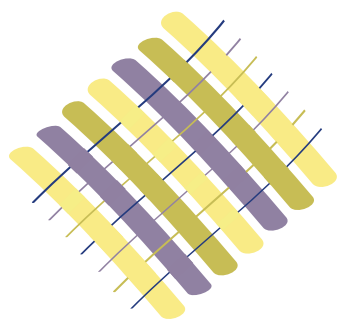
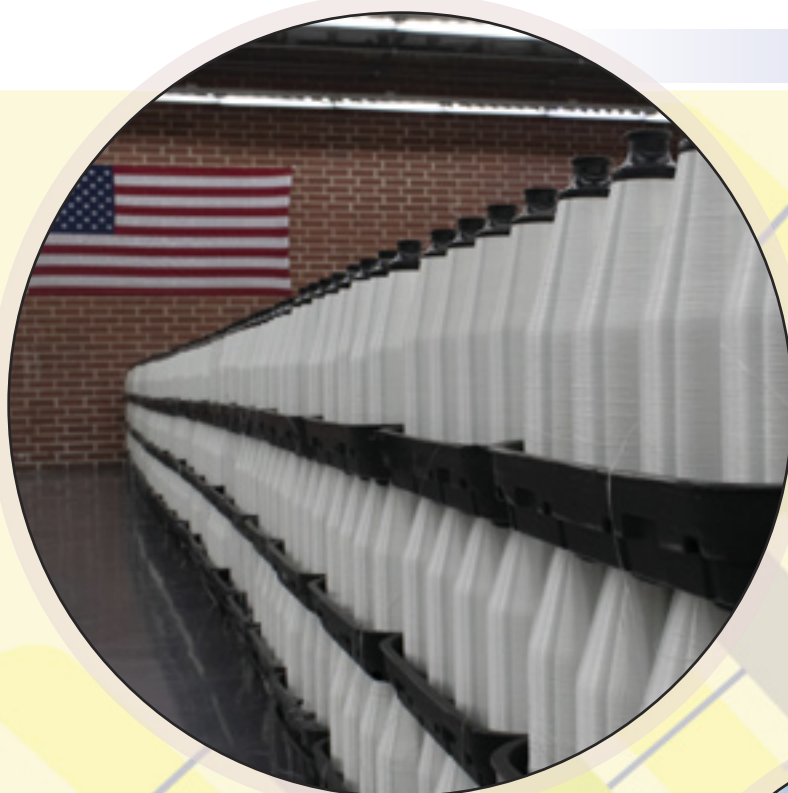




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Spring 2026
Volume 35, Number 1

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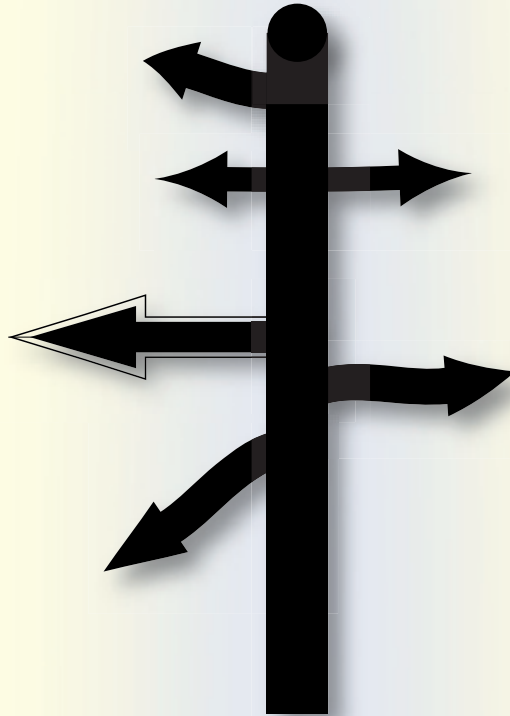
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In the Editor's opinion

In the last issue of *Technical Textiles International*, I wrote about some of the challenges facing the European technical textiles industry as we entered 2026. In this issue, starting on page 15, I outline some of the issues facing the composites industry on the continent, and many of them will be familiar.

