Technical TEXTILES international

Spring 2022 Volume 31, Number 1

Informing the industry worldwide

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INSIDE:

Shape-changing insulation makes an entrance The world's longest flexible fibre battery Treatment enables odour-capturing wound dressings





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In the Editor's opinion

Three decades covering the technical textiles industry

Thirty years ago I was planning and preparing the first issue of Technical Textiles International, at that time the only magazine to focus on high-performance applications for fibre- and fabric-based materials. Begun in an era when desktop computers were a novelty in the workplace, and the concept of the worldwide web was known only to the few physicists and engineers developing it, that May 1992 issue contained news about major chemical companies (such as ICI, Courtaulds and Akzo Nobel) that were selling-off their interests in textiles, a marketplace they saw as moribund.



The other pioneer in this space was *Techtextil*, then a small exhibition having completed only four editions (the first in 1986), each in Frankfurt, Germany.

The growth of *Techtextil* and its global satellites, and the emergence of other publications and exhibitions dedicated to this sector show that our initial judgement about technical textiles being an important growth market was correct. Initially centred around European manufacturers, the technical textiles industry is now truly global and has expanded to include other sectors such as composites and nonwovens. New markets have also evolved; for instance, reports in the first issue concerned fabrics that incorporated wires to form heating elements (the first electronic textiles) and today's sophisticated materials integrating sensors and more advanced devices (so-called "smart textiles") can trace their origins back to them.

Reflecting on these profound changes shows that trying to predict the shape of the industry in 2052 is impossible. However, there are things that have remained constant. Throughout its evolution, the industry has specialised in innovation and it will continue to do so. I am also confident that *Technical Textiles International*



(and, now that the worldwide web is with us, technical-textiles.net) will continue to deliver well-researched and understandable information about the latest innovations shaping the sector, keeping its readers informed and in touch with one another. For while the magazine and its website have recently been acquired by Boughton Technical Media Ltd, the new owner James Bakewell has over ten years of experience of these publications as a reporter, Composites Editor, News Editor and now Editorial Director.

Nick Butler, Consulting Editor



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On the eve of JEC World, Editor James Bakewell looks at some of the latest technologies being developed to make the production of composites more environmentally sustainable (page 19).



Further information at https://www.technical-textiles.net



Sound-absorbing felt from Autoneum conforms to complex geometries



Flexi-Loft is made from a blend of recycled cotton and synthetic fibres, and can be installed in areas of a vehicle's interior with complex geometries—making it a suitable alternative for foam, according to Autoneum.

A lightweight, sound-absorbing felt that can be installed in areas of a vehicle's interior with complex geometries – making it a suitable alternative for foam – has been launched by Autoneum of Winterthur, Switzerland.

The company says that, for the production of insulating components for the interior of a vehicle, standard thermoplastic felts are highly suitable owing to their acoustic absorption, robustness and recyclability. However, since felt-based materials are generally less voluminous and not as mouldable as foam components, more product is required to fill completely areas of varying thickness between the surface of the component and the vehicle's body-inwhite—adding weight. It adds that, by contrast, its Flexi-Loft felt is significantly lighter, more flexible and more adaptable than standard felts. Further, it out-performs current foam products in terms of its environmental impact.

Flexi-Loft is made from a blend of recycled cotton and polyester (PES) fibres, and its shape can be adapted precisely to a wide variety of geometries, making it suitable for use as a decoupling material for interior components with complex shapes, such as inner dashes and automotive carpets. The felt can be recycled and cut-offs generated during the manufacturing process are reclaimed, processed and then re-used in the production of new felt blanks.

Autoneum is already using Flexi-Loft as an insulator for various carpets, inner dashes and other acoustic components based on its Prime-Light technology. Further, it will be used as a decoupler in inner dashes made of its Hybrid-Acoustics in vehicles in Europe in 2023.

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Ahlstrom-Munksjö adds further products to range for electric vehicles

Ahlstrom-Munksjö of Helsinki, Finland, has added products for the filtration of fuel-cell intake-air to its FiltEV range⁽¹⁾ of filtration media for use in electric vehicles (EVs).

Ensuring the purity of the cathode airintake is essential if fuel-cell units are to perform reliably. Ahlstrom-Munksjö's Head of Business Development, Industrial Filtration & New Vehicles, Cedric Vallet, says: "By protecting fuel cells from harmful gases and particulates, we ensure the effective operation of the fuel cell over the entire service lifetime of the vehicle."

The FiltEV Fuel Cell Air Intake carbon media are laminated with a high-particulateefficiency meltblown layer that effectively protects the channels and the proton exchange membranes of fuel-cell units from fouling and degradation. They also protect the catalyst from poisoning by harmful gases. The first product, MA6/700M5 achieves an E10 rating when tested according to European Standard EN 1822⁽²⁾, meaning that it filters 75% of particles of 0.3 µm and larger in size from intake air, and it effectively adsorbs hydrocarbons, such as toluene and n-butane, and acid gases, including sulfur dioxide and nitrogen oxides.

