada (NGen), the industry-led not-for-profit organisation that leads the country's Advanced Manufacturing Supercluster.

BIG-nano has developed a proprietary gas-assisted jetting process to manufacture nanofibres. Its technique streams high-velocity gas through a needle, while a polymer liquid solution is simultaneously accelerated to the tip of the same nozzle. The two streams interact, bringing the polymer from molten to fibre state and producing a poly (vinyl alcohol) nonwoven fibre mat.

The company is now partnering with fellow Canadian companies Swenco, IPC Technologies dba Prescientx, APC Filtration, and Titan Clean Energy to develop meltblown nanofibre filter material for the production of PPE and air purification filters. This project aims to use Big-nano's technology to reduce Canada's reliance on foreign suppliers for critical meltblown material, creating a globally competitive cost structure and mass production capacity in the country.

In a second project, BIG-nano and IPC Technologies dba Prescientx plan to scale up the production of a disposable, self-sanitizing, sterilizable, reusable N100 facemask. This new mask will set a higher filtration bar for performance than the current N95 masks, using new made-in-Canada materials and automation equipment. The collaborative team forms an Ontario-based hub for respiratory PPE manufacturing excellence that includes the project partners as well as Eclipse Automation, JOMI Engineering, Hamilton Health Sciences, and the universities of Waterloo, Hamilton, Guelph and McMaster. This combined partner expertise will enable the development of spin-off products including reusable masks with disposable filters for medical, industrial and consumer products. The automation equipment can also be repurposed to produce other types of masks and non-mask products such as HVAC filters.

In a third project, BIG-nano will work with Titan Clean Energy Panther, K+S Potash and Canada Masq to develop a 100% Canadian supply of biodegradable meltblown fabric for use in PPE and HEPA filters. The project will produce biodegradable meltblown resin and

fabric that is comprised of 100% renewable Canadian biomaterials.

Further projects involve copper infused antimicrobial textiles, nanomaterials for long-lasting antimicrobial shielding textiles, improving the manufacturing process for medical grade surgical and procedural facemasks, and the development of a self-contained, sustainable supply chain for disposable isolation gowns and related PPE such as coveralls, masks, caps and foot covers.

The projects follow NGen's Strategic Supply Challenge held last summer, which challenged companies to employ advanced manufacturing technologies to build a sustainable, made-in-Canada, cost competitive supply of critical products that can be used in the fight against Covid-19 and beyond. The challenge funding supporting the twelve Canadian companies and their project partners, represents a total combined investment of over $60 million to develop advanced manufacturing projects.

"These projects are not simply investments in products to address the pandemic," said Jayson Myers, CEO of NGen. "They are investments in advanced manufacturing processes and technologies that will help meet the immediate needs created by Covid-19, while also developing a sustainable, globally competitive and cost-effective domestic supply that can be applied to industry needs beyond the pandemic."

Testing

In an interesting development in California, colour-changing strips integrated into nonwoven facemasks that work on the same principle as pregnancy testing kits may soon be used to detect Covid-19 in a user's breath or saliva.

A University of California San Diego project, which received $1.3 million from the US National Institutes of Health (NIH), is aimed at providing simple, affordable and reliable surveillance for Covid-19 infections that can be done daily and easily implemented in resource-poor settings. It is part of the NIHRapid Acceleration of Diagnostics Radical (RADx-rad) programme.

"In many ways, masks are the perfect 'wearable' sensor for our current world," says Jesse Jokerst, professor of nanoengineering at the UC San Diego Jacobs School of Engineering and principal investigator of the project. "We're taking what many people are already wearing and repurposing them, so we can quickly and easily identify new infections and protect vulnerable communities."

Colour changing strips in a facemask.

The test strips, which can be put on any mask, are being designed to detect the presence of protein-cleaving molecules, called proteases, produced from infection with the SARS-CoV-2 virus.

The idea is that as the user breathes through the mask, particles – including SARS-CoV-2 proteases if the user is infected – will accumulate in the test strip. At the end of the day or during a mask change, the user will conduct the test. The test strip is equipped with a blister pack that the user squeezes, releasing nanoparticles that change colour in the presence of the SARS-CoV-2 proteases. A control line on the test strip will show what a positive result should look like. This would be similar to checking the results of a home pregnancy test.

"Think of this as a surveillance approach, similar to having a smoke detector in the house," said Jokerst. "It would just sit in the background every day and if it gets triggered, then you know there's a problem and that's when you would look into it with more sophisticated testing."

The test strips can be easily mass produced via roll-to-roll processing to keep costs down to a few cents per strip.

"We want this to be affordable enough for daily testing," Jokerst said. "This would allow facilities at high risk such as group homes, prisons, dialysis clinics and homeless shelters to monitor for new infections earlier and more frequently to reduce spread."

Jokerst is teaming up with researchers at UC San Diego School of Medicine to test the strips first on Covid-19-positive saliva samples, then on patients and healthcare workers at Veterans Affairs San Diego Healthcare System.

"The proteases we're detecting here are the same ones present in infections with the original SARS virus from 2003 as well as the MERS virus, so it would not be too far of a stretch to imagine that we could still benefit from this work later on should future pandemics emerge," he said. "Even with vaccination efforts underway, this surveillance approach could be deployed in parts of the world where vaccines are not yet available or still limited in distribution.

Hanes

Apparel giant HanesBrands, meanwhile, which recorded net sales for PPE worth $959 million in 2020, has said it no longer views the business as a long-term growth opportunity.

In October 2020, the proprietary surgical facemask developed by HanesBrands with North Carolina State University was authorised by the US Food and Drug Administration for use by health care professionals as personal protective equipment.

The mask uses the unique spunbond fabric developed by the Nonwovens Institute eliminating the need for a third meltblown layer. The spunbond fabric is composed of two different polymer materials to make a single fibre that has significant strength and bulk that is as effective in filtration as current materials on the market.

Europe

In Europe, packaging and paper specialist Mondi has started up its new production lines at its plant in Gronau, Germany, to produce meltblown nonwoven fabric and up to one million surgical face masks per day.

The investment in the new machines was announced in May 2020 in the months following the initial outbreak of the coronavirus pandemic. With all the critical components manufactured on site, the fully automated high-speed ›

machines will now enable the company to produce up 700 masks per minute which is said to be approximately seven times higher than the standard face mask production line.