Europe's share of global composites production slipped to roughly 18% in 2024, down from about 20% the year before, according to a report by the German Federation of Reinforced Plastics (AVK) released in March 2025. Asia and the Americas gained ground, driven by stronger economic growth, lower energy costs and aggressive industrial policies. "While the global composites market is growing, Europe is falling further behind," the authors of the AVK report write. "The gap between the European and global composites industry is widening."

The downturn means that European production volumes have reverted to levels last seen more than a decade ago. After a steep 9% decline in 2022 and an additional 8% drop in 2023, the contraction in 2024 indicates strongly that the slump is not a temporary correction, but part of a longer-term structural shift.

How the European technical textiles industry bears up in the face of such economic and geopolitical headwinds remains to be seen, but there have been calls for the European Union (EU) to take more of a protectionist stance regarding the sector. Essential for the defence, medical, energy, transport and personal protection industries, technical textiles are vital—not commodities. Should the EU consider, then, a sourcing framework comparable to the US Berry Amendment, which mandates domestic sourcing of certain textile and apparel products for defence procurement?

The objective of the Berry Amendment is supply security rather than market insulation. In contrast, the EU relies largely on open procurement principles, even for applications deemed critical. While this approach supports competition, it has also exposed European producers to sustained pressure from imports that are not subject to the same regulatory, environmental and labour standards.

A European equivalent would need to be carefully calibrated. Any such mechanism should be narrowly scoped, legally robust and aligned with EU trade obligations. Targeted origin requirements for defence, emergency services and critical infrastructure could provide demand certainty, support capital investment and strengthen innovation ecosystems without distorting the wider market.

Cost concerns are inevitable. Yet recent disruptions, from pandemics to geopolitical shocks, have demonstrated that dependence carries its own price. For technical textiles, resilience is an operational necessity.

The issue, then, is not whether Europe should copy the US model, but whether it can design a framework that reflects European values while safeguarding strategic industrial capabilities. For the technical textiles sector, this discussion is likely not theoretical—it could be commercial and immediate.

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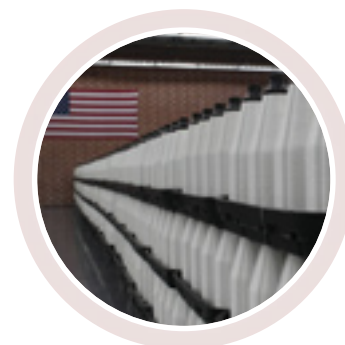
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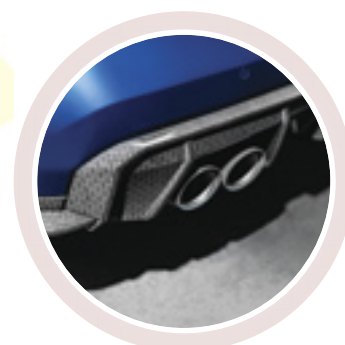
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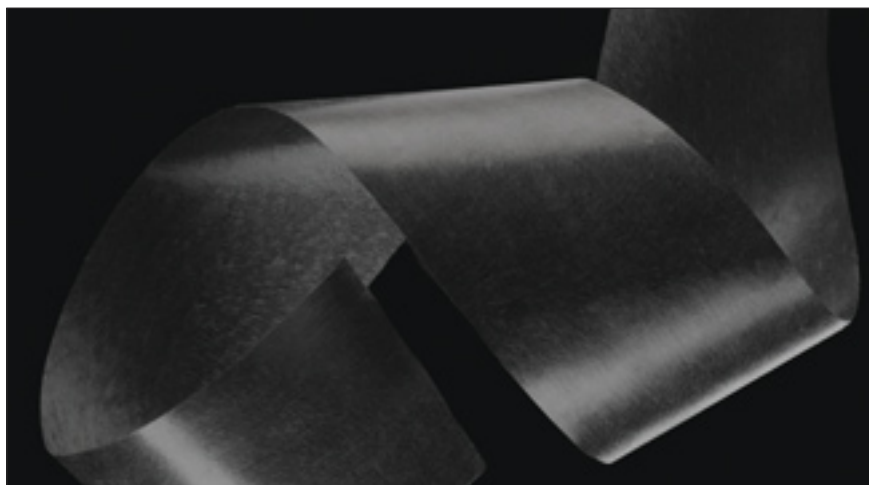
AGY is investing heavily to meet demand for its glass fibres from US producers of chips for artificial-intelligence applications. Starting on page 9, John McCurry reports



