# Textile Trends

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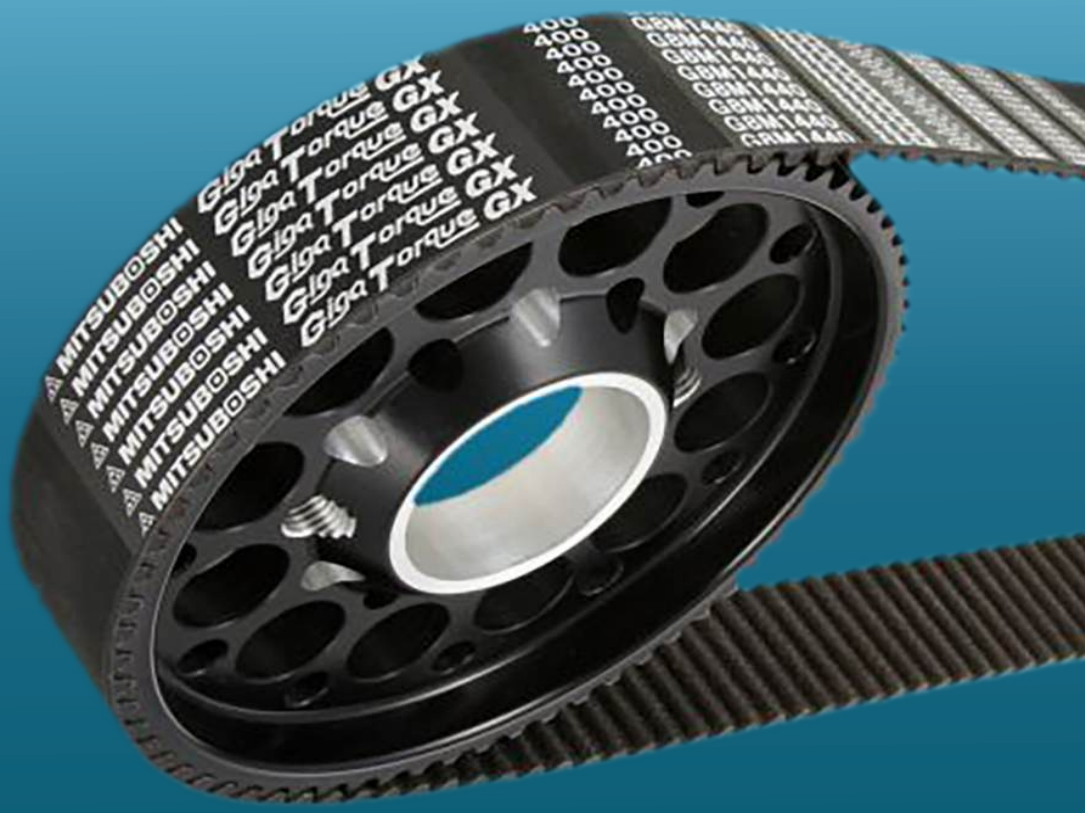


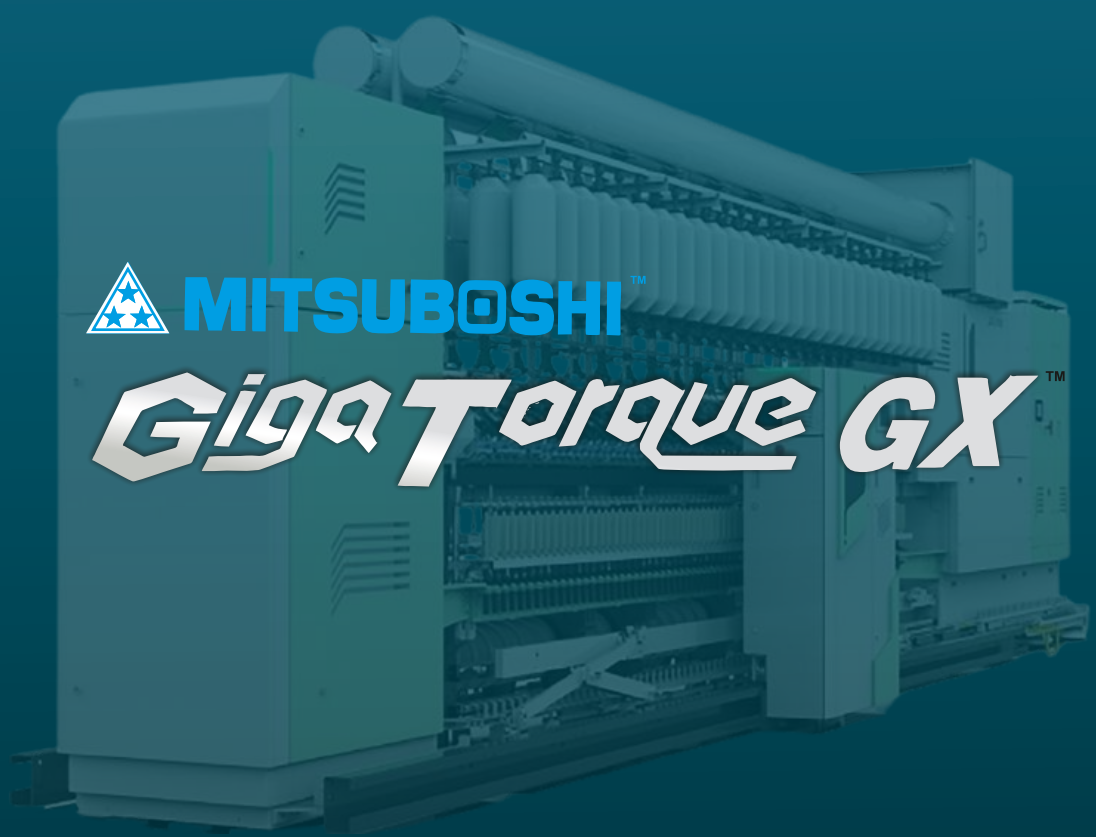

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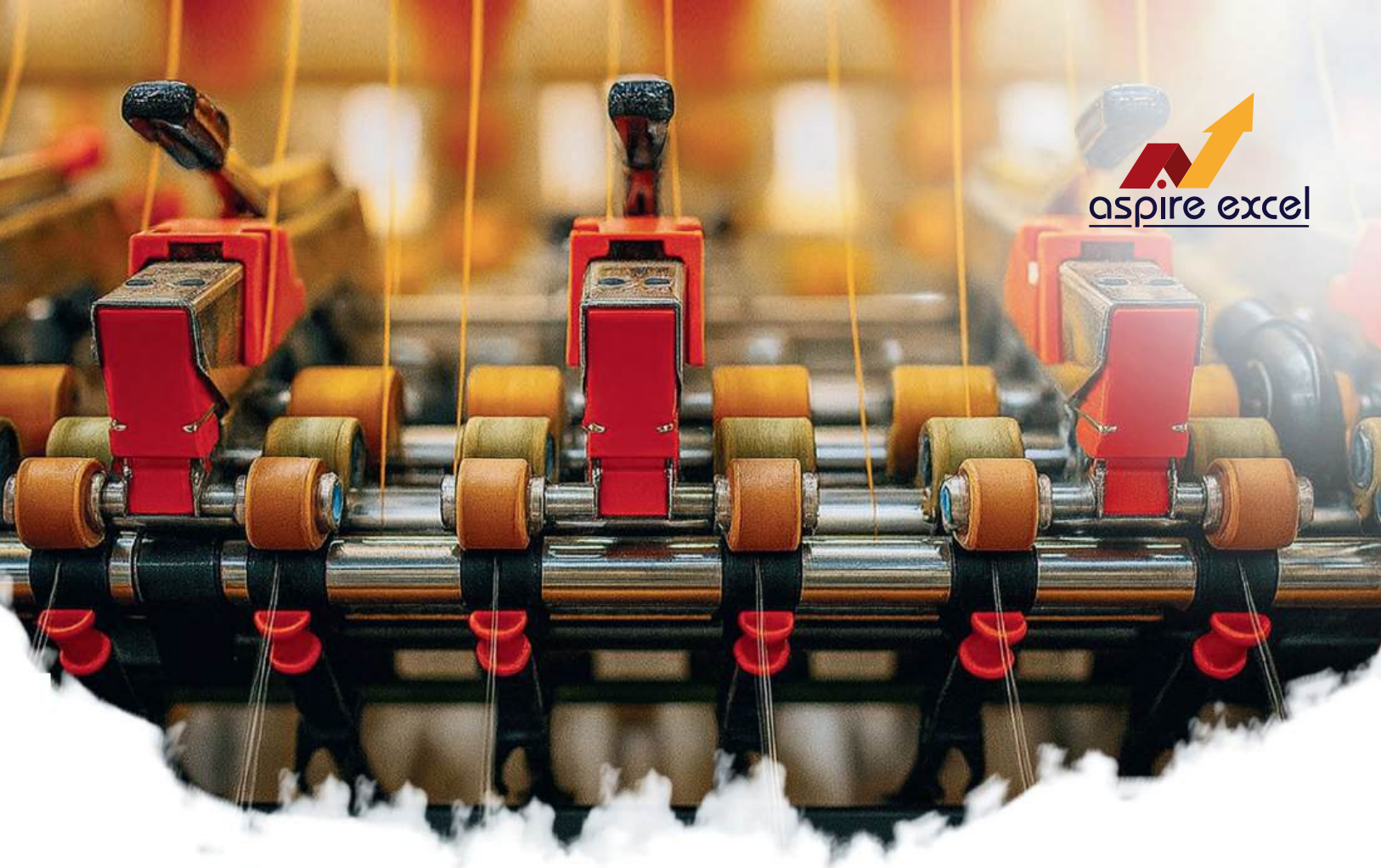

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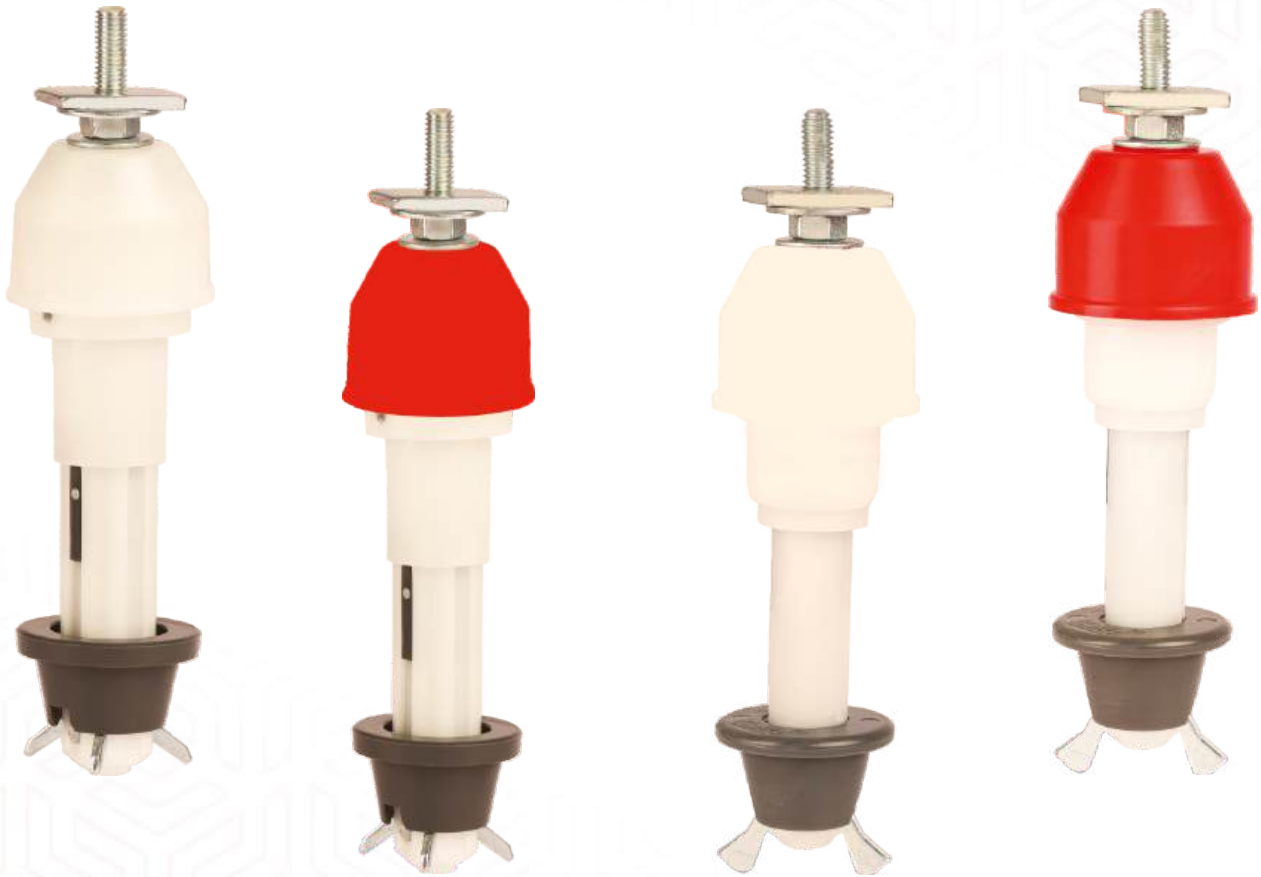

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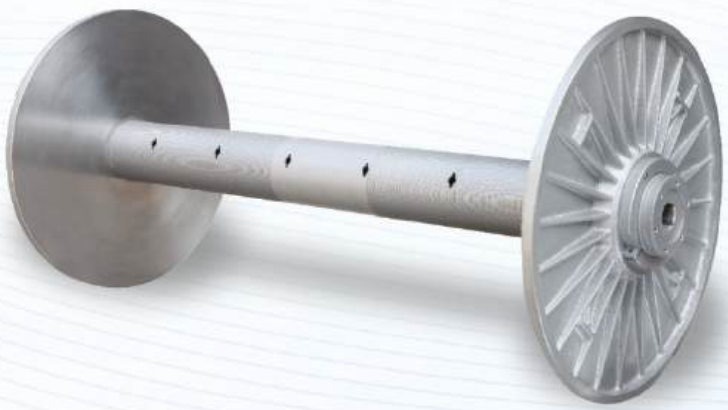

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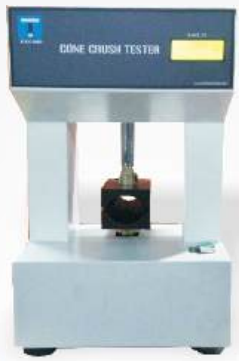


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# CONTENTS

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R NI No. 2815/58
AUGUST 2025

# EDITORIAL

## *Achieving the export target $ 100 billion of textile by 2030 seems toll order unless the game—changing reforms are carried out*

India has fixed target of $100 billion textile & apparel exports by 2030. Is this lofty ambition grounded reality? India's textile and apparel exports has been growing steadily from $11.5 billion in 2001FY to $34.8 billion 2024FY; sharing 4% in global exports worth $774.4 billion. At this pace to achieve target of $100 billion in 2030, game changer reforms are to be carried out.

Over the period from financial year FY01 to FY24 India's share of textile & apparel exports in global exports remain stubbornly 3%, over this entire period the shares of Bangladesh and Vietnam have surged ahead. Recent tariff war between USA and China after Trump took office will open an opportunity to India to extend textile & apparel market left by China. In fact, India should focus on entire T&A exports to achieve its target of $100 billion by stipulated time. But there are many challenges ahead in the textile value chain.

India's cotton production had been increased at higher pace during 2002-2003—2013-2014 harvesting cotton by genetically modified cotton seeds. However, production since 2014, has been gradually declining, with output projected to fall to 30 million bales in FY2025; this has largely caused by not allowing next generation, herbicide, of Bt seeds to come to India despite clearance of ministry of environment, govt. of India.

India has over 1 lakh garment factories, but 80% of them are in decentralized sector. Exports are way below their potential. Slow adoption of modern technology and weak value chain integration are key barriers. The global apparel market is expected to reach $2.37 trillion by 2030, presenting a major opportunity. While PM Mega Integrated Textile Region Apparel (MPMITRA) scheme aims to develop integrated textile parks, high land requirements exclude MSMEs limiting its reach.

To overcome the challenges and achieving the target of $100 billion exports of T&A by 2030 India must adopt a strategic approach and implement bold policy reforms. First, India's garment sector needs to transition into fashion-driven industry. Second, the MPMITRA scheme must be put in fast track to create integrated textile hubs. Third, negotiating free trade agreement (FTA) with EU & USA. Apart from above, India should explore emerging markets like Japan, Russia, Brazil etc. This is feasible only if Modi Govt. embraces these bold reforms.