With the new lines, Mondi, which has over 50 years of experience in the production and processing of films, nonwovens and elastic components for hygiene products, says it is building up a local value chain in Germany to address the needs of the pandemic.

"We identified the shortage in meltblown nonwoven fabric in Germany early on in the pandemic last year and reacted swiftly to set up the production of high quality medical face masks," said Jürgen Schneider, managing director Mondi Gronau. "With our high speed production set-up and certifications in place, Mondi Gronau is ideally positioned to supply high quality medical masks that offer reliable protection and high comfort from the moment they are put on to when they are taken off."

The masks are certified as a medical product by the German Johner Institute as well as meeting the German standards OekoTex and Dermatest. With this production, Mondi Gronau will be directly addressing the needs of the German health sector including hospitals, pharmacies and specialised medical retailers.

Mondi face masks.

Asia

In Asia, Bangladesh is aiming to become a major manufacturer and exporter of personal protective equipment (PPE) to rival China, following the opening of $100 million plant by Beximco.

Beximco is the largest multinational holding conglomerate in Bangladesh and its new 25-acre, vertically-integrated PPE Park will make meltblown nonwovens and laminated fabrics in different weights. These will be converted into isolation and surgical gowns, N95 facemasks, disposable scrubs and woven and knitted shoe covers and head covers.

The new plant is located in Savar, 24 kilometres to the northwest of Dhaka and will serve both domestic and international markets. It is aimed at increasing the diversity of the supply of PPE, ensuring that it is not totally dependent on any one country.

"The new facility will help manufacturers, buyers, retailers, brands and the government with required services, since all the services will be available under one roof, encompassing European, American and other global regulatory standards," said Beximco CEO Syed Naved Husain at the inauguration ceremony earlier this month. "Beximco has steadily contributed to the meteoric rise of Bangladesh as a manufacturing hub in South Asia and I am delighted with the new development. It will put the country on the world's PPE manufacturing map."

Through its new Beximco Health division, the company already has agreements to supply PPE, including masks and protective gowns, to major US healthcare service providers.

UK-headquartered product testing and certification company Intertek has worked with Beximco to develop a Centre of Excellence at the PPE Park. This covers an area of 12,000 square feet, with major sections for physical testing and respiratory analysis, as well as chemical and micro-biological testing, ensuring that it meets the regulatory and quality assurance requirements of global PPE manufacturers.

Last year, at the height of the first wave of the Covid-19 pandemic, Beximco pivoted from producing garments to protective equipment within a matter of weeks, learning the specialised fabrication techniques, setting up production lines, and producing 6.5 million gowns for distribution to the United States through the US Federal Emergency Management Agency. **SNW**

Counterfeit facemask fight gathers pace

Federal authorities in the US have seized hundreds of thousands of counterfeit 3M facemasks that were on the verge of being distributed.

This latest find in a warehouse on the East coast means that authorities have now seized more than 10 million fake 3M brand N95 masks in just the last few weeks, the result of an ongoing investigation into counterfeits sold in at least five states to hospitals, medical facilities and government agencies.

With the flow of counterfeit N95 masks showing little sign of slowing, 3M said it was committed to helping combat fraudulent activity in connection with its products and the COVID-19 pandemic. As it continues to increase production of critically needed N95 respirators, 3M said it was working with law enforcement authorities around the world to stop counterfeiting and remove fake products from the market to protect frontline workers fighting COVID-19.

3M has also recently assisted authorities in Washington, Minnesota, New York and other states confirming that N95 respirators purchased from distributors with no relationship to 3M are not authentic 3M products. Counterfeit respirators are not tested and are not NIOSH approved while the materials they are made of is unknown – as is their fit and performance.

3M acted early in the pandemic to increase production of critical supplies like N95 respirators. At the same time, the company launched a global effort to combat fraud, counterfeiting and price gouging to help protect the public against those who try to exploit the demand for critical 3M products during a pandemic. To date, 3M's fraud team has investigated more than 11,200 reports of suspected fraud, counterfeiting and price gouging. 3M said it had removed tens of thousands of deceptive social media posts and e-commerce listings and has filed more than 29 lawsuits to fight fraud, donating all monetary damages from these lawsuits to COVID-19 related nonprofits.

The company is now making more than 95 million respirators a month in the U.S. – quadrupling production over the last 12 months. Globally, it tripled production to 2 billion respirators in 2020.

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Material Matters

US launch for sustainable diaper brand

NEW YORK - A new sustainable and socially responsible diaper brand has launched in the U.S.

Believe Diapers, which says that one in three U.S. families struggles to afford diapers, offers products made with bamboo, a renewable resource that is also hypoallergenic, antimicrobial and odour resistant. These super-soft, absorbent bamboo diapers are also free of all harmful chemicals, preservatives and additives.

As part of its offering Believe Diapers is also working with the Good+Foundation to provide a 1-for-1 charitable donation model, donating one diaper to a U.S. family in need for every Believe Diaper purchased. "Born of the insight that one in three U.S. families struggles to afford diapers, philanthropy is at the Brand's core," the company said in a statement. "Diaper need has a negative ripple effect, impacting an entire family's ability to work and attend school. To help address the shortage, Believe Diapers has pledged to donate one million diapers to U.S. families in need at launch, in addition to their 1-for-1 diaper matching donations."

Believe Diapers' CEO Joe Masi explained: "A little over a year ago, my wife [co-founder Uli Herzner] and I became aware of the extreme diaper need in the U.S. and furthermore, the implications caused by that lack of resource. From post-partum depression to the inability to enroll children in daycare, we founded Believe Diapers in an effort to alleviate some of this large-scale need."

Diaper need is also a cause familiar to Good+Foundation. "Last year we saw a 500% increase in diaper requests as under-resourced families continue to struggle with diaper need in the United States," said Katherine Snider, CEO of Good+Foundation. "Tens of thousands of families across the country will benefit from this generous donation from Believe Diapers."

"While everyone deserves diaper security, creating a sustainable diaper out of respect to the environment is also extremely important to us – especially for the next generation around which our diapers will be placed," Uli Herzner added. "As diapers are a leading cause of pollution, Believe Diapers are crafted with renewable and sustainable materials in an effort to lessen the environmental impact and footprint associated with disposable goods."