The European composites industry is a hotbed of innovation (this flax fibre-reinforced part, for instance, has been developed by BMW and Bcomp, see page 21), but it is currently facing significant challenges. Starting on page 15, James Bakewell reports



Aligned-fibre nonwovens for the production of composites



James Cropper has manufactured an aligned nonwoven fibre mat (Unimat) designed to be impregnated or combined with resins in composite-manufacturing processes.

A method that enables the mass-production of nonwovens with highly aligned discontinuous fibre structures for use in the manufacture of composites in place of unidirectional (UD) tapes has been developed by James Cropper Advanced Materials, of Kendal, UK.

The company says that, while techniques that allow short or recycled fibres to be aligned in nonwovens have been demonstrated at laboratory- and pilot-scale, producing such fabrics in commercially viable production widths, areal densities and volumes has proven difficult.

Using its method, called Vectis, James Cropper has manufactured an aligned nonwoven fibre mat (Unimat) designed to be impregnated or combined with resins in composite-manufacturing processes.

The company says that Unimat delivers directional mechanical performance, while retaining the formability required for the manufacture of composite parts with complicated geometries. It is supplied as a non-impregnated material and can be processed using existing processes, including prepreg lay-up, compression moulding, stamping, resin-transfer moulding (RTM) and autoclave processing.

The Vectis method can be carried-out on James Cropper's existing industrial machinery for the production of nonwovens, enabling the high-volume

production of fabrics of widths of up to 1200 mm and areal densities of 20–200 g.m⁻².

Almost 95% of the fibres in Unimat are aligned in the same direction and it can be manufactured from recycled carbon fibre, industrial waste, virgin carbon fibre, glass fibre and hybrid blends. It is suitable for use by manufacturers serving the aerospace, automotive and sporting goods industries looking to balance

mechanical performance, process efficiency and environmental sustainability.

The Head of Sales at James Cropper, Tom Sharrock, says: "Alignment of discontinuous fibres has been demonstrated many times at a small scale, but industrialisation has been the missing piece. Vectis changes that by enabling aligned nonwoven materials to be manufactured at an industrial scale that can realistically support commercial composite programmes, with Unimat demonstrating what that capability can deliver."

The Innovation Director at James Cropper, Mandy Clement, concludes: "This technology has been more than a decade in the making. By bringing together deep expertise in fibre behaviour with proven nonwoven manufacturing know-how, we have created a platform that opens new possibilities for aligned composite materials across multiple sectors."

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Two needlepunch lines for Chinese manufacturer of filter media

Chinese manufacturer of industrial solid-gas and solid-liquid separation filter media, Zhejiang Yanpai Filter Technology Co Ltd, has ordered two needlepunch lines from Andritz.

Andritz, of Graz, Austria, says that the lines will be installed at Yanpai's headquarters facility in Taizhou City and their start-up is scheduled for the third quarter of 2026.

The lines will include a double-doser opening system, a card and a crosslapper with an integrated ProWid system, which can monitor the weight uniformity (CV%) of the products being manufactured across their entire width during the manufacturing process and can predict any changes in weight distribution caused by the bonding process. Andritz adds that the compact layout of the lines maximises output per square metre and will enable

them to fit easily into Yanpai's existing needlepunch workshop.