The second product, MA62/700M3, achieves an H13 rating according to EN 1822, meaning that it filters 99.5% of particles of 0.3 µm and larger in size from intake air. It adsorbs hydrocarbons and acid gasses, and is also capable of removing ammonia from intake air. Each of the media can be modified extensively to meet the individual needs of a given application.

The addition of these products represents the second update Ahlstrom-Munksjö has made to the FiltEV range in recent months; it added products for the filtration of cabin air and for filtering particles from transmission fluids in October 2021⁽³⁾.

See also: ⁽¹⁾Ahlstrom-Munksjö launches filtration media for electric vehicles, https://www.technical-textiles.net/node/76256

⁽²⁾EN 1822, *High efficiency air filters (EPA, HEPA and ULPA) - Part 1: Classification, performance testing, marking,* https://www.en-standard.eu/set-en-1822-and-en-iso-29463-standards-for-heigh-efficiency-air-filters-epa-hepa-and-ulpa

⁽³⁾Ahlstrom-Munksjö adds to FiltEV range, https://www.technical-textiles.net/node/76439

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Bast Fibre Technologies to buy North American processor of natural fibres



Lumberton Cellulose's facilities in Lumberton, North Carolina, USA.

Manufacturer of natural fibres for the global nonwovens industry, Bast Fibre Technologies (BFT), has entered into a definitive agreement to acquire a facility for processing natural fibres, Lumberton Cellulose LLC (LC), from Georgia-Pacific Cellulose LLC.

Based in Lumberton, North Carolina, USA, LC will be the second company bought by BFT, of Victoria, British Columbia, Canada, in recent months. In October 2021, it acquired dyer, finisher and blender of fibres, Faser Veredlung Tönisvorst (FVT) of Tönisvorst, Germany⁽¹⁾.

BFT's Chief Executive Officer (CEO) and Chairman, Noel Hall, says that the deal to buy LC will enable his company to establish immediately manufacturing operations in North America to meet the rapidly growing demand for its natural fibres from the continent. He continues: "Following our recent acquisition of FVT, this is another key step in our long-term strategy of building significant highquality manufacturing capacity for our global customers."

The purchase of LC also builds on BFT's existing relationship with Georgia-Pacific, of Atlanta, Georgia, USA. In February of 2020, BFT licensed a suite of patents relating to the use of bast fibres in a variety of nonwoven products and processes from Georgia-Pacific Consumer Products on a global, exclusive basis.

LC is a highly automated producer of natural fibres for the personal care and hygiene markets. BFT plans to grow and invest in the operation; LC will be its flagship US manufacturing site and the company says that it will create opportunities and markets for North American hemp and flax growers. BFT's President, Jim Posa, adds: "This acquisition will play an integral role in supporting North America's transition away from plastic and manufactured cellulosic fibres and toward a more sustainable future."

Following the closing of the purchase, which BFT expects to happen in its first fiscal quarter, LC will continue to supply its existing customers, including Georgia-Pacific Consumer Products.

See also: ⁽¹⁾Bast Fibre Technologies acquires German textileprocessing facility, https://www.technical-textiles.net/node/76473

Larisa Harrison, Corporate Administration and Sustainability Manager, Bast Fibre Technologies. Tel: +1 (778) 600-1501. Email: larisa.harrison@bastfibretech.com; https://bastfibretech.com INNOVATION: It's in Our dna

Geneva, Switzerland, 1956: Philippe Guy Woog develops the electric toothbrush. Using a machine in the mouth didn't appeal to everyone at first! But today many millions rely on automatic high-speed brushing to maintain healthy teeth and gums.

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Global market for nonwovens to be worth US\$77.84 billion by 2027

The size of the global market for nonwovens will increase at a compound annual growth rate (CAGR) 6.7%, by value, to be worth US\$77.84 billion in 2027, with 18.65 Mt of nonwovens consumed annually.

These are the key findings of the latest report from Smithers of Leatherhead, UK, and Akron, Ohio, USA. In *The Future of Global Nonwovens to 2027*^{(1),} the company says that, over the forecast period (2022– 2027), the total surface area of nonwovens produced will increase from 375.3 billion m2 to 544.1 billion m2, a faster CAGR than for overall tonnage, as new lower baseweight substrates are introduced.

The global consumption of nonwovens in 2021 will reach 12.30 Mt to be worth US\$51.86 billion. Smithers adds that, over the last two years, surges in demand for wipes, medical nonwovens and meltblown substrates for face masks have offset slackening demand for nonwovens from many industrial segments caused by manufacturing shutdowns during the peak of the human coronavirus (covid-19) pandemic in 2020.