Essity introduces menstrual cup in Nordic region

Hygiene and health company Essity is continuing to expand its range toward more sustainable products through the launch of Libresse V-Cup, a reusable menstrual cup.

Launched in Denmark, Finland, Norway and Sweden, the Libresse V-Cup is made from 100% soft medical-grade silicone. The menstrual cup's soft material and form help it to remain securely in place, offering protection for up to 12 hours. It is reusable and durable, and therefore helps to reduce the amount of waste.

Beaulieu launches EqoCycle yarns

"We are proud to launch Libresse V-Cup in the Nordic region, a market where a growing number of consumers are looking for this type of solution," said Astrid Schenk-Almagro, Global Brand Director Feminine Care, Essity. "The menstrual cup is the second sustainable and re-usable solution within Essity's Feminine Care assortment after launching absorbent and washable underwear earlier this year. As a leading global hygiene and health company, it is important for us to have this type of product in our range providing consumers with greater freedom to choose the product that best suits their lifestyle."

Essity is one of the world's largest manufacturers of feminine care products, the third largest in Europe and the market leader in Latin America where it has previously launched a menstrual cup.

The company offers a broad product range, including pads, panty liners, tampons, intimate soaps, intimate wipes and washable absorbent underwear under well-known brands such as Libresse, Bodyform, Nana, Saba and Nosotras.

WIELSBEKE - B.I.G. Yarns, a division of Beaulieu International Group has launched EqoCycle, a fully recyclable PA6 yarn with 75% recycled content, offering the same high-quality performance as virgin PA6 yarn.

The new recycled yarn, mainly based on post-industrial waste, supports contract, automotive and residential carpet manufacturers with a drop-in circular solution to reduce the ecological footprint of their end products.

EqoCycle is made with recycled granulates derived from pre-consumer recycled and regenerated PA6, certified by Control Union for Global Recycled Standard (GRS) Certification.

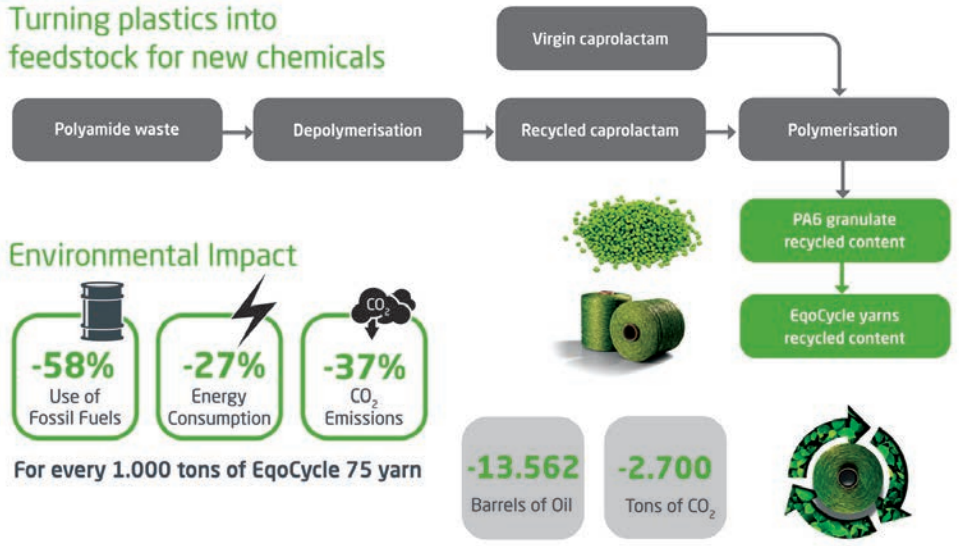
The use of less virgin materials implicates a decrease of fossil fuels by 58% and a 27% decrease in energy consumption. Furthermore, EqoCycle yarns allow a reduction of 37% of CO_2 eq./kg compared to fossil based yarns. The environmental impacts of EqoCycle with 75% recycled content were calculated through an LCA analysis, verified according to ISO 14025 and EN 15804+A1 and published in an Environmental Product Declaration (EPD registration number S-P-02415).

Customers have the assurance that for every 1,000 tons of EqoCycle yarn, 13,562 barrels of oil are saved and 2,700 tons of CO_2 emissions are reduced, compared to PA6 traditionally made from virgin materials.

Emmanuel Colchen, General Manager Yarns Division, commented: "EqoCycle is a perfect example of how higher resource efficiency in our industry can promote greater circularity in our customers' industries. Minimizing waste, re-using materials, and saving energy and carbon emissions in production, it provides our customers and carpet brands with a new sustainable alternative that won't compromise their end-product performance but will support their increasing focus on CO_2 reduction and global warming potential. All part of our wider commitment to encourage decoupling from the need for only virgin feedstocks and moving towards a circular economy for yarns and soft flooring industries."

EqoCycle is the latest circular solution in B.I.G. Yarns' PA6 portfolio, joining EqoBalance PA6, based on biomass balance renewable resources, which offers up to 75% CO_2 reduction.

Both exemplify the ongoing investment in developing new products that better serve customers' needs in a sustainable way, B.I.G said.



European launch for sustainable hygiene brand

HELSINKI - Wolva, described as Europe's first CO2 negative women's hygiene brand, has now launched.

Starting with sanitary pads and pantyliners, Wolva is launching first to selected European markets. As well as being climate positive, products are also 100% vegan and biodegradeable.

According to Emilia Nordström, who is responsible for R&D Solutions at Delipap and the 'mother' of Wolva, the products have a very small carbon foot print to start with. They are mainly made of cellulose whilst the factory where Wolva products are made, runs on renewable energy and it is located near the forests where the material comes from in order to keep the operations as low emitting as possible.

" We wanted to create a product that would tick all the boxes from being super sustainable to being super comfy to being super safe," Nordström said. "With Wolva, I'm proud to say, we now have such a product. For us the goal was to have a sustainable, yet disposable, product with as low emissions as possible before we start compensating, or in our case, overcompensating, the remaining emissions. The CO_2 emissions from our individual products range from 0,008 to 0,034 kg (cradle-to-gate / CO_2 equivalent).