Since 2019, Yanpai has operated eight Andritz needlepunch lines. The company's Vice Chairman, Chen Ping, says: "Installing two additional lines from Andritz underscores our confidence in its technology and service. They will support our expansion into new industrial segments and help us ensure stable quality."

Global Sales Director, Engineered Textiles, at Andritz, Guillaume Julien, adds: "A repeat order is a strong confirmation that our technology delivers both high quality and a fast [return on investment] ROI for Yanpai."

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Nonwovenn unveils activated-carbon filter media for ostomy pouches

A range of perfluoroalkyl and polyfluoroalkyl substances (PFAS)-free activated-carbon filter media has been developed for ostomy pouches by Nonwovenn, of Bridgewater, UK.

Patients commonly use ostomy bags or ostomy pouches following surgery for colon and bladder cancer, Crohn's disease and colitis. They are designed to collect human waste hygienically so that it can be disposed of later. Ostomy bags also feature filters that process gas produced by the body, deodorising it and allowing it to escape.

Nonwovenn says that its activated carbon filter media absorb and deodorise gas, and demonstrate low pressure drop. The media are sold as roll goods or cut filter inserts that are compatible with a wide variety of formats of ostomy pouch.

MediTech Business Director at Nonwovenn, John Birkett, concludes: "Demographic trends and regulatory

Patients commonly use ostomy bags or ostomy pouches, as shown here, following surgery for colon or bladder cancer, Crohn's disease or colitis.

changes are driving the need for next-generation ostomy care technologies. We want to focus on delivering high-quality PFAS-free filter media that can meet the practical and regulatory demands of modern ostomy systems. Ageing populations are driving greater demand for ostomy care, and we believe that reliable, discreet and comfortable pouch technology that offers effective control is incredibly important."



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Autoneum unveils sound-absorbing frunks for electric vehicles...



Made substantially from recycled polyethylene terephthalate fibres, this compression-moulded frunk is light in weight and provides acoustic and thermal insulation, according to its developer, Autoneum.

Autoneum has adapted its sound-absorbing automotive underfloor system (Ultra-Silent⁽¹⁾) for the production of the front boots (so-called frunks) for battery electric vehicles (BEVs).

Made substantially from recycled polyethylene terephthalate (PET) fibres, the compression-moulded frunks are light in weight and also provide thermal insulation. Autoneum, of Winterthur, Switzerland, says that it has already received orders for the new frunk from three major car makers in Asia and Europe, which will see them used in three models of BEVs in total. The series production of two of the BEVs started in China and Germany in 2025. The production of the balance will begin in a few months.

In the front of a BEV, the absence of a combustion engine creates additional storage space under the bonnet. In contrast to conventional frunk systems, which are made from multiple solid plastic parts and require complex assembly, Autoneum's Ultra-Silent frunk is a single, monomaterial component, which streamlines both manufacturing and assembly processes. Further, Autoneum says that the frunk is up to 50% (or up to 5 kg) lighter in weight than conventional alternatives.

The company adds that, as up to 70% of the PET used to produce the frunk can be sourced from recycled feedstocks, greenhouse-gas emissions associated with its manufacture can be cut by as much as 50% compared with injection-

moulded frunks. The frunk can also be recycled at the end of its service life.

Tests conducted under controlled conditions show that ice placed in the Ultra-Silent frunk remained frozen for up to 28

... and finalises second acquisition in China

Autoneum has completed its purchase of a supplier of parts for acoustic and thermal management to the automotive industry in China, Chengdu Yiqi-Sihuan Automobile Interior Co Ltd, for CHF16 million.

In May 2025, Autoneum, of Winterthur, Switzerland, announced initially that it would be purchasing Chengdu FAW-Sihuan Group⁽¹⁾. During the acquisition process, however, it clarified the company's name to better reflect the scope of the transaction.