Global consumption of nonwovens will increase to 13.40 Mt, worth US\$56.39 billion, at constant prices, in 2022. The experience of the covid-19 pandemic will underpin future growth—there will be increased demand for medical and high-grade nonwovens for personal protective equipment (PPE), as manufacturing capacity is reassigned as a strategic necessity in protecting against repeat outbreaks.

Smithers says that the commercial landscape for nonwovens has been reshaped by the experience of covid-19. Increases in prices for raw materials and shipping will continue to be felt and, in the medium term, there will be an oversupply of meltblown nonwovens as the immediate need to make protective face masks recedes.

The search for more sustainable and compostable nonwovens will see increased demand for lyocell, rayon and other nonpolymer fibres. This aligns with the priorities of suppliers of goods based on nonwovens in many consumer segments, as well as responses to legislation, including the implementation of the *Single-use Plastics Directive* in the European Union (EU) and new measures regarding the flushability of wipes (see also, page 11).

Smithers' research tracks the market outlook for four major nonwovens processes (airlaid, drylaid, spunlaid and wetlaid) across 19 durable and disposable end-use applications. It shows that spunlaid remains the most widely used web-forming process accounting for a projected 49.6% of all nonwovens consumed in 2022. Despite being highly dependent on polymer materials – and hence under pressure from a sustainability perspective – spunlaid will continue to grow its market share. It will increase to a 55.2% market share (by volume) in 2027, driven by new demand for hygiene products in developing markets, primarily in Asia.

There will be solid demand for both wetlaid and airlaid nonwoven substrates over this period, though there is a possibility of a capacity shortfall before 2025, unless new airlaid lines are built. Growth in demand for drylaid nonwovens, while still healthy, will fall behind the market mean. In wetlaid there will be some specific market opportunities across 2022–2027, including greater demand for double re-crepe (DRC) in wipes, and speciality wetlaids as battery separators for the booming electric-vehicle segment.

As nonwoven markets continue to evolve, a greater emphasis will be placed on smarter supply chains, with improved visibility, communication and inventory management all contributing to increased efficiency.

See also: ⁽¹⁾The Future of Global Nonwovens to 2027, https://www.smithers.com/services/ market-reports/nonwovens/the-future-ofglobal-nonwovens-to-2027

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INDA positions itself to support the nonwovens industry following the pandemic

Following an extensive strategic review, the Association of the Nonwoven Fabrics Industry (INDA) of Cary, North Carolina, USA, has laid-out a plan to tackle the business challenges created by the human coronavirus (covid-19) pandemic.

The industry association says that its activities will now be guided by five key objectives, which are to:

- convene and connect the nonwovens industry through trade shows and conferences;
- "achieve industry relevance" among policy-makers, end-users and other key stakeholders;
- advocate for the nonwovens industry in public policy forums;

- deliver market insights for better decision making;
- provide training programmes in order to drive innovation.

INDA Board Chair, and the Chief Commercial Officer (CCO) of Glatfelter (which is based in Charlotte, North Carolina, USA), Chris Astley, says: "This new plan reflects our intimate knowledge of the new industry expectations, and positions INDA to support our members as they continue to overcome disruptions caused by the pandemic and position themselves to thrive in the new and evolving landscape."

INDA has commissioned independent advisors to help to survey its members

and develop this plan, and to recruit the support needed to execute the plan over the next several years.

In November 2021, it also announced the appointment of Tony Fragnito as its Chief Operating Officer (COO). Previously, Fragnito was the Chief Financial Officer (CFO) of the International Society of Automation (ISA) in Research Triangle Park, North Carolina. Before that, he was Chief Executive Officer (CEO) of XBRL International Inc.

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Vegeto launches thermally insulating milkweed-fibre nonwoven

A thermally insulating nonwoven based on fibres extracted from milkweed (*Asclepias syriaca*), a plant native to North America, has been launched for use in outdoor clothing and equipment by Vegeto.

The company, of Cowansville, Quebec, Canada, says that the insulation is particularly suitable for use in such as jackets and sleeping bags. Its General Manager, Ghyslain Bouchard, adds: "This new insulation material fills a gap in the textile industry—a plant-based, ecofriendly insulation textile that makes no compromise on performance."

The laminated nonwoven comprises a mixture of milkweed and kapok fibres, and a biopolymer made from corn starch. Testing conducted at an independent laboratory (CTT Group, of Saint-Hyacinthe, Quebec) has shown that the product demonstrates a CLO value⁽¹⁾ of 2.5–4.5, depending on its basis weight. The nonwoven is available in basis weights of 100–250 g.m⁻², a range that encompasses

insulation for use in mild spring weather and in colder winter temperatures.

Bouchard says: "A study of the milkweed fibre's properties revealed that its tubular form makes it an excellent thermal insulation material. The hollow part of the fibre stores air and maintains temperature. It is this natural characteristic, which synthetic materials try to reproduce, that inspired us to create our milkweed insulation textile."