## US-China trade deal signed

The US and China finalised a trade understanding reached in May in Geneva, US Commerce Secretary Howard Lutnick said, adding that the White House has imminent plans to reach agreements with a set of 10 major trading partners. The China deal, which Lutnick said had been signed two days ago, codifies the terms laid out in trade talks between Beijing and Washington, including a commitment from China to deliver rare earths used in everything from wind turbines to jet planes. "They're going to deliver rare earths to us" and once they do that, "we'll take down our countermeasures," Lutnick told *Bloomberg News* in an interview. A White House official said the US and China agreed to the terms to implement the Geneva accord. A spokesman for the Chinese Embassy in Washington declined to comment, while China's foreign ministry in Beijing didn't immediately respond to a request for comment recently. Asian stocks and European futures advanced, and a gauge of global equities reached another record high, in part on trade-deal optimism. The China agreement sets out the terms laid out in trade talks between Beijing and Washington this year — a milestone after both sides have accused each other of violating the terms of previous handshake accords. Yet it still hinges on future actions by both nations, including China's export of rare earth materials. Lutnick told *Bloomberg TV* that President Donald Trump was also prepared to finalise a state of trade deals in the coming two weeks in connection with the president's July 9 deadline to reinstate higher tariffs he paused in April. "We're going to do top 10 deals, put them in the right category, and then these other countries will fit behind," he said. Lutnick didn't specify which nations would be part of that first wave of trade pacts, though earlier recently Trump suggested the US was nearing an agreement with India. A team of Indian trade officials, led by chief negotiator Rajesh Agarwal, is slated to hold meetings with officials in Washington over two days recently to resolve differences and find a common ground, *Bloomberg News* has reported. ❐

## EU slaps Russia with new sanctions

The European Union (EU) and Britain recently ramped up pressure on Russia over its war on Ukraine, targeting Moscow's energy sector, shadow fleet of aging oil tankers, and military intelligence service with new sanctions. "The message is clear: Europe will not back down in its support for Ukraine. The EU will keep raising the pressure until Russia ends its war," EU foreign policy chief Kaja Kallas said after the bloc agreed its new measures, including a new oil price cap, Kallas said it's "one of its strongest sanctions packages against Russia to date" linked to the war, now in its fourth year. It comes as European countries start to buy US weapons for Ukraine to help the country better defend itself. Ukrainian President Volodmyr Zelenskyy welcomed the new measurs, describing them as a "timely and necessary" step amid intensified Russian attacks. "All infrastructure of Russia's war must be blocked," Zelenskyy said, adding that Ukraine will synchronize its sanctions with the EU and introduce its own additional measures soon. Kremlin spokesman Dmitry Peskov brushed off the EU move, saying that "we consider such unilateral restrictions unlawful". "At the same time, we have acquired certain immunity from sanctions. We have adapted to living under sanctions." Peskov said in a conference call with reporters. "We will need to analyse the new package in order to minimise negative consequences from it." The UK, meanwhile, imposed sanctions on unit of Russia's military intelligence service, GRU. Also added to the list were 18 officers the UK said helped to plan a bomb attack on a theatre in southern Ukraine in 2022 and to target the family of a former Russian spy who was later poisoned with a nerve agent. Nato also condemned Russia's cyberattacks. ❐

## Europe becomes investor favourite

Peter Roessner is feeling both sides of Donald Trump's trade war. While tariff risks mean the CEO of Luxembourg-based hydrogen firm H2Apex can no longer rely on US suppliers for its more than 200 million euro ($235 million) project in Lubmin, Germany, investor interest in European projects is rising. "Investors in the hydrogen sector are now focusing more on the European market due to the absolute uncertainty and planning insecurity in the USA," he told reporters, adding this included both local and US players. "The framework conditions in Europe

are not ideal, but they are stable." Roessner's comments are indicative of a trend that has taken hold in recent months: Investors and companies are increasingly turning to Europe, drawn by an infrastructure- and defence-led spending push that offers stability at a time when Trump's erratic tariff policies have made the US market a less safe bet, according to more than a dozen interviews with executives and fund managers. The shift has also been fuelled by Trump's tendency to make sweeping tariff threats and announcements that are then often delayed or changed, and to draw up executive orders that have tested the limits of his presidential power. "The US is coming from a very capital market-friendly and stable environment. Now there is political intervention and also an attempt to expand power," said Christoph Witzke, who heads the CIO office at Deka, one of Germany's largest investment funds. "This creates uncertainty that some kind of intervention ... could come at any time," he said, adding that Europe had become the centre of attention in the most recent investor conferences as a result. With a July 9 deadline for a trade deal less than two weeks away—and Trump saying he will impose 50% tariffs on all EU goods without a deal—investors have started shifting their money. Data from LSEG's Lipper Funds show that more than $100 billion has flowed into European equity funds so far this year—up threefold from the same period last year—while outflows from the US more than doubled to nearly $87 billion. "All that is an indication that at least market forces, investors, those who move real money around, actually see value and have confidence in Europe," ECB President Christine Lagarde said earlier of June. This shift in focus was also illustrated by the weak market debut of Holcim's North American spin-off Amrize in late June, which was announced to much fanfare in early 2024 at a time when the lure of US valuations also got some of its rivals excited. In contrast, the share price of Holcim itself, now squarely focused on Europe, LA and North Africa, soared 15%. Siemens Energy, which makes more than a fifth of its sales in the US, has noted a shift in sentiment, finance chief Maria Ferraro said, on the back of a recent US road show and an 84% rise in the group's share price year-to-date. Apart from the improved market view, more investments are also crucial in efforts to revive the EU's economy and narrow its competitiveness gap compared with other regions, most notably China and the United States. Closely watched FDI flows into Germany, the bloc's largest economy, more than doubled to 46 billion euros in the first four months of 2025, according to data from Bundesbank. ❐

## Trump imposes 30% tariff on EU, Mexico

President Donald Trump unleashed his latest tariff ultimatums, declaring a 30% rate for Mexico and the European Union, as his trade agenda continues to keep allies off balance and inject uncertainty into global financial markets. Trump made the announcement in two letters posted to social media recently as he informed key trading partners of new rates if they cannot negotiate better terms. He has spent the week sending out letters to countries, tweaking his proposed tariff levels from April and inviting trading partners to negotiate further. The EU had been hoping to conclude a tentative deal with the US to stave off the tariff, but Trump's letter dulled optimism for an 11th-hour agreement between the major economies. He did, however, leave an opening for additional adjustments. "If you wish to open your heretofore closed Trading Market to the United States, and eliminate your Tariff, and Non-Tariff, Policy and Trade Barriers, we will, perhaps, consider an adjustment to this letter," Trump wrote. With the EU, Trump initially announced a 20% tariff in his "Liberation Day" event in early April before lowering it to 10% as part of a 90-day negotiating pause. But he quickly grew frustrated with the 27-country block and threatened a 50% rate, spurring more talks. Earlier in the June, the EU said it was closing in on a framework agreement with the US after European Commission President Ursula von der Leyen spoke with Trump recently. The tariff rates would apply widely, though separate from the president's sectoral tariffs on products such as automobiles and steel. If implemented, it could place the EU at a competitive disadvantage on American exports to the neighboring UK, which left the bloc in 2020 and was the first country to come to a top-line trade pact with Trump. In his letter to Mexican President Claudia

Sheinbaum, Trump said the country has been "helping me secure the border," but added that it wasn't enough. Trump added that if Mexico "is successful in challenging the Cartels and stopping the flow of Fentanyl," the US would consider adjusting the levies. "These Tariffs may be modified, upward or downward, depending on our relationship with your Country," he added. The letter is silent on whether the US will preserve a carve-out for goods traded under the USMCA trade deal, which have been exempt from the current 25% rate. The administration has previously said it will keep the exemption for Canada. Mexico is the third country to get a letter that wasn't actually facing a tariff hike on the now-extended July 9 deadline, following Canada and Brazil. Other countries Trump has singled out for tariffs hikes in recent day include Japan, South Korea, South Africa, Indonesia, Thailand and Cambodia, as well as Algeria, Libya, Iraq and Sri Lanka. ❐

## World goods trade surge 3.6% in Q1 to beat the US levy of tariffs: WTO

The volume of world trade in goods increased 3.6 per cent quarter-on-quarter and 5.3 per cent year-on-year in the first quarter of 2025 — much higher than earlier forecasts – in anticipation of higher tariffs in the US, per WTO's latest projections of late. However, this expansion is likely to slow down later in the year as fully stocked inventories and higher tariffs may weigh on import demand, according to WTO economists. "The new tariffs announced by the US on April 2 at the start of the second quarter were widely anticipated, allowing importers to move purchases forward to avoid paying higher duties at a later date," according to a WTO statement. Trade volume growth in the first quarter was above projections issued in the WTO's *Global Trade Outlook* and statistics report released on April 16. In the report, the WTO Secretariat had made a baseline forecast of 2.7 per cent for 2025, which assumed a continuation of policies in place at the start of the year. North America recorded the strongest quarter-on-quarter import growth of any region at 13.4 per cent, followed by Africa at 5.1 per cent, South and Central America and the Caribbean at 3.6 per cent, West Asia at 3 per cent, Europe at 1.3 per cent, and Asia at 1.1 per cent. On the export side, West Asia recorded the strongest quarter-on-quarter growth at 6.3 per cent, South America at 3.2 per cent, Africa at 2.5 per cent, Europe at 1.9 per cent and North America at 1.8 per cent. The CIS region posted a decline in both exports and imports. Despite a robust first quarter performance, monthly merchandise trade statistics in value terms available for many countries into the second quarter of 2025 show evidence of import demand starting to slow after the first quarter surge, the statement noted. For example, the US' imports were up 25 per cent in the first quarter, but only 1 per cent in the first two months of the second quarter. ❐

## BRICS remains a powerful force for global wellness: Modi

The BRICS remains a powerful force for economic cooperation and global good, Prime Minister Narendra Modi said recently as several top leaders of the member nations of the grouping converged on this seaside Brazilian city for the summit talks. Chinese President Xi Jinping and his Russian counterpart Vladimir Putin skipped the summit being hosted by Brazil in its capacity as the current chair of the influential grouping. The BRICS has emerged as an influential grouping as it brings together 11 major emerging economies, representing around 49.5 per cent of the global population, around 40 per cent of the global GDP and around 26 per cent of the global trade. BRICS, originally comprising Brazil, Russia, India, China and South Africa, expanded in 2024 to include Egypt, Ethiopia, Iran and the United Arab Emirates, and Indonesia joining in 2025. Modi arrived here recently night on the fourth leg of his five-nation tour after visitng Ghana, Trinidad and Tobago, and Argentina. The situation in West Asia, the Russia-Ukraine conflict and challenges facing the Global South are likely to figure prominently at the BRICS Summit. "Grateful to President Lula for hosting this year's BRICS Summit in Rio de Janeiro. BRICS remains a powerful force for economic cooperation and global good," Modi said in a social media post after he was welcomed at the venue of the summit by the Brazilian leader. India will assume the presidency of BRICS next year. ■

## $135 billion Indian diaspora send home a record

The Indian diaspora continues to support their families back home by sending a higher amount of dollars for their maintenance. Gross inward remittances by overseas Indians as reflected in 'private transfers' in the balance of payments rose to a record $135.5 billion in FY25, up 14% over previous year, according to the latest balance of payments data released by the Reserve Bank of India. India has been the largest recipient of remittances by its diaspora for more than a decade now and in absolute terms the inflows have more than doubled in eight years from $61 billion in FY17. RBI data shows that remittances accounted for over 10% of the gross current account inflows of a $1 trillion during the FY25. "The strong growth in remittances has persisted despite weakness in crude oil prices," said Gaura Sengupta, chief economist at IDFC First Bank. "This is a result of rising share of the skilled labour force migrating to developed markets such as US, UK and Singapore. As per RBI data, these three countries account for 45% share in total remittances. Meanwhile the share of GCC countries has been reducing". The other major sources of current account inflows are software services income and business services income which crossed the $100-billion mark during the year." India's remittance receipts have generally remained higher than India's gross inward foreign direct investment (FDI) flows, thus establishing their importance as a stable source of external financing," noted a survey of remittances by the RBI staff. Besides, they are a major source of funding for India's trade deficit. In FY25, gross inward remittances were nearly half (47%) of the country's merechandise trade deficit of $287 billion. India has been the largest recipient of inward remittances, according to World Bank data. In 2024, Mexico was at a distant second position with inflows estimated at nearly half of India's at $68 billion and China was third which is estimated to have got $48 billion during the year. Globally, inward remittances represent the flow of cross-border household income, arising from the temporary or permanent movement of people to foreign economies. Moreover, as defined by the International Monetary Fund (IMF, 2009), two items in an economy's balance of payments (BoP) statistics relate to remittances — compensation of employees under primary income account and personal transfers under secondary income account. In the case of India, personal transfers, primarily comprising inward remittances — compensation of employees under primary income account and personal transfers under secondary income account. In the case of India, personal transfers, primarily comprising inward remittances for family maintenance from Indian workers residing aborad, and local withdrawals from non-resident deposit accounts form the major portion of cross-border inward remittances, noted the Reserve Bank of India paper, which was published in March's monthly bulletin. ❐

## Economy has three-fold increase since FY15, growth will sustain: Centre

The economy has nearly tripled in the last 10 years since 2014-15, a government note stated recently. It also underlined that the easing of inflation is not a temporary phenomenon. "India's economic size has expanded sharply. In 2014-15, the GDP at current prices was ₹106.57 lakh core. This figure is expected to rise to ₹331.03 lakh crore in 2024-25, nearly tripling in 10 years" the note said. The real economic growth rate of 6.5 per cent in FY 25 is expected to sustain this year as well. The government has projected growth to be in range of 6.3-6.8 per cent for FY26. Noting that the global conditions remain fragile, the note quoted the United Nations, which has described the world economy as being in a "precarious moment" with trade tensions, policy uncertainties and declining cross-border investments. "India continues to stand out as a bright spot, with global institutions and industry bodies expressing confidence in its growth prospects," the note said. It said rural consumption had picked up, urban spending is rising, and private investment is on the upswing. It highlighted the current trend in the rates (retail inflation based on the Consumer Price Index and wholesale inflation

based on the Wholesale Price Index) offering relief to both households and business. While retail inflation cooled to a 75-month low of 2.82 per cent in May, wholesale inflation dipped to a 14-month-low of 0.39 per cent. The Consumer Food Price Index recorded an inflation rate of just 0.99 per cent in May 2025, the lowest since October 2021. Rural and urban food inflation were almost identical, at 0.95 per cent and 0.96 per cent respectively. Compared to April 2025, food inflation declined by 79 basis points, showing a clear downward trend in essential items like vegetables and grains. According to the Reserve Bank of India's Financial Stability Report released in June, the outlook for inflation remains favourable. Food prices are expected to stay stable due to robust crop production. On the global front, the risk of imported inflation appears low for now. A slowdown in global demand is likely to keep prices of crude oil and other commodities in check. However, recent tensions in the Middle East have added some uncertainty to this picture. Overall, the RBI believes that inflation will stay aligned with its medium-term target of 4 per cent and may even fall slightly in the coming months. "This easing trend gives confidence that the current price stability is not temporary but part of a broader pattern of economic stability," the note said. ❐

## Forex reserves touch $700 billion

India's foreign exchange reserves rose by $4.8 billion to $702.7 billion during the week ended June 27. This is the highest since September 27, 2024, when the reserves had touched all-time high of $705 billion, latest data released by the Reserve Bank of India (RBI) showed. The total reserves were up on the back of a rise in foreign currency assets, which rose by $5.7 billion during the reported week. This increase in foreign currency assets was driven by active intervention by the RBI via dollar purchase, said experts. The central bank net purchases were $5.9 billion during the week. However, the rise in reserves was partially offset by a revaluation loss of around $1.5 billion, they said. "The $702 billion number has been achieved with the RBI actually buying $5.9 billion durng the week. It got slightly balanced out by a revaluation loss of $1.5 billion. So technically, reserves should be higher this week as well, because there was dollar weakness, but we don't have an estimate yet," said Gaura Sen Gupta, chief economist, IDFC FIRST Bank. "For the full month of June, the RBI has net bought dollars in small amounts," she added. The rupee appreciated by 1.3 per cent in the reported week, mirroring a 1.3 per cent decline in the dollar index. According to the latest data, the RBI had net sold $1.6 billion in April, after a net purchase of $14.3 billion in March. The central bank had net sold $34.5 billion in FY25, the highest since net sales of $34.9 billion in 2008-09. Based on continued rupee appreciation and broad-based dollar weakness, market participants expect the foreign exchange reserves to have increased in the current week due to positive revaluation effects. "The RBI's intervention was there in the current week also. We might expect the reserves to have inched up further," said the treasury head at a private bank. ❐

## Services sector growth hits 10-mth high in June: PMI

Indian service providers ended the first quarter of 2025-2026 (Q1FY26) on strong footing as output and new order intakes rose at the fastest rates since June of August 2024, aided by another robust expansion in international sales and job creation, said a private survey recently. The HSBC India services purchasing managers' index (PMI), compiled by S&P Global, stood at 60.4 in June, up from 58.8 in May. The index has been above the neutral 50 mark, which separates contraction from expansion, for 47 months straight. "Monitored firms linked the upturn to positive demand trends and ongoing improvements in sales. Services companies benefited most from the continued strength of the domestic market, alongside a marked increase in new export business," survey said. The survey noted that overseas demand particularly improved from the Asian, West Asian and US markets, according to panel members. Pranjul Bhandari, chief India economist at HSBC, said that the services PMI business activity index was up to a ten-month high, led by a sharp rise in new domestic orders. ■

# Weaving cheers

With nearly 2 per cent of the contribution to the country's GDP, India is the sixth largest exporter of textiles globally and holds 3.9 per cent share in world textile exports. The sector provides direct employment to over 45 million people and indirect jobs to over 100 million people (Ministry of Textile 2023-24). Estimated to touch $350 billion by 2030, the Indian textile industry is expected to create 3.5 crore jobs.

However, the National Accounts Statistics 2023-24 shows that the share of manufacture of textiles and cotton ginning in the country's GVA has been almost stagnant during 2013-18 and 2018-24, reflecting a CAGR of (–) 1 per cent. While the traditional sub-segments of the textile sector are facing glitches over the years, the new niche segments (technical textiles) are carving new paths. Further, the ongoing political unrest in Bangladesh has opened up both risks and opportunities in sustainable textiles, organic cotton, and eco-friendly manufacturing in India. While traditional textiles remains vital, the rise of technical textiles has opened a key opportunity.

**Advanced Tech**

Technical textiles is an advanced technology used for various applications ranging from automobiles to space applications. The demand for sustainable textiles is increasing particularly for applications such as packtech (biodegradable jute sacks), indutech (conveyer belts, etc.), hometech (blinds, fire-resistant curtains, etc.), meditech (non-woven absorbent pads) and sportstech (wearable technology for sports and fitness applications). Further, the 3D non-woven textiles have expanded the industry's reach into automotive, aerospace and protective gear manufacturing.

While the Indian technical textile industry is experiencing strong growth of 10-12 per cent (CAGR), the market is projected to grow from $29 billion in 2024 to $309 billion by 2047. The country has also become a net exporter of technical textiles recording a growth of 5.3 per cent CAGR from $1.99 billion in 2019 to $2.59 billion in 2024. The penetration rate is expected to increase from 13-20 per cent in 2026 to 40-60 per cent by 2047.

The government has introduced a range of policies, including the National Technical Textiles Mission (NTTM) and Production Linked Incentive (PLI) scheme, to give a boost to this sunrise sector. While the NTTM focusses on research and innovation, market growth, exports, PLI focuses on enhancing scale of production. The PM MITRA scheme has sanctioned seven integrated textile parks to improve infrastructure, supply chains and production efficiency. The government is reducing duties on new types of textiles machinery and correcting inverted duty structure to boost exports. Lastly, the government is focussing on creating jobs and skilling.

Over the next five years, the government aims to accelerate its market growth at 10-15 per cent. The NTTM plans to create 50,000 jobs.

This sector needs new range of skills starting from training in automation and digital technologies in manufacturing processes to a focus on sustainable practices.

However, the need of the hour is to strengthen the existing curriculum of textile engineering courses and making them more industry oriented, updated and practical, allowing students to make choices in their specific expert areas. The curriculum designing stages should involve active participation from industry professionals and offer industry internships or on the job training to expose students to latest technologies and processes. These courses may be developed in collaboration with international universities that run more comprehensive technical textile engineering courses.

With better awareness, sufficient infrastructure, improved domestic machinery production and skilling, India has the potential to become a global leader in technical textiles. ■

## India's share more to global growth than US

Central bank governor Sanjay Malhotra recently pushed back against US president Donald Trump's criticism of the Indian economy, stating that New Delhi's contribution to incremental global growth exceeds that of Washington.

"We have a very robust growth rate of 6.5%. As per the IMF, it is 6.4%, while the world is growing at 3%," Malhotra said, when asked to respond to Trump's remarks. "We are contributing about 18% to global GDP growth, which is more than the US, where the contribution is expected to be much lower at 11%. So, we are doing very well and will continue to further improve."

Trump, in a post on his social media platform Truth Social, had called India a "dead economy" and criticised the country's trade policies. "I don't care what India does with Russia," he wrote. "They can take their dead economies down together, for all I care. We have done very little business with India, their tariffs are too high, among the highest in the world," he added. ■

# PLI scheme transforms textile sector, leads ₹7,343 crore investments

The production linked incentive (PLI) scheme for textiles has emerged as a transformative initiative for the industry.

It offers financial incentives for five years to promote manufacturing in manmade fibre (MMF) apparel, fabrics and technical textiles, enabling scale, competitiveness and global integration.