Despite the fact that there has been a lot of research behind the product making it both sustainable and absorbent, all Wolva products are also said to be super comfortable. With a soft, genuine 100% organic cotton layer, they fit well and are suitable for even the most sensitive skins. There are no traditional plastics, no dyes, no chlorine bleach nor any fragrances. Wolva's sanitary pad is also certified with EU Ecolabel.

Wolva is created and made by Delipap, a Finnish family owned company which has been developing and designing sustainable feminine and baby care products for more than 40 years.

"The company was founded by my grandfather in 1979," Nordström explained. "He was a very innovative man and started to think about having much cleaner and safer hygiene products. He patented a new structure for hygiene products which lead to creating the company's first diapers and gradually our first sanitary pads."

Wolva products are available now through its own online store wolva.com and at Amazon and will expand to other European countries later this year.

Smart diaper care for adults from Ontex

AALST – Leading international personal hygiene group Ontex has developed a smart solution to improve incontinence care for patients, accelerating innovation in adult care, a category that has seen good and steady growth in recent years.

The solution comprises a top-quality diaper with a printed sensor, a transmitter clipped onto the diaper and an app for mobile devices. The combination accurately determines the saturation level of the diaper as well as the risk of leakage and alerts caregivers to when it is necessary to change the diaper. This enables tailored, individual continence support for patients which contributes to the well-being of users, families and caregivers alike. The smart diaper also reduces the environmental impact of care institutions by decreasing unnecessary diaper usage and savings on laundry.

"With this smart diaper, our objective is to develop and promote better continence management and improve the quality of life of those suffering from this condition," said Xavier Lambrecht, president of the Ontex Healthcare Division. "It will also be a huge help to caregivers. The new smart diaper is a result of our long-standing innovation program at our R&D centre for adult care. It will reduce the time hospital and care home staff spend on continence care, freeing up time and budget for other essential care tasks."

The new Ontex smart diaper has successfully passed the first stage of its validation after six weeks of testing in normal conditions of use at a senior care facility in Belgium. Results show the potential to reduce cases of urine leaks on clothes and linen by up to 50%, alleviating one of the most burdensome and costly tasks in institutions. The validation process will continue during the first half of 2021, with a gradual commercial launch in the second quarter of this year.

Incontinence is a very common condition. Almost one in ten people in Belgium already suffer from it or will at some time. Even if incontinence is most common among the elderly,

it affects all ages of the population. It is perceived as an embarrassing condition and finding the right support and personal hygiene product can be a challenge for people suffering from it. Moreover, hospitals and elderly care facilities face tremendous time and budget pressure to take care of patients. Incontinence is one of the most prevalent conditions in age care facilities and one of the most important components of the cost for caring in institutions.
www.ontex.com

Ahlstrom- Munksjö unveils new sustainable product line

STOCKHOLM - Ahlstrom-Munksjö's has launched a new product portfolio, which consists of a full suite of fabrics for medical and civil use face masks, including biodegradable and compostable materials such PLA and cellulosics.

The TenderGuard product portfolio consists of exceptionally soft, comfortable, and protective fabrics including TenderGuard BioBased and BioFilter fabrics, which are designed for civil use and source control for infectious disease.

The fabrics are biodegradable and compostable under controlled conditions according to European Norm EN13432.

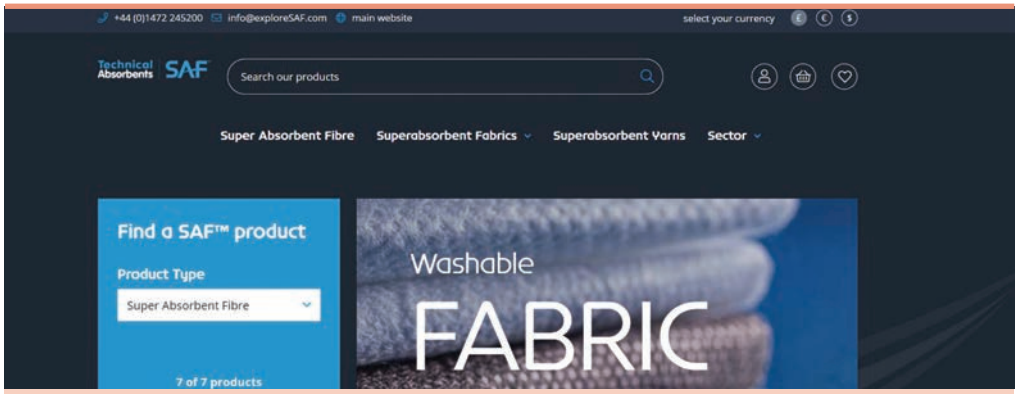
TenderGuard BioBased can be used as an inner or outer coverstock layer of a civil facemask. It is highly breathable, biocompatible, and non-irritating, so it's gentle on the skin and comfortable to wear for long durations. Mainly comprised of polylactic acid, which is a biopolymer made from sustainable and renewable sources, TenderGuard BioBased is an alternative to synthetic spunbond material.

TenderGuard BioFilter is a sustainable filter media that can be used as a single layer or combined as a double layer for higher filtration performance in a barrier face covering. This unique fabric is made up of a special blend of cellulosic and cellulose-based manmade fibers making the filter media 100% bio-based.

"Using technology from our business and the expertise of the medical product development team, we were able to advance product functionality in our smart fiber-based solutions," commented Stuart Nixon, VP, Beverage and Casing, Ahlstrom-Munksjö "Having products that are sustainable, renewable, and biocompatible allows for the opportunity to provide environmentally friendly options."

Also available are TenderGuard Natural and Smooth protective fabrics which, designed for medical uses such as facemasks, are hypoallergenic, and environmentally friendly.

TenderGuard Natural is a wetlaid fabric that can be used as the inner or outer



New online shop for Superabsorbent samples

GRIMSBY - The UK's Technical Absorbents, manufacturer of Super Absorbent Fibre (SAF), nonwoven fabrics and yarns, has recently launched the next generation of its online sample shop.

The company first introduced an ecommerce facility back in 2015 to provide prospective customers with a clearer and more concise overview of its product portfolio, while also making it easier to buy small samples for initial trials and testing.

The shop has been designed to flow seamlessly from the company's main website and allow visitors to search for samples by product type and market sector.