Vegeto recently demonstrated that nonwovens made from milkweed fibres maintain their insulating properties even when under compression⁽²⁾.

Vegeto is working with Canadian farmers to harvest a stable crop of milkweed suitable for the production of fabrics.

See also: ⁽¹⁾A CLO value describes the degree of insulation provided by an article of clothing; the higher an item's CLO value, the warmer it keeps its wearer.



The seed pod of the milweed plant.

⁽²⁾*Milkweed nonwovens retain heat better than polyester alternatives,* https://www.technical-textiles.net/node/76248

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Oerlikon Nonwovens to show entire product range in Miami Beach

An innovative technology for the production of wipes (Phantom), airlaid technology, meltblown systems and technologies for the production of industrial nonwovens are to be shown by Oerlikon Nonwoven at *IDEA 2022*.

Through Phantom, spunmelt and airlaid processes are merged into one step so that cellulose fibres, long fibres such as cotton, and even powders, can be combined with polymer fibres in new ways.

Oerlikon Nonwoven of Neumünster, Germany, says that the technology eliminates the need for a hydroentanglement step to bond the webs, so it is no longer necessary to dry the material saving time and money compared with traditional production processes.

The parameters of the Phantom process can be adjusted to change the softness, strength, and dirt-absorption and liquidabsorption of the end-product.

Further, the freedom the technology provides for the formulation of continuous and discrete fibres allows for the manufacture of flexible and absorbent structures, and highly textured materials.

The technology can be used to produce wipes and absorbent cores for such as diapers and feminine hygiene products.

Phantom was developed by Procter & Gamble (P&G), of Cincinnati, Ohio, USA, and is distributed and sold by Oerlikon subsidiary Teknoweb Materials, of Palazzo Pignano, Italy, following the signing of an exclusive global licence agreement by the two companies⁽¹⁾.

Oerlikon Nonwoven says that its airlaid process, meanwhile, is highly suitable for converting cellulose fibres into homogeneous, high-end products. The



Oerlikon says that, through Phantom, spunmelt and airlaid processes are merged into one step so that cellulose fibres, long fibres such as cotton, and even powders, can be combined with polymer fibres in new ways.

process allows for the mixing of a diverse range of raw materials, including pulp, short- and long-staple natural and manmade fibres (of up to 20 mm in length) and powders, and can carry-out numerous mechanical, thermal and chemical tangling methods to yield products with the requisite properties. It can also be used in combination with hydroentanglement systems to add layers of cellulose to products to, for example, improve their water-absorbency.

Oerlikon Nonwoven adds that its meltblown technology is suitable for the efficient production of nonwoven media for filtration, insulation and sorption applications from conventional polyolefins and speciality plastics, such as polyphenylene sulfide (PPS) thermoplastic polyurethane (TPU). The media can be electrostatically charged with its ecuTEC+ electro-charging unit.

Finally, the company will show spunbond systems for the efficient production of industrial nonwovens. They can be used, for instance, to make geotextiles from



Oerlikon Nonwoven's double-beam meltblown system with an integrated ecuTEC+ unit for electrostatically charging filter media.

polypropylene (PP) or polyester (PES) with basis weights of up to 400 g.m⁻² and filament titers of up to 9 dtex. The company also sells spunbond systems for the manufacture of substrates for roofing underlays (PP or polyethylene terephthalate (PET) spunbonds) and socalled bitumen roofing substrates (needled PET spunbonds) for bitumen roofing membranes.

Further, spunbond products are increasingly being used in filtration applications as backing materials for filter media and as the filter media themselves. Oerlikon Nonwoven says that its systems for the production of core-sheath, bicomponent fibres enables the manufacture of such nonwovens, enabling multiple functions to be combined in a single material.

Oerlikon Nonwoven can be found in Hall B, Stand 4111 at *IDEA 2022*, which takes place on 28–31 March in Miami, Florida, USA.

See also: ⁽¹⁾Oerlikon acquires licence to sell Procter & Gamble production technology, https://www.technical-textiles.net/node/75904

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Brückner to showcase systems for the bonding of nonwovens at IDEA

Systems for the bonding of high-loft nonwovens and geotextiles are to be highlighted by Brückner Textile Technologies of Leonberg, Germany (see also, page 11), on its stand at *IDEA 2022*.

For the bonding of high-loft nonwovens, the company will showcase its double-belt thermofusion oven (Supra-Flow BX), which was introduced in 2018, and has fewer components and circulates hot air more efficiently than its predecessor. It can be used for the production of nonwovens with thicknesses of up to 280 mm and basis weights of up to 8000 g.m⁻² for mattresses, bedspreads, upholstery, wiping cloths, automotive components and thermal insulation. Working widths vary between 2400 and 5200 mm at production speeds of up to 100 m.min⁻¹.