The Textiles Ministry has expanded the coverage of eligible products by notifying additional HS codes for technical textiles. In a significant move towards early support, the Ministry approved amendments in February, facilitating early disbursement of ₹54 crore.

**Budgetary Outlay**

Incentive payouts will cover five financial years (FY26 to FY30) in the FY25 to FY29 period, with a total budgetary outlay of ₹10,683 crore.

Till date, the scheme has catalysed investments of ₹7,343 crore, turnover of ₹4,648 crore and exports of ₹538 crore.

Gautam Kalra, Madura Industrial Textiles, one of the scheme's beneficiaries, said it is not just about financial incentives, the scheme also facilitates technology transfer and innovation in India's MMF and technical textiles sector. The minimum investment threshold under the scheme is ₹100 crore (Part 1) and ₹300 crore (Part 2), with incentive disbursements linked to achieving incremental turnover of 25 per cent over the previous year.

**Investment Boost**

Nikhil Dake, CFO, Global IGN, another beneficiary company, said the support under the PLI scheme has enabled the company to accelerate investment in automation, product development, capacity expansion and employment generation.

Technical textiles have emerged as a major focus area under the scheme, accounting for 57 per cent of the 74 selected applications, spanning 42 companies.

Shaleen Toshniwal, Chairman, Manmade and technical Textiles Export Promotion Council, said the scheme has recognised the potential of technical textiles and manmade fibre by including a range of products made out of it.

By boosting production of high-tech products, the scheme is not only drives foreign investment, but also enhances in India's position in as a competitive global textiles hub, he said. ■

# Govt. plans to establish CIBIL-style Score, Green Fund to meet Textile Sector's credit needs

The government is considering establishing a credit rating system and a common green fund to address the credit access issues of the textile sector, especially smaller units, and help meet its financing needs for sustainable production. The textiles ministry has sought suggestions from industry on ways to grade the performance of enterprises in the sector and assess their creditworthiness, officials said.

"Banks are overcautious in extending credit to the textile sector and a CIBIL scroe kind of a protocol will help them understand the sector's requirements," said an official, who did not wish to be identified. The CIBIL score, compiled by Credit Information Bureau (India) Limited, is a credit score that reflects an individual's creditworthiness, with a higher score indicating lower risk for lenders.

Such a protocol in the textile sector would take into account issues such as long payment cycles and job work requirements of the industry.

Though there are separate funds for various financing needs for sustainable production such as for energy efficiency and water management, a combined green fund would make it procedurally easier for the units to across credit and attract investments, the official said.

The measure is crucial as India is aiming at a threefold increase in textile exports to ₹9 lakh crore by 2030. India's textile sector expanded 7% last year, making the country the world's sixth largest textile exporter.

"The recognition that textiles is a high impact sector and their credit needs are a challenge, is an important initiative. We are looking at ways to ensure that the working capital needs of the textile industry are met," said Chandrima Chatterjee, secretary general, Confederation of Indian Textile Industry.

The ministry has also asked industry about the issues it faces in accessing the Credit Guarantee Fund Trust for Micro and Small Enterprises and suggested monitoring of the disbursements under the fund to understand the utilisation and make it more efficient for the textile industry.

"Discussions are also ongoing over whether credit facilitation centres can be set up in textile clusters. All these are being discussed to improve the credit risk perception of the sector," the official added. ■

# Inspite of setbacks in some pockets, cotton area may rise

The country's area under cotton has witnessed an uptick despite setbacks in Telangana and Andhra Pradesh, where a dry spell threatens to hit the first sowing.

The cotton acreage is expected to incrase by 7 per cent over 113.60 lakh hectares (lh) last year.

Though the area is trailing in States such as Telangana, the trade expects the acreage to improve in Telangana and Andhra Pradesh following an increase in the minimum support price (MSP) for the fibre crop.

In Karnataka, the area was up by about 40 per cent till June 20 at 3.35 lh, compared with 2.40 lh a year ago.

A long dry spell after early rain in the last week of May has dampened the hopes of cotton farmers in Telangana. Two-thirds of 33 districts in the States have reported deficit rainfall.

According to the India Meteorological Department, the State received 23 per cent deficient rain during the current monsoon. With the prospects of losing the first sowing looming large, the State government is taking measures to make seeds available.

**Slack Interest**

"There is likely to be an increase of 8-10 per cent in the coverage of cotton in the country this season," said Ramanuj Das Boob, Vice-President of the All-India Cotton Brokers Association and a sourcing agent in Raichur.

In Karnataka, the acreage will be more by around 10 per cent, while Telangana and Andhra Pradesh may also see improvement, he said. Also, in northern States such as Rajasthan and Punjab, the acreage is seen improving, he said.

Bhagirath Chaudhary, Director of the Jodhpur-based South Asia Biotechnology Centre, said across North India, the 2025 cotton season has been marked by luke-warm enthusiasm driven by persistent concerns over profitability, recurring pink bollworm infestations and increasing disease concerns.

**Major Blow**

Despite the Punjab government's subsidy on Bt cotton hybrid seeds, farmer response this season has remained largely indifferent, Chaudhary said.

"A major setback has been the unavailability of canal water during the crucial May sowing window, which further discouraged farmers from planting cotton. This critical lapse has turned the tide in favour of paddy, a crop perceived by farmers as more stable, remunerative, and less risky," Chaudhary said.

However, the area in Gujarat could decline by 5 per cent as the farmers in Saurashtra are shifting from cotton to groundnut.

On the other hand, soyabean farmers are switching over to cotton.

"In Maharashtra, the acreage could be plus or minus 2 per cent compared with last year and in the South, the area could rise by 15-25 per cent," said Popat. ■

# Textile sector asks for uniform GST rate for textile, apparel value chain

The textile industry is pitching for a fibre-neutral GST at 5% for entire textile and apparel value chain.

Currently, cotton-based textile sector has 5% GST, except for garments priced above ₹1,000. These garments attract 12% duty. However, in the Man Made Fibre (MMF) sector, the GST on PTA (Purified Terephthalic Acid) and MEG (Monoethylene Glycol) that are critical inputs for polyester output is 18%, MMF filament and spun yarn attract 12% duty, fabric and garments at 5% and garments and fabric above ₹1,000 a piece are at 12%.

There should be no inverted duty structure and we need a fibre-neutral rate which is the lowest in the GST slabs, said R.K. Vij, secretary general of Polyester Textiles Apparel Industry Association.

If the industry is to achieve the target of $100 billion annual exports and $250 billion domestic sales by 2030, all sectors of the textile industry should grow. For now, there has been no major expansion in the viscose sector and the cotton sector is not growing. The growth of the MMF sector is crucial and hence, the government should rationalise the GST rates for this sector.

As per K. Selvaraju, secretary general of the Southern India Mills Association, garments and fabric priced above ₹2,000 should be levied 12% duty and for the other products the rate should be 5%.

The micro, small and medium-scale enterprises are struggling when funds are blocked in tax paid for inputs. MMF fabrics and garments are the most affordable for the common man. And, hence, this sector should also be brought under uniform 5% duty.

Further, textile and apparels is the highest job-generating sector and should attract investments to create jobs. GST rate rationalisation will make investments viable, he said. ■

# Cotton area may decline as farmers eye alternative crops

India's cotton area, which saw a decline of 10 per cent during the khariff 2024 season, is likely to shrink further this year as farmers are seen moving to other alternatives like maize and groundnut. Industry stakeholders are having a mixed opinion on the upcoming 2025-26 season, for which planting has already begun in north India and parts of South India, where the monsoon has made an early onset.

"Cotton area will be down in Central India, which accounts for about 66 per cent of the area and crop in the country. However, in north and south India, it may increase. The overall cotton area in the country may come down by 7-8 per cent," Atul S Ganatra, President, Cotton Association of India (CAI), told reporter.

In Gujarat, farmers will likely shift from cotton to groundnut while in Maharashtra and Madhya Pradesh, they are shifting to maize, Ganatra said.

**Poor conditions**

"Farmers are not interested in growing cotton due to low yields and higher expenses and cost of labour. Also, farmers have other options that can fetch them better returns," Ganatra said.

Bhagirath Chaudhary, Founder-Director of the South Asia Biotechnology Centre in Jodhpur, said the cotton season had commenced on a sluggish note, marked by delayed sowing across the north growing zone. "The late release of canal water dampended the morale of cotton farmers. Currently, only 65-70 per cent of the sowing has been completed. Crop conditions remain poor, with weak plant stands attributed to extreme heat, lack of irrigation water and recurring sandstorms," Chaudhary said.

Recently, the US Department of Agriculture projected a 2 per cent decline in India's cotton production during the 2025-26 season, starting October at 24.5 million bales of 480 pounds each.

The market remains weak amid low demand and uncertain global trends. "Despite the current market conditions, sowing for the upcoming season is expected to be strong. The early arrival of the monsoon could lead to an increase in the sown area across States. Even dryland farmers are likely to take up cotton cultivation this year," said Ramanuj Das Boob, a sourcing agent in Raichur and Vice-President of the All India Cotton Brokers Association. ■

# He will talk about HtBt cotton to environment ministry: Chouhan

Union Agriculture Ministre Shivraj Singh Chouhan recently said he will raise the issue of herbicide tolerant BT cotton (HtBt) with the environment ministry as there are reports of farmers growing them illegally.

"We will also talk about HtBt cotton with the environment ministry. It is being said that seeds are coming in secretly and illegally. We will work seriously on this too," Chouhan said while addressing high-level stakeholders meeting on cotton on 11th July in Coimbatore.

Chouhan's statement came amid reports that a high-powered panel appointed by the Genetic Engineering Appraisal Committee (GEAC) has given a favourable recommendation on commercialisation of HtBt cotton after analysing three years' bio-safety data.

GEAC works under the Ministry of Environment.

Chouhan said if farmers grow that type of cotton which is beneficial to industry then they will get good rates.

Formal approvals for HtBt cotton have been pending for a long time due to strident opposition from some quarters over the indiscriminate use of controversial herbicide Glyphosate that such varieties are resistant to. An application for BG11 Round-Up Ready Flex has been pending for approval for a long time. Since 2002, no new BT technology has been introduced in the country for cotton which has also spawned a large market for illegally developed BT that is causing more harm to farmers.

The problems are not just in the production, millers and ginners who had embarked on a massive expansion drive adding new spindles almost every year are also staring at a problem as dipping domestic cotton production is pushing up reliance on imports.

India's domestic cotton production has dropped from a high of around 36 million bales in 2013-14 (October to September) to around 30 million bales in 2024-25 (October to September), a drop of almost 20 per cent. As a result of which, India has become a net importer from beign a net exporter of cotton.

Chouhan added that India's cotton per hectare yield cannot remain much below the world average if the country has no become world leader in cotton production. ■

# Value retailers outpace premium apparel chains

Value apparel retailers reported stronger revenue growth in comparison to premium retailers in FY25 — at a time when discretionary spending has been weak, especially in urban areas — data showed. While most premium retailers are hoping demand conditions will improve in FY26 on the back of fiscal and monetary policy measures, some experts say that it may show up with a lag.

Firms such as Vishal Mega Mart, V2 Retail, V-Mart Retail, and Baazar Style Retail — all value fashion retailers reported double-digit revenue growth between 17% and 62% in FY25, even as premium retailers such as Vedant Fashions and Arvind Fashions posted single-digit revenue growth (1-8%) and Aditya Birla Fashion saw a sales decline of 47.5%. Same-store sales growth (SSG) for most of these value retailers was in the region of 12-29% in FY25, while SSG for premium retailers remained largely flat.

Shoppers Stop, the country's oldest department store chain, posted a 14.3% revenue growth in FY25 versus 9.2% in FY24. This came on the back of an aggressive store rationalisation strategy aimed at improving sales and profitability, sector experts said. Trent, best-known for its Zudio value apparel chain, while posting a nearly 39% topline growth in FY25, actually saw revenue growth slide from the 50% reported in FY24, amid growing competition. A high base also contributed to Trent's FY25 sales growth rate beign lower than the previous year, sector experts said. Trent's SSG moderated to mid-single-digit levels (in FY25) from double-digit levels seen earlier.

Recently, Trent's management, led by MD P Venkatesalu, had guided for a 25% compound annual growth rate in terms of sales for the next five-to-10 years in its investor meet. The company said it was planning to grow sales through expansion of stores and tapping adjacent categories as well as improving profitability through cost control measures.

At a broader level though, analysts as well as companies point to a wider retail slowdown in large urban centres for premium retailers reporting weaker topline numbers versus value retailers in FY25. Global uncertainties and the need to keep non-essential expenditure under control have led to a slowdown in sales for premium retailers. In contrast, value retailers are seeing aspirations grow in tier 3 and tier 4 markets, contributing to their growth.

"There is a shift happening from unorganised to organised retail in small towns," Lalit Agarwal, managing director, V-Mart Retail, said. "Consumers here are finding it convenient to shop at these locations, which is driving growth," he said.

Gautam Duggad, head of research and director, institutional equities at brokerage Motilal Oswal, says that the shift from unorganised to organised retail has been driven in part by private lable penetration as well as accelerated store expansion by retail companies in small cities.

"There is a continued shift happening from unorganised to organised retail, which has increased in the last few years. At the same time, deeper private label penetration as well as rising aspiration in smaller markets is contributing to growth," he said.

Gunendra Kapur, MD & CEO, Vishal Mega Mart, says that his company's approach remains centered on "deepening market penetration" and "strengthening" its private label portfolio. Private labels contributed 73.1% to overall revenue of Vishal Mega Mart in FY25, up from 71.8% in FY24, Kapur said.

The company operates 696 stores across 458 cities in the country, with a plan to add about 90 stores in FY26, largely in smaller cities. ■

## Centre rules out Cong. allegations about a organic cotton scam

The Centre recently termed the allegations by the Congress that normal cotton was being sold as organic cotton in Madhya Pradesh as being "unfounded, unsubstantiated and misleading", saying that the Agriculture & Processed Food Products Export Development Authority takes concrete steps whenever wilful violations of organic cotton standards are found.

Congress leader Digvijaya Singh of late called for a court-monitored CBI probe into an alleged ₹2.1 lakh crore scam in the sale of normal cotton as organic cotton in Madhya Pradesh.

"It may be mentioned that in a press briefing by an opposition leader recently, unfounded, unsubstantiated and misleading aspersions are being cast against the Organic Certification programme, the National Programme of Organic Production," the Commerce and Industry Ministry said in a statement.

"Generalised allegations against a robust regulartory system of the country for a particular crop/region/group of operators only serve to undermine the credibility of legitimate regulatory institutions and the broader organic movement in India," it added.

It said that new procedures have been devised for additional checks for certification of organic cotton production. ■

# Centre approves ₹1,894 development plan for textile park in TN

In a major boost to the textile industry in Tamil Nadu, the Union Ministry of Textiles has approved a ₹1,894 crore development plan for the PM Mitra Park.

The 1,052 acre integrated mega textile park is coming up in Virudhunagar with facilities to attract technical textiles, processing and integrated units, according to a social media post by the Textiles Ministry.

Related infrastructure and facilities coming up include a 15 million litres per day common effluent treatment plant with zero liquid discharge, a 5 mld sewage treatment plant and a 10,000-bed worker accommodation.

The construction will be completed by September 2026. The park is expected to attract ₹10,000 crore of investment and generate around 1 lakh employment.

State Industries minister TRB Raja said in a social media post, "Tamil Nadu is already India's top textiles exporter, and now we are only going to get bigger and better," he said.

In March 2023, India's first PM Mega Integrated Textile Regions and Apparel (PM MITRA) park for the textile industry was announced in Virudhunagar district.

Chief Minister MK Stalin and Union Textiles Minister Piyush Goyal jointly launched the park with an MoU signed between the State and the Centre.

To promote technical textiles in Tamil Nadu, the State government in May this year announced the implementation of the Tamil Nadu Technical Textile Mission to encourage investment in this sector. A fund of ₹15 crore was provided for this initiative.

Spanning five years (2025-2030), this flagship initiative is designed to drive sustained economic growth, industrial innovation and technological advancement across the textile sector.

Thanking both the Centre and the State for the approval, A Sakthivel, Vice-Chairman, Apparel Export Promotion Council (AEPC), told reporters that the thrust areas of the MITRA Park is on technical textiles and man-made fibres. The focus so far in the State has been on cotton-based textiles, he said. ■

## J&K's handicraft sector opts for reduction in GST rate

At a traders' conclave in Srinagar recently, Union Commerce and Industry Minister Piyush Goyal said the government will consider reducing the Goods and Services Tax (GST) on various handloom and handicraft items to 5 per cent from 12 per cent to support the struggling sector.

As Jammu and Kashmir completes eight years under the GST regime, there is a growing chorus from the region's once-flourishing handicrafts industry for urgent tax relief.

Artisans and small-scale traders said the 12 per cent GST on many traditional craft products was crippling an industry already burdened by rising raw material costs, shrinking markets and the aftermath of repeated disruptions. Currently, handloom and handicraft items priced ₹1,000 or more are taxed at 12 per cent.

Ghulam Mohmmad Mir, a papier-mache artisan from Srinagar, told reporters, "Taxes like GST on handloom and handicraft items have led to reduced sales, shrunk profit margins and added to the growing disinterest among the younger generation." He added, "The governemnt has not made any serious efforts to support or revive the craft."

Tahweed Ali, owner of Shah Handicrafts, said most active artisans today are over 60 years. "You will hardly see young people taking up this work as it no longer offers a stable income or viable future," he said.

Srinagar's downtown neighbourhoods, including Zadibal, Alamgari Bazar, Kathi Maidan, Kawangar Pora, and Hassanabad, were once vibrant hubs of traditional craftsmanship. But many craftsmen said the sector had declined by 80 to 90 per cent in recent years.

In December 2024, a proposed hike in GST on Kashmiri Pashmina shawls from 12 to 28 per cent sparked protests from artisans and opposition political parties. However, Jammu and Kashmir Chief Minister Omar Abdullah, who attended the 55th GST Council meeting in Rajasthan, said the issue was not taken up for discussion. ■

# VALUE ADDITION ON BHAGALPURI TASAR SILK APPAREL BY MANJUSHA PAINTING

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**Abstract**

Clothing is known as second skin and second basic necessity of human being. Clothing is always influenced by fashion. Fashion is a product of change, a source of timing. For sustaining in the fashion world any apparel or textile product needs to be value added with different modes and this value addition increases the cost of the products in many fold. Value addition with folk art on traditional Tasar Silk gets an overwhelming response among the fashion customer due to its earthy appeal. In this present study an attempt has been made to value addition on Bhagalpuri Tasar Silk Apparel with Manjusha painting thus to revive the dying art form and Bhagalpuri Tasar Silk by making it popular to people.

**Key word :** Manjusha painting, Folk art, Revive, apparel designing, value addition.

**About Manjusha Painting**

Manjusha painting is a forgotten and dying art form of Bhagalpur region of Bihar. It is also know as 'Angika art' traces its origin to Bihula-Bishahari or Mansha folk tale, popular in Anga Pradesh (Bhagalpur). Snake is the prominent motif of this painting. Manjusha art or Manjusha Kala is often referred to as Snake Painting by foreigners.