"In developing the new sample site it was important for us to look at it from the visitors' perspective," explained General Manager Mike Parkington. "In some instances, our technology is new to people. To make the navigation easy, and allow them to find the most suitable products, was the key priority."

The shop is home to samples of SAF, SAF Fabrics and SAF Yarns. Visitors can drill down further by fabric type and can also use a set of filter parameters to help them find what they are looking for.

"We have a very diverse customer base," continued Parkington, "from companies large and small – multinationals to start-ups. People looking for samples can be R&D Specialists, new product development personnel,dprocurement managers, product Designers, even owners and managing directors. Some will know exactly what they want, others will be trying to work that out as they search. The simpler we can make the whole process the better.

"Selling online was a huge leap for Technical Absorbents but one that has really added value over the past few years. Having products listed on the internet for people to view and buy has really stimulated interest in our growing portfolio of superabsorbent products. It really does make it easier for prospective customers to access information, understand the capabilities of our technology and speed up initial material selection."

Samples can be purchased from the website in GBP, Dollars and Euros and shipped globally. Technical advice can be provided beforehand if required. Upon receipt of samples, customers are offered technical advice/support if this is required. For further details go to: http://shop.techabsorbents.com

layer of a facemask. It is environmentally friendly, and the hypoallergic inner layer makes it super soft for the wearer. With both layers together, TenderGuard Natural achieves nearly 50% Bacterial Filtration Efficiency, which is remarkable without a filtration layer included.

TenderGuard Smooth consists of bicomponent spunbond fabrics that are made with a proprietary technology that minimises raised fibres. This creates a smooth surface to help eliminate any skin irritation, which is essential when it comes to a face mask. TenderGuard Smooth is hypoallergenic, so it is gentler on the skin, making it ideal to wear for long durations.

"Ahlstrom-Munksjö is one of the world's leading players in sustainable solutions. With the addition of TenderGuard face mask fabrics, it further underscores our mission to expand the role for a sustainable everyday life while providing a protective and comfortable product," added Lionel Bonte, VP, Medical, Ahlstrom-Munksjö.

Toray announces Ultrasuede award winner

Tokyo – Toray Industries and Labelhood have announced the winner of the 2021 Ultrasuede x Labelhood Innovation Award, part of the company's promotion of its highly functional ultra-fine fibre nonwoven fabric with a suede texture.

Winner Jacques Wei is the founder of his namesake women's fashion brand. The award was in recognition of the highly accomplished and forward-thinking approach in Mr. Wei's design, which combines classic elements with simple, contemporary silhouettes. According to Toray, his ethos is in keeping with Toray's commitment to the ongoing evolution of the Ultrasuede brand.

Jacques Wei will unveil its Fall/Winter 2021 collection incorporating Ultrasuede on April 10 at a Labelhood event during Shanghai Fashion Week.

In its third year, this award is in collaboration with Labelhood, a fashion incubator for young independent designers in China. The two created this award program in keeping with their complementary visions. Toray's is to foster social prosperity and a better future for generations to come while Labelhood's is to invigorate the Chinese fashion scene.

Toray brought out Ultrasuede in 1970. Over the years, applications for this stylish, high performance material have extended from fashion to encompass everything from automotive, aircraft, and other interiors to accessories for mobile devices.

Toray said it was looking forward to collaborating with Mr. Wei in expanding the potential of the Ultrasuede brand in China's vibrant fashion scene.

Jacques Wei brought out his women's label in 2019. Its inspiration is the enduring influence of traditional French fashion brands. He has garnered acclaim for combining classic elements and contemporary silhouettes in his designs. His off-the-rack apparel employs the precise and meticulous tailoring and other intricate techniques of haute couture and menswear and features glamorous and delicate materials in clean, simple lines that accentuate urban feminine chic.

JOA launches expandable absorbent core wrap

SHEBOYGAN FALLS - Curt G. Joa has developed an expandable absorbent core product, which is said to result in thinner products offering higher absorbency.

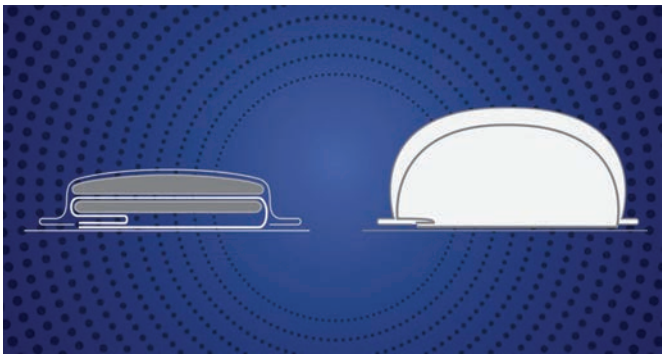
The new patent-pending design from JOA allows the core to expand within the containment wrap, regardless of the blended fluff and Super Absorbent Polymer (SAP) ratio. Essentially, the core grows as the product is insulted.

The expandable wrap allows cores to be designed with higher amounts of SAP, which, the company says, results in thinner products that have higher absorbency.

Chris Nelson, business development manager and co-inventor, explains: "As SAP designs evolve, products now contain higher quantities of SAP, and these new SAP designs absorb more fluid than ever before. Performance of the core depends on allowing the SAP to work. Therefore, there was a need for accommodating the core swell and expansion of SAP as fluid transfers through the product."

"JOA machines ensure core integrity by keeping core materials contained, reducing the risk of leakage which decreases skin irritation and improves skin health," added Scott Roehrborn, machine platform manager and co-inventor.

Further product design features include core edge definition that rivals die cut, balanced SAP distribution with more consistent core weights, and single or dual dusting layer capability with homogenous blend of fluff and SAP.



NorthShore launches new colours for Megamax

GREEN OAKS - Heralded as the most absorbent adult diaper in the U.S., Megamax, launched in 2018, has launched two new colours to its incontinence product line - black and tie-dye.

Megamax is now the only absorbent tab-style brief in the country available in tie-dye.

"To help spread the word about Megamax and how life-changing our products

can be, we decided to launch a national campaign to reach individuals and their loved ones managing incontinence," said Adam Greenberg, president and founder of NorthShore. "The goal is to increase awareness that incontinence is very common, it is not something to be ashamed of, there is help and you can live life and leave the house with the right products and supplies … like those offered at NorthShore.com."