For the production of geotextiles, the company will discuss its Power-Frame stenter. The stenter is designed to ensure the homogeneous admittance of heated air to the fabric across the whole length and



Brückner Textile Technologies' Supra-Flow BX double-belt thermofusion oven.

width of the machine. Further, the fabric can be stretched in a targeted manner by transporting it in the stenter chain, which can influence the width of the fabric, the orientation of its fibres and its shrinkage.

Brückner Textile Technologies can be found at Stand 4101 at *IDEA 2022*, which

takes place on 28–31 March in Miami, Florida, USA.

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Sandler to unveil products for hygiene, wipes and the automotive industry

An innovative acquisition distribution layer (ADL), sustainable substrates for wipes and a polyester (PES) nonwoven for the manufacture of moulded exterior parts for cars will be shown at *IDEA 2022* by Sandler.

The company, of Schwarzenbach/Saale, Germany, says that in conventional diapers, the ADL and core cover are not connected completely with the core material—which can cause leakages and reduces the amount of fluid the diaper can absorb. Sandler's ADL, by contrast, features an integrated core cover—eliminating any gaps between these functional layers and the absorbent core and preventing leakage. Further, the ADL can be manufactured in an entirely mechanical production process without the use of thermoplastics.

Sandler will also show substrates made from natural and/or renewable

fibres for the production of wipes. The company claims that the nonwovens demonstrate similar or even better softness than conventional alternatives, as well as higher thickness at similar basis weights.

Finally, the company will show polyethylene terephthalate (PET) nonwovens for the manufacture of moulded exterior parts – such as underside panels, enginecompartment shields and damping trays – for the automotive industry.

No binders are used in the production of the nonwovens, nor are they reinforced with additional fibres, and Sandler says that the porous structure of the fabrics makes them excellent sound-absorbers.

By customising the fibre structure of the nonwovens and the three-dimensional (3D) shapes of the components made from them, their mechanical, acoustic and thermal performance can be optimised for the needs of specific applications.

Further, the nonwovens are not susceptible to mould and fungi, and are extremely resistant to the fluids commonly found in engine compartments. They are made from up to 80%-by-weight postconsumer recycled (PCR) fibres and can, in turn, be recycled at the end of their lives.

Sandler can be found at booth 1401 at *IDEA 2022*, which takes place on 28–31 March in Miami, Florida, USA.

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Andritz to present a wide range of technologies at IDEA 2022



Andritz operates an airlay pilot line at Andritz Laroche in Cours, France.

Technologies for the production of wipes, incontinence products and automotive nonwovens will be among the highlights on Andritz Group's stand at *IDEA 2022*.

For the production of such as biodegradable and flushable wipes, Andritz – of Graz, Austria – will show a range of technologies, including hydroentanglement and wetlace. Hydroentanglement can bond any kind of fibres – including pulp, cotton, hemp, linen, flax and bamboo – without the use of chemical binders or thermal fusion. Andritz says that its wetlace card-pulp (CP) process, meanwhile, combines the benefits of two web-forming technologies (drylaid and wetlaid), with bonding by hydroentanglement. Using it, natural fibres can be processed to generate a high-performance and cost-effective wipe (see also, page 14).

The company will discuss its joining of the Board of the Responsible Flushing Alliance (RFA) in the USA. The RFA is an independent, non-profit trade association committed to educating consumers about responsible and smart flushing habits to help reduce damage to the nation's sewage systems caused by the improper disposal of wipes. It will also talk about its technical centre for hydroentanglement at Andritz Perfojet in Montbonnot, France.

For hygiene applications, Andritz will highlight a process for producing spunlaid nonwovens called Spunjet Soft. The process involves the in-line hydroentanglement of continuous filaments to create premium spunlaid nonwovens with improved bulkiness and softness compared with standard spunbond fabrics. Further, the company will introduce a line for the production of adult incontinence products.

For the automotive industry, Andritz will discuss its airlay and needlepunch processes; the company has a technical centre for needlepunch processes at Andritz Asselin-Thibeau, in Elbeuf, France, and an airlay pilot line at Andritz Laroche, of Cours, France. It will also talk about its ProWin system, which enables the production of homogeneous webs and can reduce the input of raw materials required. ProWin enables a machine to run faster while generating less mechanical stress, and can be retrofitted to recent ProDyn installations Andritz can be found at Hall B, Stand 4104 at IDEA 2022, which takes place on 28-31 March in Miami, Florida, USA.