Established in 2011 and based in Chengdu, China, Chengdu Yiqi-Sihuan operates four production facilities, employing around 240 people in total, in the immediate vicinity of automotive manufacturers in the north, centre and south of China. These manufacturers include FAW-VW, FAW-Audi, FAW-Toyota and Geely.

Chengdu Yiqi-Sihuan's product portfolio is very similar to that of Autoneum and includes components such as floor insulators, wheelhouse liners, boot trims, inner dashes, hoodliners and outer dashes.

hours at an ambient temperature of 30°C, significantly outperforming conventional plastic alternatives. Further, based on simulations, the Ultra-Silent frunk could improve pedestrian protection and passive safety compared with injection-moulded counterparts, owing to its higher plasticity.

Autoneum's Global Product Manager Exterior, Cyro Rovath, concludes: "With the innovative frunk made from our environmentally friendly Ultra-Silent polyester textile technology, we are supporting automotive manufacturers in their goal of minimising the [carbon dioxide] CO₂ footprint of their products by integrating sustainable and lightweight components."

See also: ⁽¹⁾Nonwoven undercovers provide protection for batteries in electric vehicles, <https://www.technical-textiles.net/node/74859>

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In its 2024 financial year, Chengdu Yiqi-Sihuan Group generated revenues of around CHF27 million (approximately US\$32 million or €29 million).

Autoneum's Chief Executive Officer (CEO), Eelco Spoelder, says: "We aim to grow with Chinese [carmakers] not only in China, but also globally. Expanding our local presence in China allows us to be closer to the local customers and accelerate innovation cycles—both of which are critical for sustainable growth."

Autoneum will continue to operate Chengdu Yiqi-Sihuan's businesses under their existing Chinese names, while integrating them fully into its Business Group Asia.

See also: ⁽¹⁾Autoneum makes second acquisition in China, <https://www.technical-textiles.net/node/77777>

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Toray launches flexible, heat-resistant piezoelectric polymer

A heat-resistant piezoelectric polymer that can be used to produce flexible nonwovens has been launched by Toray Industries of Tokyo, Japan.

The company says that the polymer, which is stable in temperatures exceeding 200°C, could be used for the manufacture of devices for the monitoring and detection of vibrations for the automotive, robotics, industrial machinery and aerospace applications.

Toray adds that its polymer does not possess the same limitations as existing commercial piezoelectric materials. Polyvinylidene fluoride (PVDF), for instance, can only be exposed to operating temperatures of approximately 80°C, while lead zirconate titanate is hard and brittle, making it difficult to apply to components with complex geometries or large surface areas. This limits their application.

Carmakers, for instance, would use active noise-cancellation systems to suppress the noises inside the cabins of their vehicles, while manufacturers of industrial machinery are exploring the use of vibration-monitoring systems that would provide early warnings of anomalies with their equipment. These applications require piezoelectric sensors that can be installed over large areas. Further, devices installed near motors and engines, in space environments and on heat-transfer piping would need to be made using piezoelectric materials that work at temperatures above 100°C.

Materials	Inorganic	Polymer	
	PZT	PVDF	New polymer
Piezo-electricity (pC/N)	>250	≤100	≤100
Flexibility	×	○	○
Specific gravity	7.6	1.8	1.5
Heat resistance	>250°C	<120°C	≤200°C

PZT: Lead zirconate titanate, PVDF: Polyvinylidene fluoride.



Table showing the properties of conventional piezoelectric materials and Toray's polymer.

Further to nonwovens, Toray will sell its heat-resistant polymer as a varnish or film. The polymer is free from lead and fluorine, and complies with the European Union (EU)'s Restriction of Hazardous Substances directive and regulations on per- and polyfluoroalkyl substances (PFAS).

Toray will start selling the polymer in 2028 and will supply samples to prospective customers in the meantime.