NorthShore products offer up to 3-times the leak protection of leading store brands. In addition to Megamax, NorthShore Care Supply offers a variety of lighter absorbent briefs and protective underwear with up to 6-8 hours of protection as well as pads, liners and wipes.

Sustainable packaging for Sontara

BASEL - Nonwoven fabric manufacturer Jacob Holm has introduced a new, sustainable range of packaging for its popular Sontara EC and Sontara Automotive EMEA Portfolio.

"The upgraded Sontara EC and Sontara Automotive packaging isn't simply a new look," the company said. "Responding to evolving customers' needs, Jacob Holm has re-marketed its lines with new packaging formats, such as folded wipes and also included additional dispensers and handles to the existing put-ups."

Along with new package artwork, Jacob Holm is refreshing these products with smart and sustainable packaging materials. All of the boxed wipes in these applications are now packaged in boxes made of recycled material, indicated by the FSC logo, and the boxes themselves have been redesigned for better handling and more protection of the products during shipping, further reducing waste.

"Appearances matter, but even more important is what's inside the packaging—and the company itself," Jacob Holm added. "This exciting re-launch represents another step forward in Jacob Holm's aggressive commitment to sustainability and continuous innovation."

Mann+Hummel increases recycled material levels

LUDWIGSBURG - Filtration specialist Mann+Hummel has increased the amount of recycled material it uses in its latest air filtration products.

In its new C 24 005 air filter technology, for example, the company now uses up to six 1.5-litre PET bottles per one square metre of filter medium.

"One square metre of filter medium now contains plastic from up to six 1.5-liter PET bottles. This meant we could triple the proportion of recycled fibres and make an important contribution to the conservation of resources," Jens Weine, product range manager, Air and Cabin Air Filters at Mann-Filter, explained.

Further air filter products will now follow in the footsteps of the C 24 005, with the company noting that the green colour of their recycled fibers makes these air filters look different to the others. They are also designed to meet the replacement intervals prescribed by the vehicle manufacturer even under dusty conditions, and are characterized by their flame-retardant properties.

Using the multilayer MICROGRADE A-S medium, the separation efficiency of the C 24 005 air filter is up to 99.5%, when tested with ISO-certified test dust. With its high dirt holding capacity throughout the entire service interval, the air filter requires only 30% of the filter medium area of traditional air filters based on cellulose media.

The fibres are certified according to Standard 100 by Oeko-Tex, meaning they are tested for pollutants and declared non-harmful.

Ahlstrom-Munksjö in new filtration partnership

STOCKHOLM - Ahlstrom-Munksjö has set up a partnership with Italian filter producer Virgis S.P.A for the distribution of a new HEPA filtration solution produced by Webasto.

The HFT300 and HFT600 filtration technology is designed to make indoor environments safer against COVID-19 as well as other viral and bacterial organisms.

The launch of the high-efficiency particulate air filter (HEPA) devices in Europe in 2020 has been meeting the growing demand for increased protection in vehicles and buildings. The main purpose of these filter devices is to protect the passengers and the operators in emergency vehicles, school buses and public transportation vehicles. The first units were primarily installed in ambulances in Germany and the U.S., as well as in public buses in the Netherlands and school buses in the U.S. The promotion of the filters for private sectors such as offices, restaurants and museums is also being rolled out.

"The spread of COVID-19 and the consequent increase in the global demand for protective materials required many companies to rapidly adapt, leverage their expertise and innovate," Ahlstrom-Munksjö said in a statement. "Ahlstrom-Munksjö used its long-term experience and leadership in the manufacture of filters to develop a suitable media for HEPA H14, manufactured in a compact cartridge that represents the core of the Webasto device."

The new HFT 300 and HFT 600 devices combine two main features to reduce viral loads in ambient air. They offer an extremely high virus removal efficiency thanks to HEPA H14 filters, and also generate very high air volume flow for the rapid and complete filtration of the air every single minute.

The HFT 300 and HFT 600 devices are specifically designed to filter the air, removing 99.995% of particulates corresponding to SARS/COVID-19 virus sizes (0.1 micrometers) and effectively reducing the risk of infection. Ultra-compact and light, these devices can be installed in less than 30 minutes.

The device complies with the International HEPA Filter standards WHO / CDC / ECDC, and is compliant with European Medical Device Directive CE 47/2007.

Lydall looks to a bright 2021

MANCHESTER – Lydall supplied enough meltblown nonwoven fabric for almost a billion facemasks in 2020 and reports a strong end to its financial year.

The company is currently in the process of a $40 million meltblown capacity expansion, which will provide it with the means to provide materials for over two billion N95 respirators annually going forward.

"In late December, we successfully commissioned a new fine fibre meltblown production line in Rochester, New Hampshire, and reached full capacity in January," said president and CEO Sara A. Greenstein. "Additional capacity at Rochester and St.

Andritz to supply Wetlace CP line to Turkey

GRAZ - International technology Group Andritz has received an order from Lotus Teknik of Turkey, to supply a neXline wetlace CP (carded pulp) line for the production of biodegradable, plastic-free wet wipes.

The line is scheduled for start-up by the end of 2021.

The neXline wetlace CP line is equipped with the latest generation stock preparation equipment, including approach flow and fan pump, opening and blending, TT card, wetlaid forming unit for pulp application, a hydroentanglement system, filtration unit, dewatering, and through-air drying. All components are perfectly designed to produce a first-class biodegradable wipe.

The Wetlace CP process is said to combine the benefits of two forming technologies (inline drylaid and wetlaid web forming process) with bonding by hydroentanglement. Natural fibers can be processed smoothly and generate a high-performance and cost-efficient wipe that is fully biodegradable and plastic-free.

Andritz developed the new neXline Wetlace CP line in order to serve the new market trend of sustainable wipes. Lotus Teknik supported the development from a roll goods producer and converter perspective. The partnership follows the successful installation of an Andritz high-capacity spunlace line some years ago.

The Wetlace CP new generation of production technology for biodegradable wipes has resulted from Andritz's extensive knowledge and considerable history of providing technologies for wood-based industries, spunlace and wetlaid roll goods, and the strong collaboration with Lotus Teknik.