Petra Wolf, Assistant, Group Finance, Corporate Communications & Investor Relations, Andritz AG. Tel: +43 (316) 6902-2722. Email: petra.wolf@andritz.com

Michael Buchbauer, Head of Corporate Communications, Andritz AG. Email: michael.buchbauer@andritz.com; https://www.andritz.com

Read the latest updates on *IDEA 2022* at https://www.technical-textiles.net



The challenge of going plastic-free in the midst of a pandemic

The combination of the human coronavirus (covid-19) pandemic and the introduction of the *Single-Use Plastics Directive (SUPD)* in Europe created unprecedented challenges for manufacturers of nonwoven wipes in 2021. Nonwovens Editor, Adrian Wilson, reports on the development of some potential solutions to these problems.

The Association of the Nonwoven Fabrics Industry (INDA), of Cary, North Carolina, USA, is gearing-up for *IDEA 2022*, which will be held in Miami, Florida, USA, on 28–31 March (see also, pages 8–10). The event is being held at a perfect time, as the nonwoven industry can come together once again to solve several key problems highlighted, and even exacerbated by, the human coronavirus (covid-19) pandemic⁽¹⁾. Key among these is the need to make the production of nonwovens, and disposable nonwoven wipes in particular, more environmentally sustainable.

This challenge was discussed in detail at the *Go Wipes* 2021 conference, which was organised by Leatherhead,



Through Lenzing Web technology, dope cellulose is dissolved in *n*-methylmorpholine-*n*-oxide (MMO) and then extruded. The MMO is then washed-out and recycled, and the resulting web can be hydroentangled (see also, page 17).



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In depth: Sustainable nonwovens



using cellulosic fibres. Henderson continued: "It is widely known in the industry that 100% cellulosic products cause challenges throughout the supply chain and when consumer portfolios changed in a matter of months, the impacts were felt by both roll-goods manufacturers and converters. Reduced efficiencies and increasing materials costs have been unavoidable".

Henderson added that the demand for viscose and other cellulose-based fibres began to increase drastically at just the wrong time, in the middle of the pandemic and the supply-chain difficulties that it caused, "leaving

Hydroentanglement is the fastest-growing route for the production of substrates for wipes in this market and wood pulp the fastest-growing material, in terms of demand.

Capacity for the production of flushable wipes, or, as certain sectors of the industry prefer to call them, moist toilet tissue (MTT), exceeds demand, but the gap is starting to close.

Examining the various routes for the production of plastic-free wipes, Mango said there were five principal approaches:

manufacturers and brand owners wondering whether they were even doing the right thing."

European moves

Smithers consultant Phil Mango told the conference that, in Europe in 2021, 518 kt of nonwovens, with a market value of US\$6.7 billion, were used for the production of wipes. He forecast that in five years' time (2026), this figure will have risen to 700 kt of product, with a value of approximately US\$9 billion.

He added that the SUPD is driving the development of materials, the strategic stockpiling of materials, and regional biases in the production and converting of certain wipes. There is, for example, limited means for the production of viscose fibres in the USA, and European producers might be tempted to give preferential treatment to their local customers so that they can meet the new demands laid-out in the SUPD.



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In depth: Sustainable nonwovens

Turkey, and Albaad in Dimona, Israel⁽³⁾ – the latter a hybrid line with "inclined wire" technology for the additional production of MTT – as well as further lines for customers in China and other Asian countries.

Wetlaying pulp

Director of Technology for Trützschler Nonwovens (of Egelsbach, Germany), Bodo Heetderks, introduced the similar Voith/Trützschler CP system, which starts with a wetlaying process, rather than carding. Using the technology, a cost-effective, wetlaid pulp layer can be combined with a carded web made from cellulosic fibres. Such lines have been operational since the beginning of 2020, with products accepted on the market.

"Pulp is a promising material, being absorbent, abundant, biodegradable, easy to work with and inexpensive compared to viscose and polyethylene terephthalate [PET]," Heetderks said. "It is, however, soft, and only fit for hydroentanglement in combination with longer fibres such as viscose, lyocell or PET."



Sales Manager at Andritz, Ioannis Lappas, introducing the latest Andritz Nonwovens carded pulp technology at Go Wipes 2021.

In the first production step, web formation, a suspension of pulp highly diluted in water is produced and fed into a HydroFormer from Voith of Heidenheim an der Brenz, Germany. A homogeneous fibre mat forms on the inclined wire of the machine in a process similar to that employed for the manufacture of paper. A high-speed card from Trützschler is used to create a web from cellulosic fibres.