Manjusha are temple-shaped boxes with eight pillar made of bamboo, jute, straw and paper depicts sketches of different characters apart from those of Gods and Goddesses there by giving a vivid description of the entire mythology attached to 'Bishahari Puja'. It is also a pictorial reflection of folk lore, poetry and the culture consciousness of Anga region.

At first W.G. archer an ICS officer worked in different parts of Bihar between 1931 and 1948 discovered the art in 1941. He found that in Anga region, the gardener caste (Mali) used to paint the Manjusha panting. The painting are drawn on the occasion of 'Bishahari Puja' celebrated usually in the month of August to propitiate the snake God. The painting reflects the creativeness and industriousness of the painter. As Bihula's boat was decorated by a character called 'Lahsan Mali' this art has been confined to the Mali caste.

**Special features of Manjusha painting**

The style of painting is unique. In this style of painting, human beings are depicted in the form of English letter 'X' with limbs drawn with linear and uniform bold lines. Other features include portraying Bishahari along with snake. According to myth, Maina, Bhawani, Devi, Padma and Jaya-the five sisters were the 'Manas putriyan of lord Shiva. They were also called as 'Bishahari'. The main characters in the painting are projected sans ear with big eyes. Breast of female character are drawn with a circular line. The male characters are drawn with moustache and 'Shikha' on the head. Necks of male characters are wider than female characters. Borders are drawn with bold colour and design.

Exhibition on Manjusha Painting

Training on Manjusha Painting

**Colours and Characters**

According to legendary artist of Manjusha painting Late Charkravarti Devi three colours red, Green and Yellow are primarily used in this

painting. Main characters of this painting are 'Maniyar Nag' Mansha Bishahari, Bihula, Bala Lakhinder, Chando Saudagar, Tunni rakshasi and Chando's wife Sonika. Other motifs figuring prominently in these paintings are drawn from nature, be it the sun, the moon, bird, fish sandal or bamboo, horse and elephant each with its own significance in the folklore. Colours are filled without any shading work and lines are drawn bold.

**Objectives**

A project had been taken up in the department of Textile and Apparel Designing, College of Community Science, RPCAU, Pusa with the aim to popularize Bhagalpuri Tasar silk by reviving the dying art form 'Manjusha painting' through apparel designing with the following objectives.

1. To design and construct Tasar Silk apparel with Manjusha painting.
2. To put up exhibition of the product to know the preference of the respondents through interview.
3. To organize training programme for the local women to popularize the painting.
4. Statistical analysis of the collected data.

**Methodology**

As per objectives of the project, the following experimental works conducted. Twelve silk apparel were designed under three categories.

1. **Made ups:** Under this category two shawls and two dupattas were designed on Bhagalpuri Tasar Silk.
2. **Women's wear:** Two Kameez and two Blouses were designed, constructed and value added with Manjusha Painting.
3. **Men's wear:** Two Tasar Silk Kurtas and two jackets were value added with Manjusha painting.

For each category five designs were developed on paper. Out of five designs best two designs were selected for painting work on silk apparel by different colour combination other than traditional colour combination to make it more attractive. After completing the designing and finishing work the apparel were exhibited in the department of Textile and Apparel designing to collect the needed information regarding preferences of Manjusha painting on apparel. One structured interview schedule was prepared for this purpose, and data were collected from randomly selected respondents comprising twenty five under graduate and post graduate students of College of community Science, RPCAU, Pusa because young generations are the fashion trend setter. Data were analyzed by frequencies and percentage.

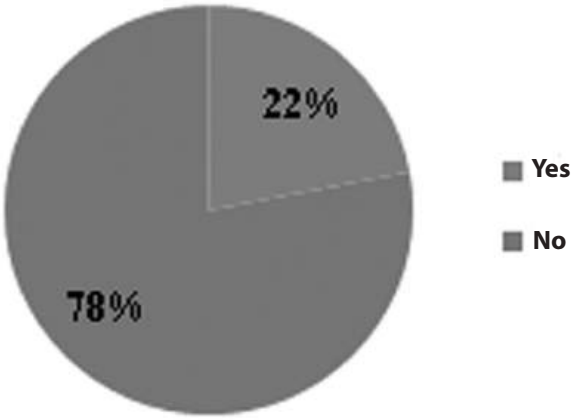
Some articles were displayed in Kisan-Mela for mass awareness programme. One "On Campus" three days skill training programme was also organized for ten participants in the department to popularize the painting.

Cost estimation of the entire product was done.

**Results and Discussion**

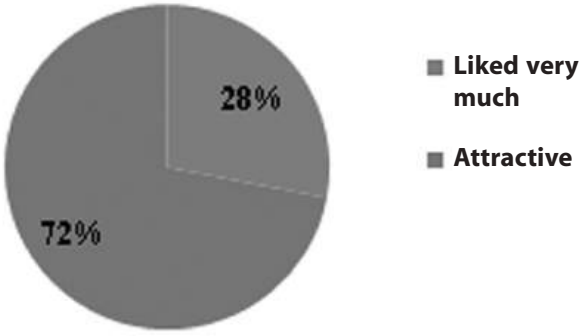
Fig. 1 revealed that 78% respondents have not seen the Manjusha painting on apparel that indicates the painting was not practiced by the designers on apparel till now though 22% respondents informed they have seen the painting in other form.

Fig. 1 : Seen Manjusha Painting before




An appraisal of Fig. 2 reveals that 72% respondents felt that the designs are quite attractive and 28% respondents were overwhelmed and liked it very much as new fashion trend.

Fig. 2 : Liking of Manjusha Painting on Apparel




Choice of colour combination of the painting by the respondents depicted in the Fig. 3. It was

# VALUE ADDITION IN BHAGALPUR TASAR SILK APPAREL BY MANJUSHA PAINTING

evident that 56% respondents found the colour combination was very nice, 24% respondents felt that colour combinations were nice and 22% respondents thought it as appropriate (Fig. 3) and snake motif was also liked by 56% respondents. More over 32% respondents liked floral border and 12% of them had choice for human figure (Fig. 4). Kurta was liked by most of the respondents and followed by Kameez, Shawl, Jacket, Blouse and Dupatta (Fig. 5) and they visualized bright future of Manjusha Painting on apparel. Dupatta was liked by only 9% respondents may be due to its bright yellow colour.

Fig. 3 : Colour Combination

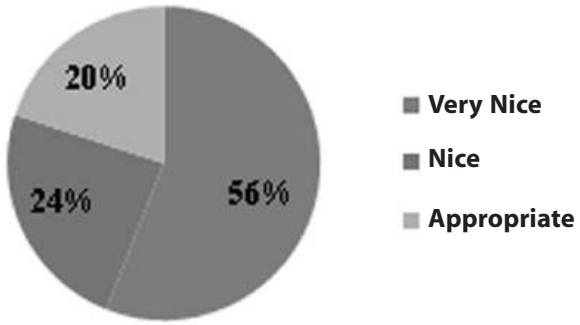



Fig. 4 : Liking of Motif

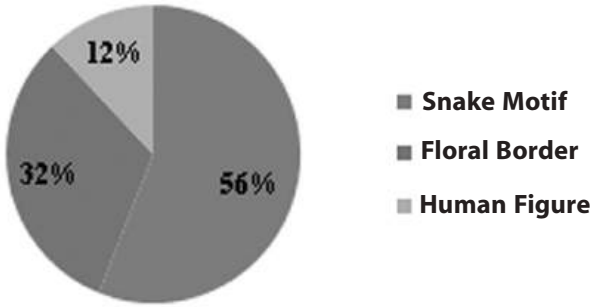
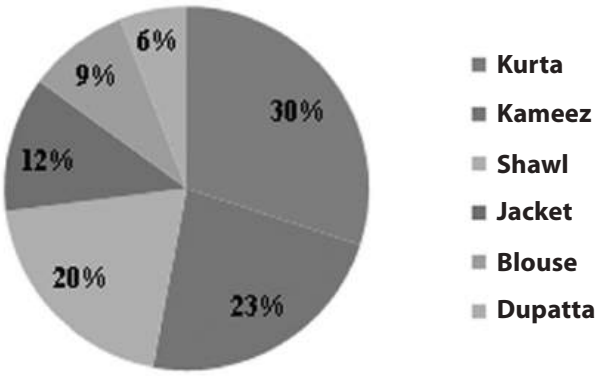
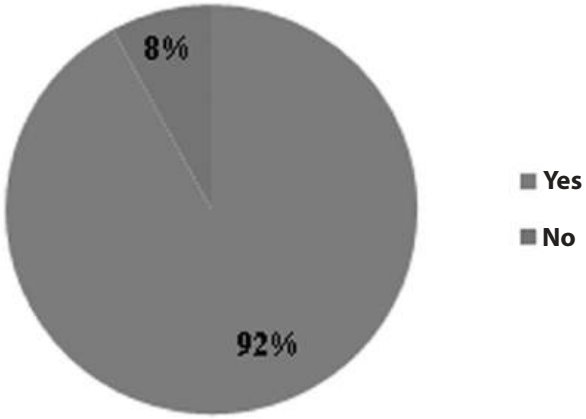



Fig. 5 Distribution of most Attractive Apparel




The result of the study was very encouraging (Fig. 6) as 92% of the respondents wanted to have apparel of Manjusha painting in their wardrobe and willing to pay 60% - 75% profit. They were very enthusiastic and wanted to learn the painting.

Fig. 6 : Wanto to have Apparel of Manjusha Painting




**Cost Estimation of Apparel (Single Unit)**

| Item | Kurta | | | Shawl | | | Jacket | | | Blouse | | | Kameez | | | Dupatta | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Silk | Length (m) | Price (Rs/m) | Cost (Rs) | Length (m) | Price (Rs/m) | Cost (Rs) | Length (m) | Price (Rs/m) | Cost (Rs) | Length (m) | Price (Rs/m) | Cost (Rs) | Length (m) | Price (Rs/m) | Cost (Rs) | Length (m) | Price (Rs/m) | Cost (Rs) |
| | 2.5 | 400.00 | 1000.00 | 2 | 500.00 | 1000.00 | 2 | 500.00 | 1000.00 | 80cm | 400.00 | 320.00 | 2 | 400.00 | 800.00 | 2.5 | 300.00 | 750.00 |
| Paint & Brush | - | - | 100.00 | - | - | 150.00 | - | - | 100.00 | - | - | 50.00 | - | - | 100.00 | - | - | 100.00 |
| Stitching charge | - | - | 400.00 | - | - | - | - | - | 750.00 | - | - | 250.00 | - | - | 300.00 | - | - | - |
| Painting charge | - | - | 300.00 | - | - | 500.00 | - | - | 300.00 | - | - | 200.00 | - | - | 300.00 | - | - | 150.00 |
| Other accessories if any | - | - | - | - | - | - | - | - | - | - | - | 10.00 | - | - | 10.00 | - | - | - |
| Cost of production | - | - | 1800.00 | - | - | 1650.00 | - | - | 2150.00 | - | - | 830.00 | - | - | 1510.00 | - | - | 1000.00 |
| Profit (50%) | - | - | 900.00 | - | - | 825.00 | - | - | 1075.00 | - | - | 415.00 | - | - | 755.00 | - | - | 500.00 |
| Total Cost | - | - | 2700.00 | - | - | 2475.00 | - | - | 3225.00 | - | - | 1245.00 | - | - | 2265.00 | - | - | 1500.00 |

# VALUE ADDITION IN BHAGALPUR TASAR SILK APPAREL BY MANJUSHA PAINTING

## Cost estimation

Results (Table 1) showed that cost of production of Jacket is highest followed by silk kurta and shawl. Cost of Jacket is high due to its tailoring cost and quality of silk. In mass production cost of each item will come down. 50% profit will be added for value addition on the apparel. Though fashion conscious people who love traditional Bhagalpuri Tasar Silk and hand painted folk art on apparel will never mind to pay more for Manjusha painting on apparel to adorn themselves.

## Conclusion

Folk art plays crucial role in economical infrastructure of any society. As it is the age of RMG sector (Ready Made Garment) Rural women with collaboration of fashion designer can earn a good amount of profit taking up this hand painting apparel designing work as an earning source because more than 90% respondent wanted to have this painting on their apparel.

So the market can be created of this dying art of Anga Pradesh (Bhagalpur) and Tasar Silk of Bhagalpur by reviving this painting specially on Tasar Silk apparel for its rich and smart look which is unique because fashion always needs change.

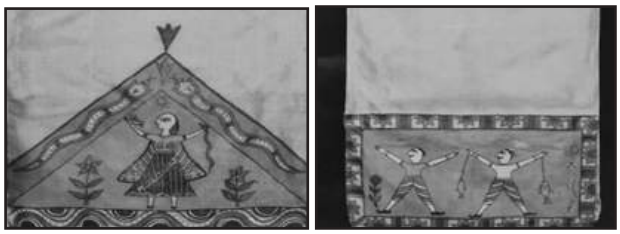
## Recommendation

Currently people are not aware of its significance. They do not realize that the art form is slowly becoming extinct. So, there is a need to establish that the art form can be means of livelihood. Though it may not become primary income, the art form to be revived on apparel and tradition continued by the future generations.

- Create awareness among the fashion conscious younger generation.
- Show a comparison of Madhubani painting and show that this art form too can reach the market like Madhubani painting.

Manjusha Painting on Silk Apparel

Jacket



Dupatta

Shawl

Kurta

Blouse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# ELECTRO SPINNING AND APPLICATIONS OF ELECTRO-SPUN NANO FIBRE — A REVIEW

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**Abstract**

There are many methods available to produce nanofibres. But electro spinning technique is the most user friendly process. Various materials such as ceramic, polymer, composites and metal nanofibres have been fabricated by using electrospinning processes. However, the nano scale fibre formation technique makes it unique among all nano fibre manufacturing techniques. Nanoscale fibers are an attractive material for their huge surface area-to-volume ratio which ultimately improves the performance of products prepared from nanofibres. These fibers are widely used in industry such as filtration, composite materials, medical, membrane, etc. so in this research paper, an attempt has been made to understand the fundamentals of electro spinning techniques and applications of electro spun fibres in various emerging areas like filtration, medical and composite materials etc.

**Keywords:** Electro spinning, nano fibre, filtration, composite material, medical, membrane.

## 1. Introduction

Electro spinning of nano fibre is considered one of the most promising technologies for the 21st century. Also this technique is the economical impact from new and optimized products. On the other hand one expects a strong contribution of electro spinning in decreasing the uses of toxic chemicals and consumption of natural polymers. Electro spinning has the potential to improve the effectiveness of a number of existing consumer and industrial products and is expected to have a substantial impact on the development of new fibrous assembly for diversified applications.

The "nano" prefix normally denotes the diameter of materials is in the range of 1-100 nanometers. A nanometer (nm) is defined as billionth of a meter, which is about 1/80000 of the diameter of a human hair, or 10 times the diameter of a hydrogen atom.

Research and development in nanotechnology is directed toward understanding and creating improved materials, devices, and systems that exploit these new properties. At nanoscale, the physical, chemical, and biological properties of materials differ in fundamental and valuable ways from the properties of individual atoms and molecules as well as bulk matter. For instance, ceramics, which normally are brittle, can easily be made deformable if the grain size is reduced to the nanometer range and thin films or fibres are produced. Another example is the fact that for nano-scaled particles the colour of the material becomes dependent on the particle size instead of its intrinsic properties, e.g. gold having a particle size of 1 nm shows a red colour. The ability to customize physical properties of materials gives nanotechnology a potential impact across a wide variety of disciplines.

### 1.1 Electro-spinning techniques in textiles

The wave of nanotechnology has shown a huge potential in the textile and clothing industry which is normally very traditional. The future success of nanotechnology in textile applications lies in areas where new functionalities are combined into durable, multifunctional textile systems without compromising the inherent favourable textile properties, including processability, flexibility, washability and softness.

A whole variety of novel nanotech textiles are already on the market at this moment. Examples of industries where nanotech enhanced textiles are already seeing some applications include skincare, space technology and clothing as well as materials technology for better protection in extreme environments. The use of nanotechnology allows textiles to become multifunctional and produce fabrics with special functions, including antibacterial, UV protection, easy-clean, water- and stain repellent and anti-odour. In many cases also smaller amounts of the additive are required, saving on resources.

One of the applications of nanotechnology in the textile industry is in polymeric materials for producing conventional fibres such as polyester, polyamide and polypropylene in nanoscale. Nanofibres have good properties such as high surface area, a small fibre diameter, good filtration properties and high permeability. Common production methods are electrospinning or bicomponent extrusion (islands in the sea technique).

There is a significant potential for profitable applications of nanotechnology in textiles. Several applications of nanotechnology can be extended to attain the performance enhancement

of textile manufacturing machines & processes. Nanotechnology overcomes the limitations of applying conventional methods to impart certain properties to textile materials. There is no doubt that in the next few years nanotechnology will penetrate into every area of the textile industry. However, there are still a lot of items to be taken in consideration before industrial commercialization of the nano-products. Generally, the state of research into the health and environmental issues can be summed up as suggesting that the current results of studies on the impact are limited. In future, interdisciplinary research collaborations will lead to significant advancements in the desirable attributes of textile applications.

### 1.2 Fundamentals of Electro spinning

Electrospinning is a modest and versatile technique that depends on the electrostatic repulsion between surface charges to continuously draw ultrathin nanofibers from a viscoelastic fluid [1]. This technique has been developed and rediscovered by various researchers [2-9] and now this technique is widely used to produce fibres with nano scale diameters ,also it has the advantage of being simple and useful compared with traditional fiber forming procedures. Nanofibres and nano wires having the potential to significantly improve existing technology with their huge surface area to volume ratio about a thousand times higher than that of a human hair and find application in novel areas [10]electrospinning is perhaps the most versatile process. Materials such as polymer, composites, ceramic and metal nanofibres have been fabricated using electrospinning directly or through post-spinning processes. However, what makes electrospinning different from other nanofibre fabrication processes is its ability to form various fibre assemblies. This will certainly enhance the performance of products made from nanofibres and allow application specific modifications. It is therefore vital for us to understand the various parameters and processes that allow us to fabricate the desired fibre assemblies. Fibre assemblies that can be fabricated include nonwoven fibre mesh, aligned fibre mesh, patterned fibre mesh, random three-dimensional structures and sub-micron spring and convoluted fibres. Nevertheless, more studies are required to understand and precisely control the actual mechanics in the formation of various electrospun fibrous assemblies.","author":[{"dropping-particle":"","family":"Teo","given":"W. E.","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Ramakrishna","given":"S.","non-dropping-particle":"","parse-names":false,"suffix":""}],"container-title":"Nanotechnology","id":"ITEM-1","issue":"14","issued":{"date-parts":[["2006"]]},"title":"A review on electrospinning design and nanofibre assemblies","type":"article-journal","volume":"17"},"uris":["http://www.mendeley.com/documents/?uuid=43d14060-17b1-4ef5-8048-ad6ac350c536"]}],"mendeley":{"formattedCitation":"[10]","manualFormatting":"[10]","plainTextFormattedCitation":"[10]","previouslyFormattedCitation":"[10]"},"properties":{"noteIndex":0},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}.