Minku Kim, Corporate Communications, Toray Industries.
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<http://www.dornbirn-gfc.com>

Introduction to Textiles

22–24 September 2026
Manchester, UK
Robyn Ingham, Events Coordinator, The Textiles Institute;
Tel: +44 (161) 237-1188
ringham@textileinst.org.uk;
<https://www.textileinstitute.org>

Outlook

22–24 September 2026
Cascais, Portugal
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/outlook/outlook-2022>

October 2026

GO Wipes Europe

20–21 October 2026
Cologne, Germany
Ellie Baker, Events and Sponsorship Sales, Smithers;
Tel: +44 (1372) 802291
ebaker@smithers.com;
<https://www.go-wipes.com>

Milipol Qatar

20–22 October 2026
Doha, Qatar
Comexposium
sales@milipol.com;
<https://en.milipol.com>

FiltXPO

28–29 October 2026
Miami Beach, Florida, USA
Lori Reynolds, Director of Events, INDA (Association of the Nonwoven Fabrics Industry);
Tel: +1 (919) 459-3716;
Fax: +1 (919) 459-3701;
lori@filtxpo.com;
<https://www.filtxpo.com>

November 2026

Advanced Textiles Expo

3–5 November 2026
Orlando, Florida, USA
Amy Collins, Advanced Textiles Association;
Tel: +1 651 225 6970
amy.collins@textiles.org;
<https://www.textiles.org/event/ifai-expo-2023>

ISPO

3–5 November 2026
Amsterdam, The Netherlands
Sabine Wagner, ISPO;
Tel: +49 (89) 949-20802
sabine.wagner@messe-muenchen.de;
<https://www.ispo.com/en/munich>

Advanced Engineering

4–5 November 2026
Birmingham, UK
Alison Willis, Divisional Director, Easy Fairs;
Tel: +44 (20) 3196-4303
alison.willis@easyfairs.com;
<https://www.advancedengineeringuk.com/>

26th Annual Carbon Fiber Conference

10–12 November 2026
Huntsville, Alabama, USA
Beth Ascue, Conference Manager, Gardner Business Media, Inc
BAscue@gardner.media;
<https://www.carbonfiberevent.com/>

Hygienix

16–19 November 2026
Houston, Texas, USA
Tracie Leatham, INDA (Association of the Nonwoven Fabrics Industry);
Tel: +1 (919) 459-3726
tleatham@inda.org;
<https://www.hygienix.org>

Space Tech Expo Europe

17–19 November 2026
Bremen, Germany
Gordon McHattie, Event Director, Smarter Shows;
Tel: +44 (1273) 916309
gordon.mchattie@smartershows.com;
<http://www.spacetecheurope.eu>

ITMA Asia + CITME

20–24 November 2026
Shanghai, China
Daphne Poon, ITMA Services;
Tel: +65 9478-9543
daphnepoon@itma.com;
<https://www.itmaasia.com>

Aachen-Dresden-Denkendorf International Textile Conference

26–27 November 2026
Aachen, Germany
Sabine Keller, Deutsche Institute für Textil-

und Faserforschung Denkendorf (DITF);
Tel: +49 (711) 9340-505
add-itc-2020@ditf.de;
<https://www.aachen-dresden-denkendorf.de/en/itc>

January 2027

Heimtextil

12–15 January 2027
Frankfurt, Germany
Bettina Bär, Messe Frankfurt Exhibition GmbH;
Tel: +49 (69) 7575-6096
bettina.baer@messefrankfurt.com;
<https://heimtextil.messefrankfurt.com>

Wearable Expo

17–19 February 2027
Tokyo, Japan
Reed Exhibitions Japan Ltd;
Tel: +81 (3) 3349-8502;
Fax: +81 (3) 3349-4900;
wearable-eng@reedexpo.co.jp;
<https://www.wearable-expo.jp>

March 2027

IDEA

23–25 March 2027
Kansas City, Missouri, 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>

May 2027

NPE: The Plastics Show

3–7 May 2027
Orlando, Florida, USA
Ashley Stoney, Plastics Industry Association;
Tel: +1 (202) 974-5210;
Fax: +1 (202) 296-7005;
astoney@plasticsindustry.org;
<http://www.npe.org>