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Filter Media

28–29 March 2022 Miami Beach, Florida, USA Tracie Leatham, INDA (Association of the Nonwoven Fabrics Industry); Tel: +1 (919) 459-3726 tleatham@inda.org; https://www.inda.org/education/ filter-media-training.php

Smart Fabrics Summit

28–29 March 2022 Raleigh, North Carolina, USA Jennifer Fisher, Registration, Industrial Fabrics Association International (IFAI); Tel: +1 (651) 222-2508; Fax: +1 (651) 631-9334; jarfisher@ifai.com; http://ifaiexpo.com

IDEA 2022

28–31 March 2022 Miami Beach, Florida, USA Misty Ayers, INDA (Association of the Nonwoven Fabrics Industry); Tel: +1 (919) 459-3712; Fax: +1 (919) 459-3701; mayers@inda.org; https://www.ideashow.org

Cleaning Products Europe

29–30 March 2022 Prague, Czech Republic Smithers; Tel: +44 (1372) 802000 cpeu@conference.smithers-email.com; https://cleaningproductsconference.stg. smithers.com/cleaning-products-europe

FiltXPO

29–31 March 2022 Miami Beach, Florida, USA Lori Reynolds, Director of Events, INDA (Association of the Nonwoven Fabrics Industry); Tel: +1 (919) 459-3716; lori@filtxpo.com; https://www.filtxpo.com

April 2022

Geo-U

5–8 April 2022 Austin, Texas, USA Sam Allen, Conference Chair, Geo-U; Tel: +1 (512) 263-2101, x 138 sallen@tri-env.com; https://events.geo-u.com

Absorbent Hygiene Products

20–21 April 2022 Brussels, Belgium Anaëlle Schütz, EDANA; Tel: +32 (2) 740-1811 anaelle.schutz@edana.org; https://www.edana.org/trainings/absorbent -hygiene-products-training/absorbenthygiene-products

Performance Days

27–28 April 2022

Munich, Germany Stefanie Sacherow, Design & Development GmbH; Tel: +49 (89) 9394-6012; Fax: +49 (89) 931134; s.sacherow@performancedays.com; http://www.performancedays.com

SmartX

27–28 April 2022 Brussels, Belgium Judith Bosch, Project Manager, European Technology Platform for the Future of Textiles and Clothing (Textile ETP); Tel: +32 (2) 285-4883 judith.bosch@textile-platform.eu; https://www.smartx-europe.eu/ eventbrite-event/the-final-smartx-conference

Textile ETP Annual Conference

27–28 April 2022 Brussels, Belgium European Technology Platform for the Future of Textiles and Clothing (Textile ETP); Tel: +32 (2) 285-4883 info@textile-platform.eu; https://textile-platform.eu/news/save-thedate-16th-textile-etp-annual-conference-2022

May 2022

JEC World

3–5 May 2022 Paris, France and online Farah Boudjemia, JEC Composites; Tel: +33 (1) 5836-4399; Fax: +33 (1) 5836-1513; boudjemia@jeccomposites.com; http://www.jeccomposites.com

Inkjet Conference 2022

4–5 May 2022 Orlando, Florida, USA Alvin G. Keene, President, IMI; Tel: +1 (207) 607-8002; Fax: +1 (207) 560-9119; al@imiconf.com; https://www.imiconf.com/ijc-feb2022

Textile Roofs

9–11 May 2022 Berlin, Germany Juliana Obynochnaya, Coordinator, academus GmbH; Tel: +49 (30) 2607-7251; Fax: +49 (30) 2630-2515; juliana.obynochnaya@academus.berlin; https://www.textile-roofs.com

Digital Print Europe

9–12 May 2022 Barcelona, Spain Tim Phillips, Managing Director, IMI Europe Ltd; Tel: +44 (1223) 236920 tim@imieurope.com; https://imieurope.com/digitalprinteurope2022 -introduction

Techtextil North America

17–19 May 2022 Atlanta, Georgia, USA Ali Rosenberger, Messe Frankfurt North America; Tel: +1 (678) 732-2428 ali.rosenberger@usa.messefrankfurt.com; https://www.techtextilNA.com

Texprocess Americas

17–19 May 2022 Atlanta, Georgia, USA Ali Rosenberger, Messe Frankfurt North America; Tel: +1 (678) 732-2428 ali.rosenberger@usa.messefrankfurt.com; https://www.TexprocessAmericas.com

Milipol Asia-Pacific

18–20 May 2022 Singapore Vanessa Galvez, Comexposium; Tel: +33 (1) 7677-1329 Vanessa.galvez@comexposium.com; https://www.milipolasiapacific.com

FESPA Global Print Expo 2022 and European Sign Expo 2022

31 May–3 June 2022 Berlin, Germany Leighona Aris, FESPA; Tel: +44 (1737) 228160 Leighona.Aris@Fespa.com; http://www.fespa.com See also, page 7

June 2022

International Nonwovens

Symposium 8–9 June 2022 Lyon, France Delphine Rens, EDANA; Tel: +32 (2) 740-1822 delphine.rens@edana.org; https://www.edana.org/events/ nonwovens-symposium/internationalnonwovens-symposium



The Global Digital Textile Conference

8–9 June 2022 Como, Italy and online World Textile Information Network; Tel: +44 (113) 819-8155 info@wtin.com; https://gdtc.wtin.com