This process of electrospinning has gained much attention in the last decade researchers started to realize the huge potential of electrospinning in the process of nanofibre production. Although there are various methods available to fabricate nanofibres but among all of them electrospinning is best in terms of its versatility, flexibility and easiness of fibre production. [11-14]

Electrospun fibers have been successfully applied in various fields, such as air and water filtration, drug delivery, tissue engineering scaffolds, biomedical, protective clothing, filtration, biomedical, pharmaceutical, photonics or electronics, healthcare, biotechnology, environmental engineering and defense and security [15-19]. Overall, this technology is relatively simplerobust and robust to produce nanofibers from extensive variety of polymers.

Over the years, for numerous applications more than 200 [20, 25] polymers have been electrospun and the number is still increasing repeatedly with time. With these in outlooks, we aim to present an overview of the working principle of electrospinning technique with its promising potential applications in various areasthis review.

### 1.3 Working Principles of Electro spinning

Fibers with diameters from micrometer to nanometerscale range to can be produces by electro spinning under the electic field. Typical electro spinning setup consists of three major components as shown in figure 1. A high voltage power supply (usually in the kV range), a syringe with a metallic

needle and a grounded collector (solid substrate or liquid media) [21,30,31]. In a usual electrospinning process, on solutions or melts high voltage is applied .Subsequently, a pendant droplet starts to form when the electrostatic repulsion starts to overcome the surface tension of the fluid.At the tip of the needle the pendant droplet will deform into a conical droplet form known as the Taylor cone. [32,33].As thesurface tension of the conical droplet overcome by electrostatic force the, a fine charged jet of polymer solution is driven out from the tip of the needle. The interaction between the electric field and the surface tension of the fluid stretches the jet stream and makes it undergo a whipping motion leading to the evaporation of the solvent. Thiscausesthe Jet stream tobecontinuouslydrawn-out as a long and thin filament and then this filament solidifies and is ultimately deposited on a grounded collector, causingthe formation of a uniform fiber.[1]

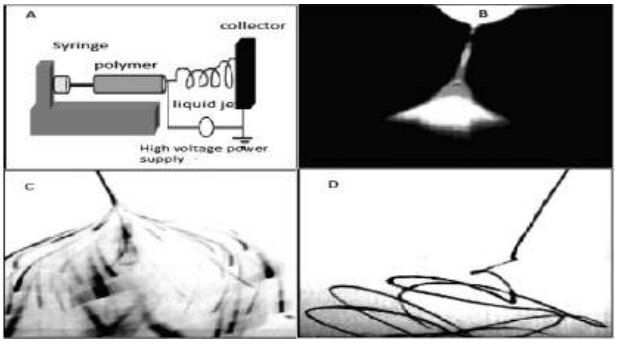


**Fig1.** (A) Schematic diagram of electrospinning assembly, (B) a digital video camera using the interference color technique, (C) a standard camera exposure time of 33 ms, and (D) a high-speed camera at an exposure time of 0.1 ms. Adapted with permission from (B) ref [34] and (C, D) ref [33].

## 2. Applications of Electrospun Fibre

Electrospun fibres have received much attention due to its unique characteristics and diversified applications in the area of technical textiles such as filtration, medicals etc. The potential products of nano fiber are of interest in applications such as semi-permeable membranes, filters, protective clothing, and tissue engineering. Some of the more dynamic areas of application are also discussed in this paper. A schematic in figure 2 is interpolated to explore the applications of electrospun nano fibres.

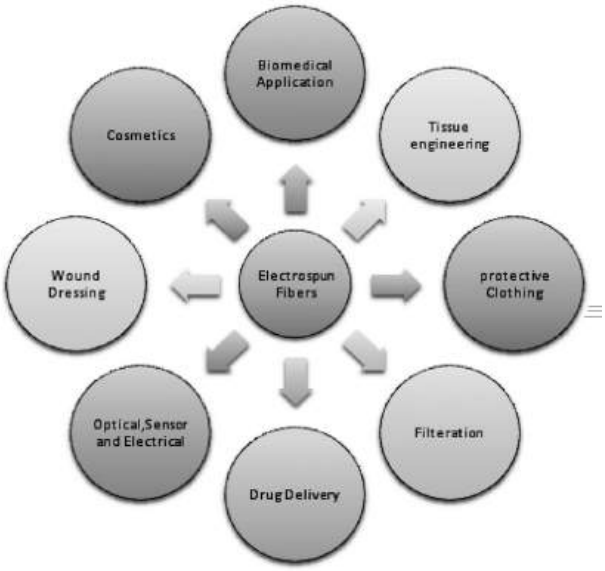


**Fig 2.** Applications of electrospun fibers in various sectors sectors

### 2.1 Filtration application

Filtration is one of the most applicable areas in engineering. Membranes composed of electro spun fibres have a great potential in membrane filtration technology due to its attractive characteristics, such as a highly porous structure, pore sizes in submicron, and a large surface area to volume ratio due to which specific properties become high. These characteristics permit the filter media to be extremely permeable and become great filtration efficiency. [35]

Filtration efficiency, which is associated with the fiber fineness, it is one of the most important factor for the filter performance. Nano-fibers are used for more mainstream application in the separation technology as a potential membrane for pre-treatment of water prior to reverse osmosis or as pre-filters to minimize fouling and contamination prior to ultra- or nano-filtration.Various researchers have developed many electrospun products to be used for filtration applications. One group of researchers has developed electrospun membranes to separate polystyrene particles of 1, 5 and 10 μm and observed that electrospun membranes were effective in rejecting more than 90% of the micro-particles from solution.[36]

Metal and metal oxide nano particles to be released to natural waters creating a potential risk to human health electrospun carbon nano fiber Membranes Fabricated membranes could efficiently

reject nano particles of different types (Au, Ag, and TiO2) and sie (from 10 to 100nm in diameter) from aqueous solutions [37]. A mechanical robust and thermal tolerant nano fibrous membrane with high hydrophilicity was effectively prepared by one step approach based on PMIA solution via electro-spinning [38]. A ceramic separation membrane with nanoporous filters was prepared by Xue Bin Keet. al by using larger titanate and smaller boehmite (AlOOH) nano fibers.[39] A new type of free-standing filtration membrane made of carbonaceous nanofibers (CNFs), which has a very narrow pore size distribution and can effectively filter out nanometer-scale particles rapidly from solution [40].

In many of the industry, electrospun nano fibers membranes are studied for effective air filtration. Air filtration using electrospun fibers that seize volatile organic gases, bacterium, fine particles, is a relatively novel, but very promising, technique. electrospun fibers are becoming a promising versatile platform for air filtration applications owing to their unique nano scale porous structure, very high specific surface areas, ultrafine diameters, as well as their ability to integratedactive chemistry on a nano scale surface [41].

### 2.2 Cosmetics

The current skin care masks use as topical creams, ointments or lotions may be in form of liquid sprays or dust which may be more likely than fibrous materials to go through into sensitive areas of the body such as the nose and eyes area where the skin mask is being applied to the face. Electrospun polymer nanofibers have been tried to be used in the treatment of skin. For skin healing, skin cleansing, or other therapeutically or medical properties with or without adding various additivesas a cosmetic skin care mask .[42]

In cosmetics, the electro spinning is used to produce facial masks or cosmetic patches, which comprise active combinations of various compounds for skin treatment. Moreover, electrospun fibers can increase a stability of herbal extracts. Furthermore, the production of the electrospun fibers leads to industrial manufacturing by using electro spinning technology. Therefore, the electro spinning technology is an inventive platform for pharmaceutical and cosmetic area, and electrospun fibers will be used as novel commercial dosage form in the near future [43].

### 2.3 Biomedical application

From a biological perspective, almost all of the human tissues and organs are deposited in nano fibrous forms or structures. Examples include: bone, dentin, collagen, cartilage, and skin. Current research in electrospun polymer nanofibers has focused one of their major applications on bioengineering. Electrospun nano fibers prepared from polymers are used to releasevarious antibiotic and proteins .anticancer agents, DNA, RNA, and growth factors. We can simply find their promising potential in various biomedical areas.[44]

#### 2.3.1 Drug delivery

Topical drug delivery opens up a number of opportunities with regard to efficient drug therapy for skin and wound-related conditions.[45]

Controlled drug release at a defined rate over a definite period of time is possible with biocompatible delivery matrices of biodegradable polymers are therefore usually used as drug delivery system.

Nano fiber mats have been applied as drug carriers in the drug delivery system because of their high functional characteristics and because the drug delivery system relies on the principle that rate of dissolution a particulate drug rises with increasing surface area of both the drug and the corresponding carrier and electro spinning provides a great platform for increasing surface area. Emulsion-electro spinning is used to prepare Doxorubicin hydrochloride (Dox)a water-soluble anticancer agent based nano fibers. Fig 3 shows morphology of fibres prepared by electro spinning.[46]

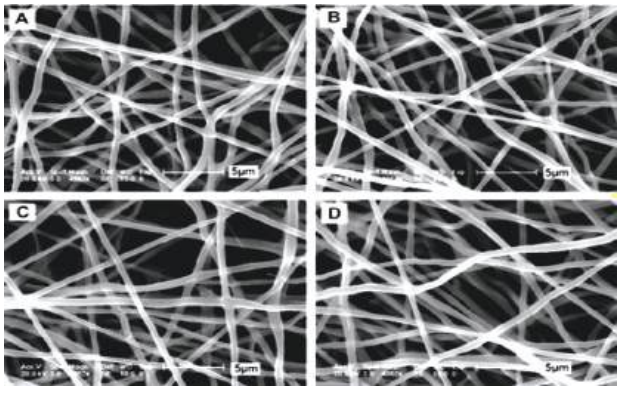


Fig 3: FESEM photographs of PEG–PLA fibers at different position of microscope

Piraset al. developed the multifunctional e-spun bio erodible nano materials for applications

in regenerative medicine by using human serum albumin (HSA) as the biopharmaceutical model protein and diclofenac sodium (DS) as a conventional hydrophobic drug model and observed that the introduction of protein molecules in the polymeric fibrous structure, would affect release and potency of the main drug [47].

Stack et al. reviewed various release mechanisms of different drugs and highlighting the effectiveness of such drug eluting fibrous matrices for rejuvenation of various tissues, such as, vascular, cardiac, neural, skin, and bone.[48]

### 2.3.2. Tissue engineering

For the treatment of tissues or organs failure in a human body, one of the challengesis in the field of tissue engineering or biomaterials. It includes the design of 3d scaffolds to maintain cellular in-growth. Different natural and synthetic polymers have been used for electro spinning fibers, such as PCL, collagen, and gelatin, and these electrospun fibers efficiently mimic the ECM in morphology.

#### 2.3.2.1 Vascular tissue engineering applications

Tissue engineering of small-diameter blood vessels is quiet challenging because of restenosis and burst. Because of thrombosis and low long-term potency electro spinning offers the prospect of construction of tubular scaffolds by rotational and translational motion. In these applications, electro spinning natural polymers (e.g., collagen and elastin) blended with synthetic polymers delivers additional mechanical properties while maintaining a great level of bioactivity. Recent research mainly focuses on the surface modification of electrospun nano fibers to increase the endothelialization process via component release.

Zhang et al. developed coaxial electro spinning techniques to incorporate VEGF and PDGF, which adjust the proliferation of vascular endothelial cells (VECs) and vascular smooth muscle cells (VSMCs). Chitosan hydrogel and PEG-b-P(LLA-co-CL) (PELCL) were used to electro spin the inner layer and for loading VEGF, and a methoxy-PEG-b-PLGA (PELGA) emulsion and PELCL were used for the outer layer and for loading PDGF.[49]

In another study, Zhou et al. (2016) developed an efficient delivery system composed of electrospun fibrous membranes with REDV (Arg-Glu-Asp-Val) peptide, modified trimethyl chitosan, which allowed for the intracellular delivery of micro RNA (miRNA)-126 to VECs in the local specific vascular environment. MiRNA-126 regulates gene expression in VECs locally for cardiovascular disease treatment. Specifically, Zhou et al. built a bilayer vascular scaffold through emulsion electro spinning, in which the inner layer was PELCL loaded with complexes of miRNA-126 in REDV peptide-modified trimethyl chitosan-g-PEG, and the outer layer comprised PCL and gelatin to lend mechanical stability. This scaffold exhibited a sustained release profile of miRNA for 56 days, with significant down regulation of SPRED-1 gene expression in VECs detected on day 3 and accelerated VEC proliferation observed in the first 9 days. Overall, Zhou et al. demonstrated the potential of this approach as a new and more effective system for local delivery of miRNAs to facilitate blood vessel regeneration[50].

#### 2.3.2.2 Neural tissue engineering

Intrinsic healing of nerve injuries is nearly always partial, causing poor recovery of function. Thus, several types of artificial nerve guidance conduits have been observed for nerve regeneration in recent years. The key point of neural tissue engineering is to enable axon and neuritis out growth and linkage to neighboring cells to bridge the gap and to prevent cell migration either into or out of the graft. Additionally, substrate topographic and trophic information is also necessary for guidance of the cells, since these affect growth, survival, and differentiation. Among the various available methods for the fabrication of nerve conduits, electro spinning has great potential due to its unique 3D assembly that can be prepared from the micro- to nano sized fibers with precise properties to help in cell differentiation and neuritis outgrowth Modification of electrospun fibrous matrices for drugrelease purposes has also been studied. Again Wittmer et al. [51] selected silk for their study due to its biocompatibility and its capability to be electrospun for the formation of aligned biofunctional nano fibers. The addition of brain-derived neuro trophic factor (BDNF), ciliary neuro trophic factor (CNTF) or both to the electrospun fibers enables enhanced function without impact to the structure or the surface morphology.

#### 2.3.2.3 Skin tissue engineering

The skin is the largest organ in vertebrates and plays a crucial role in many purposes, such as sensory of external stimuli, protection against external injury and self-healing. Researchers

developed to generate a chitosan / polycaprolactone (CS/PCL) non- woven mat. combining an electro spinning technique and a modified drop-casting method with great anti-bacterial, anti-adhesive, and anti-inflammatory abilities[52]. Another group of researchers has developed silk mats, made of electro spun nano scale silk fibers containing epidermal growth factor (EGF), for the promotion of wound healing processes.[53]

#### 2.3.2.4 Cartilage tissue engineering

Cartilage tissue shows poor self-repair ability due to its vascularity and the low division rate of its comprising cells, chondrocytes. The healing rate of cartilage in the human body is also relatively slow due to the lack of collagen production.In the field of cartilage tissue engineering, stem cells were traditionally utilized to produce cartilage tissue by mimicking the complex intricacies of the ECM, including 3D configurations and aligned fibrous structures. In one study, fetal bovine serum-loaded liposomes were immobilized onto cross linked poly(2-hydroxyethyl methacrylate) micro fibers Rampichova et al.[54] This system enhanced both adhesion and proliferation of chondrocytes, showing its potential in cartilage tissue engineering.

#### 2.3.2.5 Bone tissue engineering

To mimic the ECM of bone tissue, strategies for constructing drug-loaded composite nano fibrous scaffolds have been developed in many studies. These strategies include the integration of calcium phosphate minerals and bioactive molecules as well as the implementation of highly ordered fiber topography for the regulation of bone stem cells. Recent advancements have led to the development of electro spun fibers with encapsulated drugs and growth factors.

Yan Su et al. [55] have developed PLLACL/ collagen based nanofibers encapsulating two drugs and/or proteins have great potential in bone tissue engineering.

### 2.3.3 Wound dressing

Polymer nano fibers made through electro spinning can also be used for the treatment of wounds or burns of a human skin, as well as designed for hemostatic devices with certain unique features. With the help of electric field nano fibers has been developed by electro spinning with huge porosity, excellent humidity absorption, a better oxygen exchange rate and some antibacterial activities these fine fibers of bio-degradable polymers can be directly sprayed or spun on the injured location of skin to form a fibrous mat dressing materials. Various researches has developed various products by using electro spinning. Wound membranes based on natural polymers such as of polyvinyl alcohol and recombinant spider silk protein (pNSR16) was prepared by electro spinning by Zhao et al.[56]. Fibrous wound dressing polymeric patches are also used to produce by electro spinning by using artifical polymer that can release the antibiotic drug amoxicillin in an orderly manner for e.g. by using Poly(D,L-lactide-co-glycolide) acid (PLGA) fibrous dressings with entrapped amoxicillin. [57]. Moreover, the employment of natural polymers, although challenging can combine the biological properties of these materials with nano structural architecture, resembling the extracellular matrix and there for stimulating cell migration and proliferation, accelerating wound closure, controlling the inflammatory response, and in some cases, preventing biofilm formation [58].

## 3. Protective clothing application

In military the protective clothingis vastly used in orderto increase the survivability, sustainability, and combat efficiency of the individual soldier system against extreme weather conditions, ballistics etc. Current protective clothing containing charcoal absorbents has its limitations in terms of water permeability, extra weight-imposed to the article of clothing. For Protective clothing a breathable and light weight fabric is desirable which is permeable to both air and water vapor, insoluble in all solvents and highly reactive with deadly chemical agents and nerve gases.

## 4. Optical Sensor and Electrical Applications

Recently, new nano structured materials with extremely high specific surface area have been developed by using nanotechnology. A good alternative to fabricate materials with a high specific surface area is the electro spinning method. By means of this technique, continuous polymeric nanofibers can be fabricated by applying a high voltage field to a polymeric solution [62]. Typical applications include pressure sensing, gas sensing, photoelectric sensing, and temperature sensing. In addition, nano-self powered systems have been mentioned to emphasize the good performance of smart nano systems that do not require external power. In addition, we have summarized some existing methods and suggestions for increasing the specific surface area and presented constructive

ideas for the future development of these devices [63]. Figure 4 gives an insight idea regarding formation of sensing material and its design.

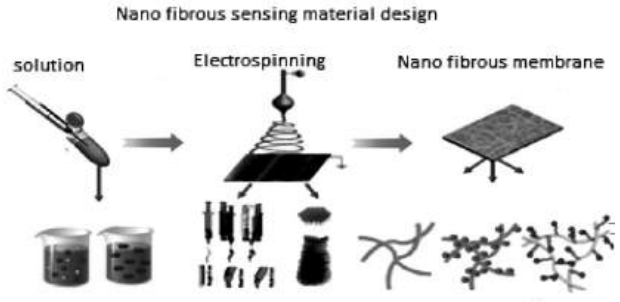


**Fig 4.**Schematic illustration of the measures to provide NMs with sensing properties throughout the electro spinning process [64].

## 5. Conclusion

Electrospinning is a simple method to produce nanoscale fibers both in laboratory and industrially. Because of its wide application such as medicine, filtration, textile etc. this technique has become one of the most acceptable methods for producing nanofibers. In the last decade the number of researches about this method and its applications has increased and this demonstrates the importance of electro spinning.

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# Textiles may face $5-bn hit as new US orders dry up

A 50% additional tariff on exports to the US market may cause a $5-billion hit to India's textile and apparel exports on an annual basis, industry sources said. That means exports of these items to the American market will reduce by a half if these levels of tariffs persist. The additional tariff will apply over and above the most favoured nation (MFN) rates, and takes the applied rate to, say 60.3%, in the case of woven apparel.