September 2027

ITMA

16–22 September 2027
Hannover, Germany
ITMA Services;
Tel: +65 6849-9368
info@itma.com;
<https://itma.com>



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Techtextil North America

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Issue	Advertising features	Bonus distribution	Order deadline
Autumn	ITMA Asia + CITME preview Performance Fibres Agriculture/horticulture Military Safety and protection	<i>CINTE Techtextil China</i> (01–03 Sept, Shanghai) <i>Dornbirn Global Fiber Congress</i> (16–18 Sept, Dornbirn) <i>Milipol</i> (20–22 Oct, Qatar) <i>ITMA Asia + CITME</i> (20–24 Nov, Shanghai)	31 July
Winter	BUYER'S GUIDE Medical textiles Architecture and construction Geotextiles Acoustic/thermal insulation	Major events in 2027, including <i>ITMA</i> , <i>Techtextil</i> and <i>Texprocess</i> <i>North America</i> , and <i>IDEA</i>	30 October
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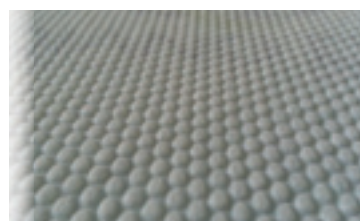
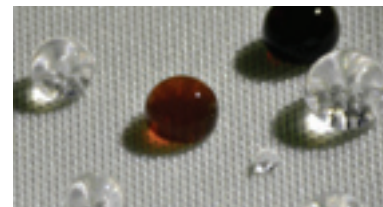
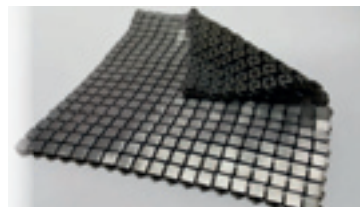
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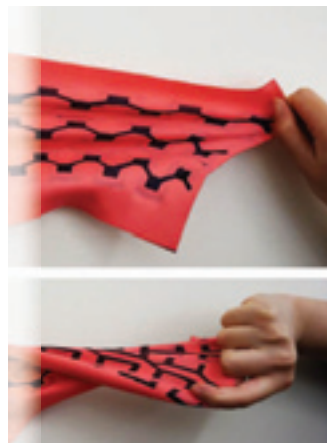
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ADVANCES IN *Textiles* technology

February 2022

An international newsletter on textiles technology edited by:
James Bakewell

Fibres, filaments and yarns

Artificial silk door-pulls feature on Mercedes-Benz concept car

Novel, sustainable door-pulls made from artificial silk fibre are being used by Mercedes-Benz of Stuttgart, Germany, in its latest concept car, the Vision EQXX.

The carmaker has designed Vision EQXX to highlight ways in which luxury vehicles can be produced using technologies that are more environmentally sustainable than conventional approaches.

The artificial silk fibre is called BioSteel and is produced by AMSilk of Planegg, Germany. The company says that the fibres are biodegradable and recyclable, and no waste is generated during their manufacture. It adds that BioSteel demonstrates mechanical properties

The door pulls for the Vision EQXX concept car from Mercedes-Benz are made from BioSteel artificial silk fibres.

Highlights this month:

Methods for determining the effects of strains and stresses on carbon nanotube fibres are being developed by researchers at Rice University	2
A range of durable fabrics made from pre-consumer recycled polyamide (PA) 64 fibres has been launched by Invista through its Cordura brand	3
A dual-cation thermogelating finish that reduces the temperature of surfaces to which it is applied by up to 3°C has been launched by HeliQ	4
A single vented tumble dryer can discharge up to 120 million microfibrils into the air each year, according to a pilot study	5
A fibre-laying process that enables the efficient production of composite footplates and toe caps for use in footwear has been launched by Coats	7
A long, fibre-based lithium-ion battery that could be woven into fabrics is being developed by researchers at the Massachusetts Institute of Technology	10

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