Outdoor by ISPO

12–14 June 2022 Sabine Wagner, ISPO; Tel: +49 (89) 949-20802 sabine.wagner@messe-muenchen.de; https://www.ispo.com/en/outdoor

Hightex

14–18 June 2022 Istanbul, Turkey Teknik Fairs Ltd Co; Tel: +90 (212) 876-7506; Fax: +90 (212) 876-0681; info@teknikfuarcilik.com; https://www.hightexfairs.com

International Textile Machinery Exhibition (ITM)

14–18 June 2022 Istanbul, Turkey Teknik Fairs Ltd Co; Tel: +90 (212) 876-7506; Fax: +90 (212) 876-0681; info@teknikfuarcilik.com; https://www.itmexhibition.com/itm2022

Heimtextil

21–24 June 2022 Frankfurt, Germany Anil Öt, Messe Frankfurt Exhibition GmbH; Tel: +49 (69) 7575-6643 anil.oet@messefrankfurt.com; https://www.heimtextil.messefrankfurt.com

Techtextil

21–24 June 2022 Frankfurt, Germany Ivonne Seifert, Director Marketing Communications, Messe Frankfurt Exhibition GmbH; Tel: +49 (69) 7575-6157; Fax: +49 (69) 7575-6781; ivonne.seifert@messefrankfurt.com; https://techtextil.messefrankfurt.com

Texprocess

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Future Fabrics Expo

28–29 June 2022 London, UK The Sustainable Angle info@thesustainableangle.org; http://www.thesustainableangle.org

July 2022

Nanotexnology

2–9 July 2022 Thessaloniki, Greece Stergios Logothetidis, Chair, Nanotexnology; Tel: +30 (231) 099-8174 info@nanotexnology.com; https://www.nanotexnology.com

August 2022

Intertextile Shanghai Home Textiles

15–17 August 2022 Shanghai, China Rita Li, Messe Frankfurt (HK) Ltd; Tel: +852 223-9966; rita.li@hongkong.messefrankfurt.com; https://intertextilehome.hk.messefrankfurt. com/china/en.html

September 2022

European Geosynthetics

4–7 September 2022 Warsaw, Poland Mazurkas Congress & Conference Management; Tel: + 48 (22) 536-4600; info@eurogeo7.org; https://eurogeo7.org

CINTE Techtextil China

6–8 September 2022 Shanghai, China Liam Rodden, Messe Frankfurt (HK) Ltd; Tel: +852 2230-9217; liam.rodden@hongkong.messefrankfurt.com; https://cinte-techtextilchina.hk.messefrankfurt.com/ shanghai/en.html

Nonwovens Introduction

13 September 2022 Online Anaëlle Schütz, EDANA; Tel: +32 (2) 740-1811 anaelle.schutz@edana.org; https://www.edana.org/trainings/nonwovenslearning-cycle/nonwovens-introduction

Dornbirn Global Fiber Congress

14–16 September 2022 Dornbirn, Austria Dornbirn Global Fiber Congress Office; Tel: +43 (1) 319-2909-41; Fax: +43 (1) 319-2909-31; office@dornbirn-gfc.com; http://www.dornbirn-gfc.com

International Textile Manufacturers Federation (ITMF) Annual Conference

Tederation (TMP) Annual Conference 18–20 September 2022 Davos, Switzerland Secretariat, International Textile Manufacturers Federation (ITMF); Tel: +41 (44) 283-6380; Secretariat@itmf.org; https://www.itmf.org/conferences/ annual-conference-2021

InnoTrans

20–23 September 2022 Berlin, Germany Messe Berlin; Tel: +49 (30) 3038-2376; Fax: +49 (30) 3038-2190; innotrans@messe-berlin.de; https://www.innotrans.de

International Composites Summit

21–22 September 2022 London, UK Composites UK; Tel: +44 (1442) 817502 info@fpcc-conference.com; https://compositesuk.co.uk/events/ international-composites-summit

Circular Nonwovens Forum

22 September 2022 Brussels, Belgium and online Delphine Rens, Marketing and Communications Coordinator, EDANA; Tel: +32 (2) 740-1822; Fax: +32 (2) 733-3518; delphine.rens@edana.org; https://www.edana.org/events/circularnonwovens-forum

11th International Textile

Coating & Laminating Congress 22–23 September 2022 Ghent, Belgium Unitex; Tel: +32 (9) 355-2388 secretariat@unitex.be; https://www.unitex.be

FESPA Mexico

22–24 September 2022 Mexico City, Mexico Leighona Aris, FESPA; Tel: +44 (1737) 228160 Leighona.Aris@Fespa.com; https://www.fespa.com

Innovate: Textile Innovation

28–29 September 2022 Amsterdam, The Netherlands and online World Textile Information Network; Tel: +44 (113) 819-8155 info@wtin.com; https://innovate.wtin.com

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