In FY25, India's exports of textiles, made-ups, knitted and woven garments to the US markets stood at about $10 billion.

"At 50% (extra) tariff, we clearly see about $5 billion worth of business moving out of India," Sudhir Sekhri, chairman of the Apparel Export Promotion Council (AEPC), said.

Delays in response and order cancellations from US buyers are threatening to wipe out substantial business for the units in the sector during the peak spring-summer demand season.

The move has eroded India's competitiveness against key rivals like Bangladesh, Vietnam and Sri Lanka, which face only a 20% tariff. "Even the 25% tariff was devastating, and this additional 25% will reall break our back," Sekhri said.

While the 50% tariff is not yet final, uncertainty is already pushing US buyers to look for alternative sourcing destinations. "Buyers have already started walking away in the last two days. They've cancelled fresh orders and are even asking to put existing ones on hold," Sekhri told a TV channel, adding that many are shifting back to China.

The US is the single-largest market for India's textile and apparel exporters, which stood at $36.61 billion in FY25. Of this, apparel exports alone were valued at $16 billion, with $5.2 billion going to the US and $7.8 billion to Europe; the rest is exported to markets such as the UAE and Africa.

The tariff shock comes as a dampener during the peak export season. Overseas buyers typically place orders during August-September, with deliveries beginning from December for the spring-summer 2026 cycle. "It's an unexpected hike and it will definitely affect us," said KM Subramanian, president of the Tiruppur Exporters' Association (TEA). Tamil Nadu accounts for the largest share of the country's textile and apparel exports, with Tiruppur alone contributing $4.69 billion (₹40,000 crore) in FY25. About 30% of Tiruppur's exports are US-bond.

"10-15% of that business will surely be affected," Subramanian said, adding that some committed buyers may continue sourcing from India despite cost disparities.

India's apparel exports to the US primarily include cotton T-shirts, knitwear, innerwear, activewear, and baby garments. Subramanian said high-value garments such as performance activewear, embellished or branded garments, and winter-wear may not be affected. However, low-value items like basic cotton T-shirts, budget inner-wear, and low-cost kidswear are likely to take the biggest hit due to their price sensitivity. ■

# SELF-MOTIVATION CHALLENGE IN ONLINE LEARNING IN FASHION EDUCATION

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Internet learning can be broken down into two main areas: content and guidelines. The content of online courses is crucial and should be engaging, using technology such as audio, video, animation, and simulation. The content should also be adaptable and tailored to the student's needs to help them understand the material and move on to new topics. Additionally, guidelines for online learning should be provided through web-based communication such as video conferencing or email and should be flexible to the teaching method, cooperation rules, and the availability of tools based on the institution's approach. The instructions should also be available from any location.

**Online Learning during the Covid-19 Pandemic**

The spread of COVID-19 has led to the cancellation of in-person classes and the shift towards remote learning through digital platforms. A report by the United Nations Sustainable Development Group (2020) states that while online learning is already a part of the education system, the lack of technology infrastructure is still a more significant challenge, especially for non-industrialized countries. The sudden shift to remote learning has also led to spontaneous changes in curriculum, with students being exposed to different learning applications and digital communication tools such as Zoom, Google Meet, Cisco WebEx, and Mikogo. Students have access to online learning materials, course books, and modules, as well as supplementary materials in the form of audio or video recordings.

**Motivation:**

**Motivation for Online Learning**

Specialists and instructors have been keen on student inspiration for quite some time since it is firmly associated with accomplishment and wanted results. Lumsden (1994) characterizes inspiration as students' ability to participate in language learning. Dörnyei (2015) sees it as a vital piece of the complex learning undertaking. Its nonattendance will bomb people regardless of whether they are furnished with the most remarkable capacities, and a vigorous inspiration will compensate for significant lacks. Inspiration is the principal condition to take on a learning task and is the motor that controls the interaction. Dörnyei (2020) recommends that inspiration is firmly connected with commitment and that inspiration should be guaranteed to accomplish understudy commitment. The author offers that any informative plan should mean to keep understudies connected no matter what the realizing setting, customary or e-realizing, which is a problematic situation thinking about the bunch of interruptions in the new century.

The review discusses the concept of motivation in internet-based learning and how it is a crucial aspect that can impact students' success in these types of courses. It references different definitions and perspectives on motivation and its relationship to student engagement. The review also highlights the challenges of internet-based learning, including the potential for distractions and the responsibility placed on students to participate in their knowledge actively. The study also mentions that motivation in internet-based courses is complex and influenced by internal and external factors, with internal factors such as personal attributes being identified as crucial to successful online students. Additionally, it is also mentioned that online students tend to be more motivated by intrinsic factors compared to their offline counterparts.

**Theories of Motivation:**

Maslow's needs of hierarchy theory suggest that human needs are arranged in a hierarchical order and that individuals must satisfy lower-level needs before they can attend to higher-level needs. The five levels of needs include physiological, safety, belongingness and love, esteem, and self-actualization. In terms of learning, this theory suggests that students must have their basic needs met (such as food and shelter) before they can focus on their educational needs. It also indicates that students who feel a sense of belonging and acceptance in their learning environment will be more motivated to learn.

Attribution theory which helps us understand motivation in learning, suggests that individuals attribute the causes of their successes or failures to different factors, such as effort, ability, or luck. According to this theory, students who attribute their success to their effort and capacity will be more motivated to continue learning and working hard. On the other hand, students who attribute their success to luck or external factors may be less motivated to continue learning.

Atkinson (1964) presented this theory based on the following formula:

Motivation (M) = Perceived probability of success (Ps) × Incentive value of success (Is).

In other words, expectancy multiplied by value equals the overall motivation for a student to engage in a particular task or activity. Expectancy theory suggests that students will be more motivated to learn when they believe that their efforts will lead to success and that success is valuable to them. This theory highlights the importance of setting clear and achievable goals for students and providing them with the necessary support and resources to achieve those goals. Additionally, it highlights the importance of making learning relevant and meaningful to students, as this can increase the perceived value of the task and ultimately lead to increased motivation and engagement. Overall, expectancy theory provides a valuable framework for understanding how students' perceptions of success and the value they place on their expectations can influence their motivation to learn.

These theories can provide insights into the complex nature of motivation in learning and help educators design and implement strategies to promote student motivation. However, it is essential to remember that motivation is a dynamic and multi-faceted construct and may be influenced by various factors.

**Achievement Motivation:**

It is a drive that pushes students to strive for success and choose goal-oriented activities with success or failure outcomes. This type of motivation is crucial in education as it affects the cognitive, emotional, and behavioral aspects of students' engagement in the educational process. Standards of excellence and competition can result in achievement motivation through performance evaluations. It is a form of inspiration characterized by a competitive drive and a desire to achieve high-performance standards. It can be increased by individual effort in all activities and helps reflect the individual's perspective of excellence.

**Student's Goals and Motivation:**

The section discusses the importance of setting goals for students to stay motivated in their education. Studies have shown that performance increases by setting goals and decreases when goals are removed or lowered. Dweck and Leggett have proposed two goals from a motivational perspective. The first type is learning, or personal growth goals focused on learning and personal development. This type of goal is called mastery or autonomy goal. The second type of goal is performance or external validation goals, which are focused on demonstrating capability and meeting external standards. This type of goal is called a performance or external validation goal.

**Teacher's Expectation and Motivation:**

The section discusses how teachers' assumptions and beliefs about their students can impact their students' academic achievement and motivation. Studies have shown that teachers' perceptions of students, particularly in early school years and when teachers have limited knowledge about their student's abilities, can influence students' performance. The study by Heyder and colleagues found that teachers who believe math requires innate ability may negatively impact low-achieving students' natural motivation. This suggests that teachers' beliefs about the innate ability being a requirement for mathematical success may hinder creating a classroom environment that promotes student engagement and learning.

**Barriers to online learning:**

Various barriers can impact e-learning and its connection to learning motivation and achievement. Two sets of barriers arerelated to technical facilities and support and those about pedagogy, belief, or personal preferences. These barriers can be classified as material, such as lack of ICT resources, or non-material, such as teachers' knowledge and skills. Research has shown that these barriers can significantly impact e-learning performance and student motivation and attitude, which can negatively affect academic achievement. Therefore, teachers and administrators must develop creative solutions based on best practices to ensure that educational learning objectives are met. The text also emphasizes the importance of understanding the underlying foundations of motivation to enhance it.

**Student Motivation and Engagement:**

In this manner, an individual who feels no catalyst or motivation to act is portrayed as unmotivated. However, somebody stimulated or enacted toward an end is thought of as propelled. This signifies that inspiration can be something that keeps us 'moving.' Inspiration is characterized as the 'want or ability to accomplish something. Understudy inspiration and commitment are related components of understudy discovery that can affect learning results. Lager et al. (2010) express that disregarding the way that there is no generally acknowledged meaning of what involves commitment, understudy, and school achievement, understudy maintenance, and

understudy inspiration are connected 100% of the time to commit. For example, a portion of the early investigations characterized commitment as far as viewpoints like revenue (Dewey, 1913), exertion (Meece & Blumenfeld, 1988), time on task (Berliner, 1990), and inspiration (Skinner & Belmont, 1993).

Motivation is the drive or desire to accomplish something. It is a crucial component in student learning, affecting engagement, achievement, retention, and overall motivation. Commitment and motivation are closely related and are often linked to student success. Studies have defined commitment differently, including through factors like interest, effort, time spent on tasks, and motivation.Online student commitment is characterized as understudies' active interest in e-learning exercises (for example, conversation strings and virtual homeroom) to accomplish learning objectives. Inspiration is a fundamental component to drawing in students and, in this way, upgrading understudy's opportunities for growth.

Motivation is the drive or desire to accomplish something closely related to student engagement and commitment to e-learning. Student engagement, or active participation in online learning activities, is crucial for achieving learning objectives, and motivation is considered a critical factor in promoting student engagement.

**Factors affecting motivation:**

**Internal Factors:**

Their expectations and satisfaction with the course content, communication needs, and level of self-determination were frequently implicated and emerged as sub-themes.

**External Factors:**

Participants generally believed that face-to-face education was better than online education due to external reasons. A common opinion stated by all the participants against online education was that they found face-to-face education, especially classroom environment, more motivating.

This suggests that traditional in-person education's social and interactive aspects significantly influence student motivation and engagement. Students may also prefer immediate feedback and interaction with their peers and instructors in a traditional classroom setting, which can enhance their learning experience. However, it is worth noting that online education has constantly been improving, and many universities and institutions are now providing an interactive and engaging online learning experience. This can help bridge the gap between traditional and online education for student motivation and engagement.

**Learning Management System**

Anderson et al. (2001) recommend that an 'Insightful plan of learning exercises is basic to achieving instructive results' (p. 15). The plan and how courses are organized can be crucial variables related to understudies' inspiration and positive/ negative encounters with learning on the web. The understudies also featured the significance of an organized course and liked that the teacher 'has been a generally excellent facilitator and his work is organized' (Christine, interview 2). Understudies additionally referenced that all the data is there, and they can peruse it, time permitting. Brenda recognized that the course has a legitimate association of materials and ideas that assist understudies with understanding the subject better. The consistent plan of the learning materials to give a comprehensive, organized course supported understudies' advantage and driven understudies to partake in learning exercises effectively.

It is important to note that while face-to-face education may be seen as more motivated by some students, it is not necessarily the only way to achieve motivation and engagement in learning. The design and organization of online courses play a crucial role in creating a positive and engaging learning experience for students. A well-structured course with clear goals and objectives, organized materials, and effective facilitation can support student engagement and motivation in online learning. Therefore, educators need to focus on designing and delivering online courses that are engaging and motivating for students.

**Learner-to-instructor interaction:**

Student-to-student cooperation is crucial for internet learning and prompts understudy commitment. To keep online understudies from encountering likely weariness and disengagement in the learning climate, it is fundamental to construct exercises that upgrade commitment. These exercises help understudies feel associated and can create a unique feeling of the local area. Adore, Kovach, and Banna et al. tracked down those customary innovations for connected learning,such as conversation sheets, visit meetings, web journals, wikis, bunch undertakings, or friend appraisal, which have served well in elevating understudy-to-understudy communication in internet-based courses. The creators enthusiastically suggest using electronic

applications, for example, Twitter channels, Google applications, or sound and video innovation like Wimba Collaboration Suite, to develop commitment in internet-based courses further.

The barriers to e-learning can be categorized as technical, pedagogical, and personal. Material barriers include a lack of ICT resources, while non-material barriers include a lack of teacher knowledge and skills. These barriers can hurt student motivation and achievement. Teachers and administrators should develop creative solutions based on best practices to overcome these barriers. Additionally, student-to-student cooperation is crucial for online learning and can be promoted through interactive activities such as discussion boards, group projects, and peer assessments. The use of technology such as social media, video conferencing, and collaboration tools can also enhance student engagement in online courses.

Banna et al. (2015) recommend videoconferencing or talking in simultaneous exercises and conversation sheets in nonconcurrent exercises as they improve understudy-to-understudy communication. Using web-based media in web-based courses gives a valuable chance to upgrade commitment through close collaboration. Student-to-teacher collaboration prompts higher understudy commitment in internet-based courses (Dixson, 2010; Gayton & McEwen, 2007). Numerous understudy teacher correspondence channels might be exceptionally connected with understudy commitment. Online educators recommend focusing on understudy teacher associations since they might influence learning results (Dixson, 2010; Gayton & McEwen, 2007). The creators tracked down compatibility and cooperation between understudies and teachers in an intelligent and durable climate, including bunch work and informative input, which are significant for understudy commitment bringing about learning achievement. Understudies regularly contact educators about tasks, course materials, and grades; yet to be more compelling, online guidance ought to incorporate open doors for understudies to interface with each other and teachers relating to what makes their learning significant. Furthermore, Gayton and McEwen stress that teachers'

Availability and responsiveness to student inquiries and concerns are crucial for building positive student-teacher relationships and promoting student engagement and commitment. Overall, it is essential for online educators to create opportunities for student-to-student and student-to-teacher collaboration and to use different forms of communication and technology to enhance these interactions. This can create a sense of community and promote student engagement and commitment in online learning environments.Dixson (2010) and King (2014) concur that there should be participation and joint effort among understudies and teachers in web-based courses to increment online understudy commitment. Research has noted that affinity and coordinated effort among understudies and educators in an intelligent climate are significant. Lord (2014) observed that understudies evaluated careful and opportune teacher criticism of their work as most important so they can improve their learning process. Smaller than usual recordings and screencasting are methods to build teacher believability that have been accepted to bring numerous instructive advantages. Venerate, and Kovach (2011) and Robinson and Hullinger (2008) recommend the utilization of new yet grounded advancements, for example, conversation sheets, talk meetings, websites,wikis, bunch undertakings, Twitter, Skype, YouTube, and Ning organizations, to cultivate understudy commitment.

### Learner-to-content interaction

Student-to-content commitment is mentally collaborating with the substance, which can change a student's arrangement and viewpoints. Abrami, Bernard, Bures, Borokhovski, and Tamim (2011) express that an understudy-to-content connection can happen while watching educational recordings, collaborating with sight and sound, and looking for data. Both coordinated and offbeat conveyance are successful choices that help online understudies get to content for fundamental cooperation. Online educators are encouraged to contribute adequate time looking for insightful perusing and intuitive informative materials and planning thoroughly examined evaluations to urge understudy to-content commitment. Genuine use of tasks that improves subject authority and powerful reasoning abilities is one technique connected with cultivating student-to-content commitment. Venerate and Kovach (2011) suggest making the substance wake up utilizing true innovation, which upgrades understudy commitment. Online teachers should be primary in picking material and content when they wish to draw in understudies more in their courses. Online understudies ought not only to be given a rundown of assets but instead, teachers should plan simple exercises that give chances to analyze the errands according to alternate points of view and that urge understudies to be admirably involved

in pertinent data simultaneously. Dixson (2010) reports that understudies observed an assortment of exercises that caused them to feel connected, including course the executives' framework highlights, successful correspondence, and course assistance techniques.

**Community of Inquiry:**

The CIO framework emphasizes the importance of community and interaction among students and teachers in online learning environments. By fostering teacher presence, cognitive presence, and social presence, the framework aims to create a dynamic and engaging learning experience for students. Teacher presence refers to the ability of the instructor to guide and facilitate learning, cognitive presence refers to the ability of students to engage in critical thinking and problem-solving, and social presence refers to the ability of students to interact and collaborate with their peers. Together, these three elements create a sense of community and engagement essential for student success in online learning environments.

Instructor presence creates meaningful outcomes: curriculum design, active instructor facilitation, and integrating multiple pathways for the educational process's cognitive and social aspects. As students enter the depths of the course, instructors are engaged, present, and active and provide meaningful feedback. Cognitive presence, on the other hand, refers to the ability of students to construct and confirm meaning through sustained communication and critical thinking. This is achieved through active discussions, problem-solving, and reflection. Social presence, on the other hand, refers to the ability of students to establish and maintain a sense of community and belonging in an online learning environment. This is achieved through communication, collaboration, and the sharing of personal experiences. Together, these three elements of presence create an environment that encourages active participation, critical thinking, and a sense of community, all of which are critical for student engagement and success in online learning.

The community of inquiry (CIO) framework is a powerful tool for creating compelling online learning experiences by incorporating three essential elements: teacher presence, cognitive presence, and social presence. The intersection of these three elements creates a student-centered environment that fosters active discussions and understanding of different perspectives and challenges student assumptions. To achieve success in online education, it is essential for instructors to be engaged, present, active and provide meaningful feedback. Additionally, informal communication tactics can enhance social presence by encouraging student-to-student interaction and fostering a sense of community. For online education to be successful, administrators must also commit to supporting instructors through ongoing professional development.

**Training, Feedback, and Support**

Program administrators play a crucial role in supporting faculty to improve their online teaching skills and stay up-to-date with the latest best practices in online education. This includes providing ongoing professional development opportunities, resources, and support to help faculty create and deliver high-quality online courses that align with institutional, school, department, and program policies and standards. Additionally, program administrators should monitor and evaluate online courses' effectiveness and provide feedback and guidance to faculty to help them improve their teaching practices and student outcomes. Overall, the role of the program administrator in online education is to provide the necessary support and resources to ensure that faculty can deliver high-quality online instruction that meets the needs of students and contributes to the program's success.

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## Trade Deficit narrows in June on Sharper Drop in Imports

India's goods exports in June marginally fell 0.05% year-on-year to $35.14 billion, but a sharper drop in imports aided the trade deficit to narrow to a four-month low of $18.78 billion frm $20.84 billion a year ago. Exports to the US rose sharply to $25.52 billiion from $20.89 billion  a year ago despite the base tariff on Indian goods exported to US rising to 10%. Imports in June declined 3.71% year-on-year to $53.92 billion.

Sequentially, goods exports were 9% lower than the previous month. The trade deficit also narrowed from $21.88 billion in May. India's goods and services exports during the first quarter on FY26 is estimated at $210 billion, 6% higher on-year, marking the highest-ever first-quarter export figure.

"If the growth continues like this, then we are going to cross the last year's exports figures," said commerce secretary Sunil Barthwal.