Mr. Ceyhun Zincirkiran, co-owner and managing director of Lotus Teknik, said: "This new line will help us to serve our customers with state-of-the-art biodegradable and sustainable products. These wipes will set new benchmarks in the market and secure our position as one of the industry leaders in wipes production."

Lotus Teknik is a major nonwoven roll good producer and a member of the Sapro group. Sapro is based in Istanbul, Turkey, and is one of the top three producers of wet wipes globally. The company produces, converts, and supplies some 120 million wipes a day for personal, household, and industrial use, exporting 70% of its production to countries all across Europe and to the Middle East, the USA, Canada and Australia.

Rivalain in France is on schedule for production in the early third quarter of this year and all of these projects are expected to be strong profitable growth contributors in 2021."

In the fourth quarter of 2020 the company achieved net sales of $210.3 million, up by $17 million, or 8.8% compared to the fourth quarter of 2019.

Operating income of $4.5 million was also up by $73 million dollars from the fourth quarter of 2019.

Full year sales of $764 million were down by $73.3 million on the $837.4 million achieved in 2019, and the company recorded an overall loss of $62 million for the year to December 31st, 2020.

Strong demand continued in the fourth quarter of 2020, however, for speciality filtration products, and a sharp recovery in sealing products was experienced, with only a slight anticipated dip in the profits of the company's Technical Nonwovens business, despite still very challenging conditions.

"Over the course of 2020 we navigated a global pandemic, a shutdown of global automotive production, ongoing supply chain disruptions and uncertain economic and political environments and have emerged a stronger and more agile company," Ms Greenstein said. "We anticipate continued healthy demand and order activity across all three of our business segments as the end markets we serve recover from a tumultuous 2020."

New dates for Filtech

COLOGNE - The Filtech exhibition, originally scheduled for this year has been postponed to 2022.

Due to the continued rapid spread of the corona pandemic, the organizers of have decided to postpone this combination of trade show and congress to March 8-10, 2022.

"Much as our many exhibitors and speakers would like to share their knowledge and expertise with an audience of interested visitors, judging by the many in-depth discussions we had time and again, it became clear that holding a face-to-face event is not an option in the current situation," said Suzanne Abetz from Filtech Exhibitions Germany, the event organizer.

Essity to acquire Asaleo Care

STOCKHOLM - Essity has entered an agreement to acquire the remaining shares in Australian hygiene company Asaleo Care.

The deal will see Essity, which is already the largest shareholder in Asaleo with 36.2% of the shares, acquire the remaining 63.8% for AUD 1.40 cash per share.

For Essity, the deal will give it a strong platform for further growth in the region. Asaleo Care manufactures and markets personal care and professional hygiene products in Australia, New Zealand and Fiji and consumer tissue materials in New Zealand and Fiji. Its portfolio of brands includes Libra, Handee Ultra, Purex, Sorbent, Deeko, Viti and Orchid, and the global brands TENA and Tork through a license agreement with Essity.

Trützschler & Voith deliver WLS line to Spanish firm

AMEZKETA - Trützschler Nonwovens and its long term partner Voith have delivered a new Wet-Laid Spunlacing line to Spanish paper manufacturer Papel Aralar.

The PM 5 wet-laid technology, which started running in December, was developed as a joint project by both companies specifically for the wipes sector and is capable of producing adult and baby wet wipes that are completely plastic-free, flushable and biodegradable. With the recent investment, Aralar now has two WLS lines with a total production capacity of 45,000 tons/year.

"The successful start-up of PM 5 is an important step forward in our company's sustainability strategy," said Senén Amunarriz, CEO of Papel Aralar. "And it is Voith's innovative papermaking solutions and know-how that are contributing to this success. Our decision to invest in this state-of-the-art new production line was driven by the forecast growth in demand for biodegradable substrates for wet wipe production."

"We are happy and proud to partner with Papel Aralar and to provide them, together with Trützschler, with our efficient and sustainable papermaking technologies," added Marcos Garcia de la Torre, Managing Director Voith Paper Spain. "Thanks to the Aralar-Trützschler-Voith team and the close collaboration we were able to carry out a smooth and timely start-up."

As a full-line supplier, Voith supplied the BlueLine stock preparation, the main components of the XcelLine paper machine and a comprehensive automation and control package from one single source. The HydroFormer, which is one of the main components of the new system, draws on Voith's extensive experience in the papermaking and pulp industries. With this technology, the suspension is heavily diluted to produce nonwoven materials made completely of cellulose, a renewable resource. In addition to the HydroFormer, Voith has supplied the BlueLine stock preparation, a master reel, and the wet end process for the new system.

Trützschler Nonwovens completed the production line with the well-proven AquaJet in an innovative configuration for hydroentangling (spunlacing) and an energy-efficient multi-drum dryer. The expertise and experience of the Trützschler company form the basis of the web bonding and drying components that have been adapted to the needs of the wet-laid process.

People


Richard Altice


Dr. Ashish Diwanji


Lee Ellen Dreschler


Barbara Lawless


David K. Smith


Mike Tuck


Robert Weilminster

INDA, the Association of the Nonwoven Fabrics Industry, has announced the membership election of seven industry leaders to serve on its Board of Directors for a three-year term. These accomplished professionals represent a cross-section of membership and bring a high level of expertise and insight to the management of the association. They are:

- Richard Altice, president and CEO, NatureWorks
- Dr. Ashish Diwanji, president, Lydall Performance Materials Inc.
- Lee Ellen Dreschler, senior vice president Corporate R&D, The Procter & Gamble Co.
- Barbara Lawless, Business director, Nonwoven Medical Fabrics, Precision Fabrics Group Inc.
- David K. Smith, senior vice president Engineered Performance Products Autovation, Milliken & Company
- Mike Tuck, vice president Global Product Supply, Procurement, and Manufacturing, Owens and Minor Products Division
- Robert Weilminster, president, U.S. and Canada – Hygiene, Berry Global

INDA's Board of Directors provides strategic stewardship for the Association. The Board provides oversight of INDA's finances and direction for its operating plans as well as counsel to the President to organize and perform activities that contribute to the success of the nonwovens industry and its members.