In FY25, India's goods and services shipments reached a record high of $825 billion. Exports of 14 of 30 key sectors including petroleum products, fabrics, gems and jewellery, leather, iron ore and spices fell in June, data released by the commerce and industry ministry released recently showed.

"India's exports in June were affected by fall in crude oil prices," he said.

Crude oil and gold imports fell 8.37% and 25.73% to $13.8 billion and $1.9 billion in June, respectively.

Federation of Indian Export Organisations (FIEO) President S C Ralhan urged the government to maintain a sharp, sector-focused export strategy, especially in services. "With India's digital capabilities and skilled workforce, there is immense scope to boost services exports. Investment in digital infrastructure, talent development, and targeted international promotion will be critical to sustaining this upward trajectory," Ralhan said.

Barthwal said the department is monitoring "unusual surges" in imports of commodities and will take action if found that the increase in inbound shipment was on account of any malpractice. In June, the government imposed import curbs on certain colloidal precious metals to check the illegal inflow of gold into India in liquid form. Colloidal precious metals are suspensions of gold or silver nanoparticles dispersed in liquid.

"We have started monitoring the import surges... sending reports to different ministries... if we find that the surge is due to some malpractice, in that case we are also usng the DGFT's good offices to restrict it," Barthwal said. ❐

## India set to surpass China to become largest cotton producer by 2034

India is set to become the world's largest cotton producer by 2034, overtaking China, on improving yields, according to the OECD-FAO Agricultural Outlook 2025-2034.

Over the next decade, India's cotton production is projected to grow at an annual rate of around 2 per cent, driven primarily by productivity gains rather than area expansion, the outlook said. Global cotton production over the same period is expected to grow by 1.3 per cent annually and touch 29.5 million tonnes (mt) by 2034. As per the International Cotton Advisory Committee, the ouput during the 2024-25 season is projected at 25.68 mt.

**Raw Cotton**

India is expected to account for 30 per cent of the global increase in cotton output over the outlook period by 2034, followed by Brazil (27 per cent) and the US (23 per cent).

India's raw cotton productivity has remained stagnant in recent years, ranking among the lowest globally, with yields significantly below those of China and Brazil.

By 2034, yields in India are expected to considerably increase from their current low levels but remain under the world average of 0.8 tonnes/ha. Average global yields are projected to increase by 15 per cent compared to the base period.

To boost the yields, Indian researchers are promoting high-density planting systems, which involve closer plant spacing to maximise output and facilitate mechanised harvesting.

Pest-resistant genetically modified (GM) cotton, including Bt cotton, has also helped reduce pest-related yield losses. Government agencies and research institutions are actively involved in varietal development and integrated pest management initiatives to raise productivity.

"Based on these considerations, the outlook assumes a high yield growth potential at 1.7 per cent per annum over the next decade, enabling India to surpass China as the world's largest cotton producer by 2034," it said.

Global cotton trade is projected to grow steadily at 1.6 per cent annually, reaching 12.3 mt by 2034.

India's cotton consumption is projected to grow 1.3 per cent annually over the next decade. ❐

## Tariff tweaks: India to get benefit in over half of exports to US

Indian exporters stand to gain in well over half of the products exported to the US, under the new tariff structure for countries imposed by the world's largest economy.

Indian firms are better placed to increase their share in the US imports of $2.29 trillion in product lines where they now have a tariff advantage compared with their main competitors, according to Niti Aayog's latest Trade Watch report.

These estimates are based on the tariff levels as on July 10, when India suffered the additional baseline tariff of 10%, and many other countries, including China were subjected to relatively higher tariffs.

The think tank's report noted that at the HS (harmonised system) two-digit level, out of 30 products that have 91.4% share in India's total exports to the US, India could gain in 22 products under the new tariff structures imposed by US.

These 22 products have a share of 61% in India's exports to the US ($49.3 billion out of the total export of $81 billion in FY25).

The share of these products in the total US imports from all countries is estimated to be a substantial 68% or $2.29 trillion, indicating the wide scope for Indian exporters.

In six products, out of the 30 reviewed, which have a share of 32.8% ($26.5 billion) in India's exports to the US, the status quo might remain as India faces a slightly average tariff of 3%.

"More notably, India enjoys a competitive edge over China in several key sectors.

"The average tariff differential between Indian and Chinese exports is 20.5% in India's favour. By leveraging its comparatively lower tariff burden, especially in contrast to China, India is well-positioned to gain market share," the Niti report said.

Meanwhile, HS 4-level analysis offers a more granular view, identifying 78 products with potential gains, with the share of these exports to the US (where India can gain) at 52% ($42 billion). These products account for $873 billion in US imports, where India is going to be much better off.

"So, in the majority of the products at the HS two-digit level and HS four-digit level, India is going to be more competitive in the US market. It (current tariff structure) gives opportunities of more than $2.2 trillion of market at the two-digit level and close to $900 billion of market at the four-digit level, where India is going to get better now," Pravakar Sahoo, Programme Director, NITI Aayog, said.

India is currently negotiating a bilateral trade agreement (BTA) with the US to gain more market access in labour-intensive as well as technology-driven sectors.

The first tranche of the agreement may be signed before fall this year. An interim understanding may be reached on the broad contours of the deal soon, while Indian negotiators are firm on protecting the sensitive areas of the farm economy.

In the analysis, Niti Aayog report has factored in the US's 10% additional baseline tariff on imports from all countries except Mexico and Canada. Further, the latest tariff imposed on other countries as on July 10, 2025 have been considered.

Imports from Mexico and Canada are subject to a higher tariff of 25% and 35%, respectively, while imports from China face an additional higher tariff of 30%.

India's competitiveness is enhanced due to higher tariffs on competitors, particularly in sectors like minerals, fuels, apparel, electronics, plastics, furniture, and seafood, Sahoo said. ❐

## US on top for garments electronics, Marin goods exports in Q1

The US was top destination for electronics, maring goods and readymade garments exports from India in the first quarter of FY26, underscoring its position as India's most critical trade partner, an analysis done by the commerce department showed.

The US had a 60.17% share in India's electronics exports in April-June, 37.63% in marine goods shipments and 34.11% in ready made garments. It was India's top trading partner in the quarter, according to the analysis.

In June, India's overall goods exports to the US jumped 23.5% on-year while they rose 22% on-year in the April-June period.

In electronics, the UAE, China, the Netherlands and Germany were the other top destinations. India's total electronics imports rose 47% on-year in April-June at $12.41 billion.

"This geographical spread highlights India's growing integration into the global electronics

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supply chain and underscores the country's emergence as a credible alternative manufacturing hub in Asia," said an official.

Similarly, the US remained the dominant export destination in the two labour-intensive sectors of readymade garments and marine goods. The official said a revival in marine goods exports is due to robust demand from key markets such as the US.❐

### Textile exporters in wait and watch mode on US tariff move

The Indian textile industry is on a wait and watch mode regarding U.S. tariff announcements.

Between January and May this year, the U.S. imported textiles and apparel worth $5.11 billion from India, which is 13% more than the exports for the same period last year.

"We are actively tracking the progress of the latest tariff-related announcements, including their impact on specific sectors, since they concern many countries which are our competitors in the textile and apparel export arena," said the Confederation of Indian Textile Industry chairman Rakesh Mehra.

"The initial signs in this connection augur well for Indian textile and apparel expoters in terms of being able to expand access in the U.S. as they would now become more price competitive relative to those from other countries," he added. The U.S. had imposed a 35% tariff on exports from Bangladesh.

The industry is confident a mini trade deal would be in place soon. ❐

### Textile exports decline 2.07% in June

Textiles exports declined 2.07% in June 2025 compared with the same month in the previous year, even as exporters expressed hope that there would be more orders in the coming months.

For April-June 2025, textile exports shrank 0.94% as against the same period last year. Apparel exports registered a 1.23% growth in June compared with June 2024 and 8.91% growth for April-June 2025 compared with the same period last year.

Total exports of yarn and apprel in June was 0.61% lesser than that of the same month in the previous year.

Industry officials said the decline in textile exports was expeced mainly because of the uncertainties in the international market. There is still no clarity on the tariffs by the U.S. on Indian products and this had impacted exports, they said. ❐

### Auto, textile exporters switchover to Cape of Good Hope

Amid uncertainties over the Iran-Israel ceasefire, Indian exporters remain largely relieved, indicating that most of their shipments remain unaffected so far. Nearly 96 per cent of India's container traffic has already shifted to the Cape of Good Hope route.

From automobile majors like Bajaj to textile industry players, most sectors are now targeting the US, European, and African markets via this alternative in West Asia. According to industry players, the minimal Indian cargo navigating through the Strait of Hormuz and Red Sea has not faced any disruption so far.

"We have already started an increase in freight to Europe, Latin America, and Africa. There will be delays in shipping schedules, by around 10 days, due to re-routing through the Cape of Good Hope route," said Rakesh Sharma, executive director, Bajaj Auto. However, auto-makers fear a possible rise in freight and insurance rates.

Iran controls the northern side of the Strait of Hormuz, a passage which handles a good share of gloabl trade. "Already 96 per cent of the container traffic is taking this route. We are not facing any issue at this point. The Cape of Good Hope takes some extra time. However, the freight rates are also down to Europe compared to what they were a year ago," said Sunil Vaswani, Executive Director, Container Shipping Lines Association.

While the shipments to Europe, the US, and Africa remain unaffected, the only concern for the Indian industry is the West Asia markets. "We are not facing any impact at all, as West Asia's share of our exports is minuscule. For the three major consumers — the US, Europe, and the UK — we are taking the Cape of Good Hope already," said Elangovan Viswanathan, president of the Buying Agents Association in the textile sector, and managing director of SNQS Internationals. ❐

## Textile Cos Rally after US increases Tariffs on Dhaka

Textile stocks jumped up to 9% recently after US President Donald Trump imposed 35% tariffs on garment imports from Bangladesh — one of the biggest exporters of garments to the US — effective from August 1. The move spurred optimism in Indian textile stocks, in anticipation that lower tariffs on Indian exports could lead to better prospects for these companies.

Analysts said a trade deal between India and the US could lead to lower tariffs, which may improve businness for textile companies.

"The imposition of a higher rate of tariffs on key garment exporters like Bangladesh puts Indian textile exporters in a favourable position," said Kaustubh Pawaskar, VP—Lead Analyst (Consumption), ICICI Securities (Retail). "Any positive development in the India-US trade deal could result in further gains."

However, until the uncertainty over the deal persists, near-term volatility cannot be ruled out.

The stocks gave up some of the gains but still closed higher recently. Raymond Lifestyle gained 5%, while K.P.R. Mills and Trident advanced 3.6% and 3.3%, respectively. Gokaldas Exports and Garware Technical Fibres rose 2.7% and 2.1%, respectively, while Welspun Living moved 0.6% higher.

"The 35% tariffs on Bangladesh and 36% on Cambodia and 40% on Myanmar — major textile exporting nations — may be favourable for India, as the expected trade deal between the US and India may include a lower tariff rate for India, which prompted the buying interest in textile stocks today," said Prerna Jhunjhunwala, VP, Equity Research — Textile and Retail, Elara Capital.

Jhunjhunwala said valuations are factoring in structural opportunities from the US Free Trade Agreement, the India-US trade deal, and a potential deal between the EU and India, but near-term uncertainty is expected to persist.

India currently holds just 6% of the US Ready-Made Garment market, compared with Vietnam's 19% and Bangladesh's 9%. The tariffs on these countries create opportunities for Indian exporters.

"With Bangladesh's key exports — woven apparel ($4.78B) and knitwear ($2.63B) — now costlier, India's own exports in knit & woven garments ($2.55B each) and home textiles ($2.21B) are set to gain share," said Dharan Shah, Founder, Tradonomy. AI — an investment platform. "Gokaldas Exports, Vardhman Textiles, and KPR Mills are best positioned to benefit from this sourcing shift, especially in high-demand U.S. apparel segments," he said.

Analysts said most textile stocks have seen significant corrections recently. However, growth is likely to be flattish in FY26, as retailers in the US have remained cautious and are not keeping excess inventory.

"Order outlook will improve once uncertainties related to tariffs are settled," said Pawaskar. "The benefit from the trade deals with the US and the UK is likely to trickle in FY27 and lead to consistent growth for textile companies in the medium to long run."

Jhunjhunwala said the profitability of textile companies could be under pressure for now. ❐

## Cotton body witnessesed higher opening stocks for next season

Closing stocks of cotton in the country for the current 2024-25 season ending September are estimated to be around 55.59 lakh bales (of 170 kg each) – about 84 per cent higher than the corresponding previous year's 30.19 lakh bales, per trade body Cotton Association of India (CAI)'s latest estimates.

In a statement, CAI President Atul Ganatra said the cotton pressing numbers for the 2024-25 season are estimated at 311.40 lakh bales, higher than its previous estimate of 301.14 lakh bales on higher crop size.

The increase is attributed to he higher than estimated pressing of the fibre crop in Maharashtra (5 lakh bales), Gujarat and Telangana at 1.5 lakh bales each and 1 lakh bales in Karnataka.

Andhra Pradesh, Haryana and Rajasthan have also witnessed a marginal increase in pressing numbers on improved crop arrivals.

CAI estimates the total cotton supply till end June at 356.76 lakh bales, which consists of pressing of 296.57 lakh bales, imports of 30 lakh bales and the opening stock of 30.19 lakh bales.

Consumption till end-June stood at 233.5 lakh bales, while exports were estimated at 15.25 lakh bales. Stocks at the end of June 2025 are estimated at 108.01 lakh bales.

This includes 32 lakh bales with textile mills and the remaining 76.01 lakh bales with CCI, the Maharashtra Federation and others (MNCs, traders, ginners, exporters, etc), including cotton sold but not delivered.

CAI has estimated the total cotton supply till the end of the cotton season 2024-25 at 380.59 lakh bales against the earlier projection of 370.34 lakh bales on higher production in some States.

**Offtake rises**

Domestic consumption for the season is seen marginally higher at 308 lakh bales against the earlier projection of 305 lakh bales, while exports are projected at 17 lakh bales. In fact, exports are seen lower by 40 per cent this season over corresponding last year's 28.36 lakh bales.

Imports of cotton for 2024-25 are pegged at 39 lakh bales, more than double the previous year's estimates of 15.2 lakh bales. Till June end, about 30 lakh bales are estimated to have arrived at the Indian ports, CAI said.

Meanwhile, the sowing of cotton has been progressing well in the key producing States. Till July 7, the fibre crop has been shown on around 79.54 lakh hectares (lh), marginally higher than 78.58 lh a year ago, per Agriculture Ministry data. ❐

## India's textile trade in concern as US tariff knot tightens

The rise in the US tariff to 50 per cent has brought India's textile and apparel export industry to a stand-still. Almost all major US retailers, including Walmart, Target, Amazon, The TJX Companies, Kohl's Gap Inc., and H&M, have asked their suppliers in India to hold order until there is clarity on the final tariff.

Not just that, companies have fast-tracked existing orders to ship them before August 27 so that the additional penalty does not apply to buyers. "The buyers have asked us not to quote any prices at the moment. They've put on hold all enquiries. It's not the global brands directly — they've asked the importing companies to hold Indian imports," said Elangovan Viswanathan, president of the Buying Agents Association and managing director (MD) of SNQS International.

The US is India's largest market for textile and apparel exports. During January-May 2025, US imports from India were valued at $4.59 billion, a rise of more than 13 per cent compared to $4.05 billion during the same period last year. In calendar year 2024, the US imported roughly $10.8 billion worth of textiles and apparel from India.

However, industry sources clarified that holdign orders doesn't mean cancellation or diversion from the Indian market. Diverting orders would mean shifting the entire supply chain and manufacturing to another country. Hence, global majors are likely to stay committed to India in the immediate future.

"Holding doesn't mean cancellation — it's about changing price tags," said Sabu M Jacob, MD of Kitex Garments, the world's second-largest manufacturer of infant clothing. "We don't know how long this can be kept on hold, and we're unable to complete production. The bigger issue is that, due to uncertainty, we are unable to deliver," Jacob added.

"The most unfortunate thing is that countries competing with us — like Bangladesh, Vietnam, and China — have lower tariff. A lot of orders will be diverted. Whatever's in the pipeline, we have to supply it fast, before August 27," Viswanathan added.

The new US tariff for Bangladesh is 20 per cent. The latest US tariff rates for Indonesia and Cambodia are 19 per cent, and Vietnam's is 20 per cent. Currently, China is the largest exporter of textiles and apparel to the US, followed by Vietnam, India, and Bangladesh.

In some categories, such as knitted apparel, the tariff is as high as 63.9 per cent, and in woven apparel, around 60.3 per cent, according to industry sources. Experts warn that these steep tariffs could lead to a 40-50 per cent decline in US-bound exports.

"To mitigate the impact of tariffs, busnesses must strategically diversify into alternative export markets, especially regions where demand for affordable fashion is rising, such as Latin America, Africa, and Southeast Asia. Investing in automation and digital technologies can enhance operational efficiency, reduce production costs, and improve supply chain responsiveness," said Abhishek Dua, cofounder of Showroom B2B, a business-to-business platform that supports value fashion retailers in India.

The Clothign Manufacturers Association of India (CMAI) has expressed deep concern over the US decision to hike tariffs from 25 per cent to 50 per cent, calling it a "severe setback to Indian apparel exports". "The imposition of an additional 25 per cent tariff on India will deliver a crippling blow to the Indian apparel industry. The proposed 50 per cent tariff will increase the cost of Indian apparel by 30-35 per cent compared to alternatives from countries like Bangladesh and Vietnam, making Indian exports uncompetitive in the global market," CMAI President Santosh Katariya said in a release.

He added that buyers are unlikely to absorb such a substantial price gap, which could lead to a sharp decline in export orders.

Rahul Mehta, chief mentor at CMAI, explained that many exporters may opt to ship by air so that their orders reach the US before August.

Another major textile exporter told reporters that his company had placed employees in the UK back in February, as it already had a business presence there. He added that the UK free trade agreement helps in this process, and the firm expects to double its UK business in the next three years.

He also said he would not choose to send goods by air, as they would still attract a 25 per cent tariff.

"Thanksgiving and Christmas are four months away. If we stop manufacturing now, getting products on the shelves will be difficult. I think there will be a solution," he added. ❐

## Chemical, textile exporters may get some relief

The Government recently held a meeting with the representatives of the textiles and chemicals industry, the sectors that will be the worst hit by the 50% tariffs by the US, and discussed strategies to cushion the blow through incentives and market diversification.

One of the proposals discussed at the meeting was to prioritise support to these sectors along with others that are facing a big dent in exports to the US under the Export Promotion Mission (EPM).

"The government is looking at extending support measures under this mission to sectors which would be badly hit by the US tariffs," sources said.

In the meeting convened by the commerce ministry, the exporters also sought return of the Interest Equalisation Scheme (IES) that ended on December 31, 2024. The scheme used to provide a 3% subsidy on per and post shipment credit. Other demands were extension of RoDTEP scheme (Remission of Duties and Taxes on Exported Products), RoSCTL (Rebate of State and Central Taxes and Levies) for further five years, timely payment of dues.