Dr. Stefan Koenig has been appointed as managing director at **Optima Packaging Group**. Together with Hans Buehler (managing director/CEO), Gerhard Breu (chairman, Optima Pharma Division) and Jan Glass (CFO), Koenig will be responsible for continuing the development of the Optima Group. The primary focus will be on products and markets. He will also be tasked with the strategic development and increased internationalization of the Optima Consumer Division and other subsidiaries.


Ettore Paolini.

International technology Group **Andritz** has appointed Ettore Paolini as new vice president of service at Andritz Nonwoven and general manager of Andritz Diatec.

His focus will be to provide excellent service to customers and to further develop the service offerings of Andritz Nonwoven to create value-added for its customers.

Paolini comments: "I am very proud to be part of the strong Andritz Nonwoven team and I'm looking forward to my new tasks and projects. We will further develop our range of services, including digital service solutions, in a constant effort to ensure operational excellence for our customers. I will also work closely with the Andritz Diatec team to support all customers in the converting industry with state-of-the-art technology and services while also helping them to remain highly competitive in terms of cost and delivery time."

Paolini will head Andritz Diatec together with Roberto Della Rovere.

The **Borealis Supervisory Board** has announced the appointment of Thomas Gangl as new CEO of Borealis AG, effective 1 April 2021. Thomas Gangl succeeds Alfred Stern, who assumes the role of OMV's Executive Board member for Chemicals & Materials.

With Gangl, Borealis gains an exceptional manager and expert from among OMV's ranks. With over 20 years of experience in OMV, he has not only played a significant part in shaping the refining and petrochemicals business in the OMV Group but was also responsible for establishing chemical recycling and thereby laying the foundation for OMV's circular economy strategy.

Paper Converting Machine Company (PCMC), the supplier of high-performance converting machinery for the tissue, nonwovens, package-printing and bag-converting industries worldwide—announced that Stan Blakney has accepted the position of president of its global operations. In addition to leading the company's U.S. business, as he has since February 2019, Blakney now will assume leadership of operations in Italy and Serbia as well.

Since Blakney joined PCMC, he has led the company's expansion in flexographic-printing, bag-converting and hygiene solutions, while also continuing to drive growth in tissue converting and packaging.

The Procter & Gamble Company announced that its Board of Directors has appointed B. Marc Allen, chief strategy officer and senior vice president of strategy and corporate development at The Boeing Company, to the company's Board of Directors.

Allen joined Boeing, a leading global aerospace and defense company, in 2007. In his current role, he is responsible for the company's overarching strategy, including long-term planning, global business and corporate development, and strategic investments, acquisitions and divestitures.

"We are excited to welcome Marc to the Board. Marc has deep knowledge of international operations, trade, law and government relations," said David Taylor, P&G chairman, president and CEO.

H.B. Fuller has named Kirstin Hedin to vice president, product management and marketing for the Hygiene, Health, and Consumables adhesives business.

In this role, Hedin is leading the global marketing, product line management, and pricing teams responsible for driving customer focused innovation, building growth strategies for product lines, and enhancing the customer experience. Hedin has been with H.B. Fuller for 11 years and has held roles in strategic sourcing, sales, marketing, and previously led the Hygiene/Nonwovens adhesives business in North America.

April 2021

OUTLOOK 2021 - 21st-23rd
The world's premier nonwovens personal care and hygiene & wipes products conference
Online
Web: https://www.edana.org/events/outlook/outlook-europe

May 2021

14 to 4 June
EDANA online intermediate course
Everything you need to know about nonwovens
Web: https://www.edana.org/trainings/online-nonwoven-training/online-nonwovens-intermediate-course

June 2021

8
Absorbent Hygiene Training Course
Professional Development training
INDA Headquarters
Cary, North Caroline
Web: http://www.inda.org/training/absorbent-hygiene.php

9-10
International Nonwovens Symposium
Online
Web: https://www.edana.org/events/nonwovens-symposium/internationalnon-wovens-symposium

12-16
ITMA Asia + CITME 2020
National Exhibition and Convention Center,
Shanghai, China
Web: http://www.itmaasia.com

14-17
Fundamentals in filtration
EDANA online course
Learn about all aspects of nonwoven filter media from home
Web: https://www.edana.org/trainings/online-nonwoven-training/online-filtration-training-course

July 2021

12-13
WIPES Academy
WIPES training
Atlanta Marriott Marquis
265 Peachtree Center Ave NE, Atlanta, GA 30303, United States
Web: https://www.inda.org/training/WIPES-academy.php

12-15
World of Wipes 2021
International Conference
Atlanta Marriott Marquis
Atlanta, GA
USA
Web: https://www.inda.org/events/calendar.php

19-20
Filtrex Asia
Shanghai, China
Web: https://www.edana.org/events/filtrex/filtrex-asia

22-24
ANEX-SINCE 2021
Shanghai World EXPO Exhibition & Convention Center
China
Web: https://www.asianonwovens.org/news_detail_18.html

August 2021

23-25
Techtextil North America
Raleigh
North Carolina
USA
Web: www.techtextilna.com

September 2021

30
Circular Nonwovens Forum
This new annual forum creates a platform for an in-depth engagement with stakeholders on challenges and opportunities in the pursuit of a circular economy for nonwovens.
Location: TBC
Web: https://www.edana.org/events/circular-nonwovens-forum

October 2021

19-22
INDEX
INDEX is the world's leading nonwovens exhibition, and a global showcase for the nonwovens and related industries.
Geneva
Switzerland
Web: https://www.edana.org/events/index

Although every care is taken over the compilation of this diary to ensure accuracy of the dates, these can sometimes be changed due to local circumstances. It is therefore advisable to check with the appropriate organisers before travel arrangements are made.

NONWOVEN

LET'S KEEP YOUR MACHINES RUNNING

FOR YEARS TO COME

MAXIMIZE YOUR PERFORMANCE

A reliable production is essential for your success. That's why we are close to you. Our highly skilled field and service engineers, worldwide service centers, and a service support line ensure you reliable and fast support, whenever you need it:

- Answers to technical queries
- Troubleshooting and online assistance
- Assistance with installation, operation, maintenance and repairs
- Fast delivery of original spare parts
- Upgrades and modernizations
- Product innovation development

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ENGINEERED SUCCESS

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ANDRITZ