The mission that was announced in this year's budget will have 12 sub-schemes to meet the credit needs of exporters and provide marketing support and help them navigate regulatory hurdles. It will also have elements to support e-commerce exports.

For credit support six sub-schemes are under consideration in the EPM. There is a proposal for a separate credit facilitation scheme for new exporters and micro, small and medium enterprises (MSMEs). Another will facilitate finance to emerging export opportunities in new markets or products.

The allocation for the mission for this year has been kept at ₹2,250 crore, of which ₹200 crore is for Market Access Initiative (MAI) and ₹50 crore is for lab grown diamonds. Rest of the amount is for designing and implementing some schemes from the list of 12.

The exporters also asked for a direct shipping line to the US, Europe and Japan. Currently, many of the Indian export cargoes go to these markets after changing ships at major transshipment hubs in the world like Singapore and Dubai. A representation has been sent to the GK Pillai committee on RoDTEP issues.

The exporters also requested measures to cut compliance burden, simplification of advance authorisation norms and cut in port charges. Advance authorisation scheme allows duty-free imports of inputs for fabricating products for export.

The industry sources said exporters have stated exploring opportunities in new geographies for their products. The world trade is disrupted and in this, there are possibilities of export diversification in this climate. Export promotion councils are working on this. The commerce ministry is also analysing," they said.

Another proposal that is being worked upon is the export units selling their production in the domestic market. This step could also lead to import substitution. If a produt that is being imported by a company is exported by another then that demand can be met within the country.

US President Donald Trump recently slapped an additional 25% tariff on Indian imports as a retaliation for buying crude oil from Russia. This 25% duty followed 25% additional duties imposed by Trump on July 30 as reciprocal tariffs. While the earlier 25% component of the duty comes into force from August 7, the additional duties will come into froce from August 27.

Founder of GTRI Ajay Srivastava said that the imposition of additional tariffs are expected to make Indian goods far costlier in the US, with potential to cut US-bound exports by 40-50% from $86.5 billion last financial year. The worst affected sectors will be shrimp, textiles, gems and jewellery. ■

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## Liva Unveils' Unified contrasts' at Fashion week with showstopper Anupriya Goenka

Navyasa by Liva, from Birla Cellulose, unveiled their stunning Spring Summer '25 collection Unified Contrasts at a Fashion Week. Designed for the modern woman, this highly anticipated collection offers a mesmerizing blend of ethereal prints and chic silhouettes that weave a vibrant and colorful story. Navyasa continues to stand as a beacon of self-expression and creativity, empowering women to embrace their true selves through fluid, breathable fabrics.

This collection brings together a diverse range of designs to suit every mood and moment. Sarees crafted from Liva Linen Excel fabric offer light, fluid silhouettes with soft pastel backgrounds and striking bold puzzle-inspired motifs—perfect for the Indian summer. Timeless monochrome print sarees, made from lightweight and lustrous Liva Satin, showcase unique contemporary prints, making them an elegant choice for evening wear. These sarees are light, vibrant, and a great accompaniment to an effortlessly chic, confident look. For everyday grace, the Liva Kota Doria Collection features regal hues with bold floral prints on airy Kota Doria fabric—ideal for both casual outings and office wear, while adding a touch of luxe to your everyday style.

The showstopper, actress Anupriya Goenka adorned a beautiful free-flowing saree in soft pastel hues and striking bold motifs, looking surreal as she glided on the runway.

Anupriya Goenka expressed her excitement, saying, "Walking for Navyasa by Liva was an absolute joy. I loved how the saree looked and felt, it was amazingly light and flowy, yet so luxurious. This collection is perfect for women who want effortless elegance in their everyday wardrobe."

Commenting on the showcase, Mr. Manmohan Singh, Group Executive President and Chief Marketing Officer of Birla Cellulose, said, "With this collection, we look forward to fulfilling the aspiration of modern women who want high-fashion outfits that are easy to wear and move in. The entire collection is sustainable, of natural origin & skin friendly."

The showcase at the Fashion Week was a testament to Navyasa by Liva's commitment to quality fashion attires. By blending innovation, sustainability, and timeless aesthetics, the brand continues to set new trends while celebrating the essence of contemporary femininity.

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CORPORATE NEWS

## Bluesign® observes 25 years as a global leader in Sustainable Textile

"25 years ago, bluesign was born out of a bold idea, that sustainability could be embedded into the DNA of product creation. Twenty-five years later, we are proud to be a beacon of trust, innovation, and responsibility, and to partner with industry leaders worldwide in building a more sustainable future together."

"2024 marked another successful year for bluesign System Partner companies and bluesign overall. Adverse impacts were reduced across our manufacturing partner companies for another consecutive year, and the number of companies that are part of our ecosystem has increased; so has the number of approved bluesign articles and products."

This is a testimony to the effectiveness of the bluesign total solution approach, working with 900+ partners along the various stages of textile production, from chemical suppliers to fashion brands and retailers, to enable the production of safer and cleaner products for the planet and its people.

While we increased our external outreach, 2024 also witnessed internal changes within bluesign, setting us up to better serve our customer needs. Coming close together with our parent company, stems from the same purpose. Together with SGS, by reaching out to over a thousand brands, we are driving a transformative shift that is defining the future of textile production and creating lasting value for people and the planet.


Daniel Rüfenacht, CEO of bluesign.

Against the backdrop of the urgency of the climate crisis but also economic and political instability, focusing on where one can have the most impact on sustainability is essential, and primary data and information to that end are necessary. bluesign is the gold standard in the market for exactly that. The assessments and improvement roadmaps we offer to textile manufacturers, chemical suppliers and fashion brands that are part of our network enable sustainability, safety and integrity across the textile value chain.

Additionally, transparency and accountability in the industry are more important than ever with the increase in regulatory requirements across the European Union and more globally, but equally in the face of changing consumer expectations towards more sustainable purchases.

I would like to conclude by thanking bluesign employees and our System Partner companies in making, every day, our vision of a safer and better planet a reality. I look forward to new partners joining us in our mission to create a world where textiles enrich lives without compromising health or the environment."

**— Daniel Rüfenacht, CEO of bluesign.**

With our 25th anniversary unfolding over the coming weeks, we would love to make our CEO vision and expertise available to you for interviews. Please visit https://www.bluesign.com/25th-anniversary/ for a look into bluesign's journey, along with testimonials from many of our system partners - representing some of the world's most sustainable fashion brands, manufacturers, and material innovators.

Additionally, we are proud to highlight the 2024 bluesign System Impact Report, which provides a comprehensive, data-driven overview of how our global network of system partners is driving measurable progress toward more responsible and sustainable textile production. The report underscores the power of a unified, continuous improvement-based approach to reduce environmental and chemical risks at scale.

System-Wide Impact Reductions by Intensity (2024 vs 2023):

- **$CO_2$ Emissions: ↓ 17% vs. 2023**
- **Energy Consumption: ↓ 14%**
- **Freshwater Use: ↓ 8%**
- **Chemical Supplier Assessments: 140+ completed in 2024**
- **Manufacturer Assessments: 300+ factories in 2024**

### Sustainable Textile Innovation

2025 marks a pivotal milestone for bluesign, the global authority in sustainable chemical and environmental management for the textile and fashion industry, as it celebrates 25 years of advancing cleaner, safer, and more responsible manufacturing practices across the global supply chain.

Since 2000, the Swiss-founded company has led the global charge towards a more sustainable future, developing a science-based, input stream management system to eliminate harmful substances at the source of textile production. Now spanning 900+ system partners across the globe, bluesign continues to deliver measurable reduction in environmental impact at an unprecedented scale. The company sets the global benchmark for responsible production with stringent criteria for chemical use, environmental performance, and resource efficiency, and serves as a one-stop resource for navigating ESG and upcoming legislation (CSDDD, CSR, ESPR, DPP etc), helping partners stay ahead of global compliance standards while embedding verified sustainability into every stage of production.

### Then & Now: A Mission That Endures

From its inception, bluesign's mission has remained clear: remove harmful chemicals from textile production from the beginning, and hence ensure safer working conditions, reduced harm on the environment, and deliver safer products for consumers. Over 25 years, this mission has only strengthened, evolving to meet global challenges like PFAS elimination, decarbonization, and circularity, while driving continuous improvement across the industry.

### Measurable Impact at Scale

The bluesign System enables its partners to make verified, measurable progress toward sustainability goals:

- Safer chemistry and materials: Over 28,000 chemical products and 70,000 textile materials carry the bluesign APPROVED status, signaling compliance with the strictest industry criteria and elimination of hazardous substances including CMRs and PFAS.
- Environmental Performance: Since 2019, bluesign System Partner manufacturers have collectively achieved the following improvements in environmental footprint:
- Global Reach: The bluesign network now includes over 900 System Partners across the world, including chemical suppliers, textile mills, manufacturers, and brands.
- Worker & Consumer Safety: The bluesign System ensures safe conditions for workers and non-toxic products for consumers, built on a foundation of transparency and accountability.

### Why It Matters: A Holistic, Verified Approach

bluesign's unique value lies in its holistic system, which tracks and verifies impact at every stage - from chemical inputs to final product. The independent, science-based verification process goes beyond traditional certification to ensure ongoing compliance and continuous sustainability improvements, building trust with stakeholders and empowering the industry to move forward responsibly.

### Looking Ahead: The Next 25 Years

As the industry faces new challenges, including circularity and legislative shifts, bluesign continues advancing solutions that protect workers, consumers, and the environment, and remains committed to innovation and global impact.

As the industry faces new challenges, including due diligence, extended producer responsibility, and digital product passports, legislative shifts under the EU Green Deal, and rising expectations around circularity, bluesign remains committed to innovation and impact.

"bluesign was born out of a bold idea, that sustainability could be embedded into the DNA of product creation," said Daniel Rüfenacht, CEO of bluesign technologies. "Twenty-five years later, we're proud to be a beacon of trust, innovation, and responsibility, and to partner with industry leaders worldwide in building a more sustainable future together."

To commemorate its 25th anniversary, bluesign will host a series of events, expert panels, and global activations celebrating the progress of its partners and educating the industry on the future of sustainable textiles.

### About bluesign

bluesign helps the textile industry reduce its impact on people and the planet. Through a structured system for sustainable chemical management and responsible manufacturing, bluesign empowers brands, manufacturers, and chemical suppliers to create safer, more responsible products. By eliminating harmful substances at the start of production, bluesign ensures that textiles and accessories meet the highest safety and environmental standards. Since 2000, over 900 industry leaders have partnered with bluesign to drive meaningful change.

bluesign is part of SGS, the world's leading testing, inspection, and certification company.

**For further information, please contact:**
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## Transforming Home Textiles: Lenzing exhibited Next-Gen Fibers at Panipat Conclave

The Lenzing Group, a global leader in wood-based specialty fibers, successfully hosted the Lenzing Conclave at The Orlov Hotel in Panipat, bringing together manufacturers and exporters from the home textile industry. This exclusive event provided a dynamic platform to explore Lenzing's latest fiber innovations and their applications in carpets, rugs, bed linens, terry towels, and filled products such as comforters and pillows.

As part of its ongoing commitment to sustainability and innovation, Lenzing showcased its cutting-edge fiber portfolio, featuring TENCEL™ Lyocell A100, LF, x Micro, Fill, and LENZING™ ECOVERO™ Black. The event highlighted the potential of Lenzing fibers in structural bed linens, demonstrating how they create unique textures and effects, making them suitable for both basic weaving techniques and intricate designs.

Avinash Mane, Senior Commercial Director for AMEA & NEA in Commercial Textiles at Lenzing Group, emphasized the company's vision, stating:"With sustainability at the core of everything we do, Lenzing is dedicated to offering fiber solutions that not only enhance performance but also minimize environmental impact. Our TENCEL™ and LENZING™ ECOVERO™ fibers are reshaping home textiles by providing innovative, high-quality, and eco-conscious alternatives. The Lenzing Conclave in Panipat served as a key platform for collaboration, allowing us to engage with manufacturers and exporters to drive meaningful change in the industry."


Through interactive discussions and product showcases, the Lenzing Conclave in Panipat strengthened industry connections and reinforced Lenzing's position as a global leader in sustainable fiber solutions. The Lenzing Group extends its gratitude to all attendees for their enthusiastic participation and looks forward to fostering future partnerships that will shape a more sustainable future for home textiles.

### About the Lenzing Group

The Lenzing Group stands for the ecologically responsible production of regenerated cellulose fibers based on cellulose and recycled material. As an innovation leader, Lenzing is a partner to global textile and nonwoven manufacturers and drives many new technological developments. The Lenzing Group's fibers are the raw material for a wide range of textile applications – from functional, comfortable and fashionable clothing through to durable and sustainable home textiles. A range of LENZING fibers is also certified by TÜV AUSTRIA for the following properties: biodegradable in soil, fresh water and marine environment as well as compostable in home applications and industrial facilities.

The Lenzing Group's business model extends far beyond that of a conventional fiber producer. Together with its customers and partners, Lenzing develops innovative products along the value chain, creating added value for consumers.

The Lenzing Group strives for efficient utilization and processing of all raw materials used and offers solutions for the transformation of the textile industry from the current linear economic system to a circular economy. In order to reduce the rate of global warming and thereby also support the goals of the Paris Agreement and the EU Commission's Green Deal, Lenzing has a clear, science-based climate action plan that aims for a significant reduction in greenhouse gas emissions by 2030, and a net-zero target (Scopes 1, 2 and 3) by 2050.

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## Raise at maximum level: Kornit Digital Champions Digital Mass Customization at FESPA 2025

### Featuring Live Demonstra1ons of Apollo Direct-to-Garment Pla:orm and Expert Insights in Bridging Screen and Digital Innova1on

Kornit Digital LTD. (NASDAQ: KRNT) ("Kornit" or the "Company"), a global pioneer in sustainable, on-demand digital fashion and textile production technologies, announced it has taken a bold statement at FESPA 2025.

With a clear message to the industry—"Maximize your screen printing profits"—Kornit will demonstrate how digital mass customization solutions are not only the perfect complement to screen printing, but the key to scalability, sustainability, and future-ready profitability.

### A Bridge Between Screen and Digital Production

At FESPA 2025, Kornit has positioned itself as the definitive screen complementary solution, offering powerful new business models tailored to customer needs.

At the center of this showcase was the Kornit Apollo, the company's high-throughput digital production system, delivering unmatched performance and efficiency for mass customization environments. Apollo is supported by Kornit's new All-Inclusive Click (AIC) payment model, providing customers with predictable costs over time and lowering barriers to entry — making scalable digital production more accessible than ever.

**Guy Yaniv, President of Kornit EMEA, commented:** "With Kornit Apollo and our holistic ecosystem, we are empowering businesses to take the best of traditional screen printing and combine it with the endless possibilities of digital. It's about maximizing profitability, increasing flexibility, and ensuring our customers can thrive in a sustainable, on-demand world."

Attendees will experience live demonstrations of Apollo in action, operated by Tony Palmer, a veteran screen printing consultant with over three decades of experience—bringing credibility and real-world insight into the journey from traditional screen printing to scalable, profitable digital production.

### Proven Success in Real-Time

Kornit's presence at FESPA will feature success stories from a global customer base using Kornit technology to scale and evolve:

- **Blue Tomato –** A multi-channel retailer with upgraded Atlas MAX PLUS systems driving both online and in-store offerings
- **Print Palace –** A leading German screen printer now running its first Kornit Apollo for digitalscale production
- **Spread Group –** Operating dozens of Kornit Atlas MAX systems to power its personalized ecommerce platform
- **T Shirt & Sons –** Integrating Apollo with multiple DTG systems to deliver flexible, high-volume fulfillment

The customers have participated in the live panel discussion during Kornit's press conference on May 7 at 10:00 AM. Together, they have shared real-world insights on scaling digital garment production, bridging traditional and modern workflows, and maximizing business impact with Kornit technology. In addition, Kornit has collaborates with key partners

including AS Colour, B&C, Fulfill Engine, Gooten, Sols and Stanley/Stella and provided visitors with a 360-degree view of the ecosystem enabling print-on-demand at scale.

**Print With Purpose: Supporting the FESPA Foundation**

All garments printed during the event were donated to the FESPA Foundation, supporting its mission to:

- Promote sustainable practices in the print industry
- Empower underserved communities
- Provide educational resources to children in need

This initiative reflects Kornit's continued commitment to responsible innovation and creating longterm value beyond the business.

**About Kornit Digital**

Kornit Digital (NASDAQ: KRNT) is a worldwide market leader in sustainable, on-demand, digital fashion, and textile production technologies. The company offers end-to-end solutions including digital printing systems, inks, consumables, sohware, and fulfillment services through its global fulfillment network. Headquartered in Israel with offices in the USA, Europe, and Asia Pacific, Kornit Digital serves customers in more than 100 countries and states worldwide. To learn more about how Kornit Digital is boldly transforming the world of fashion and texHles, visit www.kornit.com.

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## Jeanologia introduced laser technology to new creative heights at Kingpins Amsterdam

Through an exclusive capsule collection, the company highlights the boundless potential of laser as an aesthetic, versatile, and transformative tool.

Valencia (April 16, 2025).Jeanologia, a global leader in technological innovation for the textile industry, introduce its new concept "ONE TECHNOLOGY. ALL POSSIBILITIES" at Kingpins Amsterdam. This statement of intent emphasizes laser technology as a tool for expression, efficiency, and transformation. One system, infinite possibilities to redefine denim and bring any creative vision to life.

At this year's Kingpins in Amsterdam, Jeanologia presents a fresh perspective on laser technology not just a technique, but as an essential tool for designers, brands, and laundries looking to differentiate themselves, innovate, and embrace a more conscious, efficient, and emotionally connected model.

At its booth, the company showcases the creative and technical potential of laser through an exclusive capsule collection, centered around three key concepts:

**Pure Vintage:** A tribute to classic denim. Garments that recapture the essence of authenticity by recreating natural wear effects with impeccable realism. Laser technology, combined with the Atmos washing process, achieves finishes that evoke decades of history, honoring both aesthetics and the environment.

**Creative Possibilities:** An innovative concept that positions laser as a medium for artistic expression, unlocking new creative possibilities. Vector designs, hyper-realistic images, drill effects, and visual textures stimulate the imagination, proving that technology can be both emotional and at the forefront of creative vanguard.

**Denim Métiers by Jeanologia:** As a special highlight, Jeanologia presents 'Denim Métiers', a unique exhibition creating a bridge between denim as an industrial material and haute couture. Conceptual garments that elevate denim into an artistic, refined dimension, creating a distinctive language that breaks both technical and aesthetic boundaries.

In the words of Carme Santacruz, Jeanologia's Creative Director: "With 'ONE TECHNOLOGY. ALL POSSIBILITIES', we aim to go beyond the traditional technical view of laser and reveal

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its true essence as a versatile, emotional, and artistic tool, capable of adapting to every brand, designer, and production challenge."

With this new proposal, Jeanologia continues to strengthen its position as a leader in sustainable innovation, pushing the textile industry toward a more creative, efficient, and conscious future.

**Jeanologia: 30 years leading the transformation of the textile industry**

Since its founding, Jeanologia has been on a mission to transform the textile industry into a more ethical, sustainable, and efficient model. The company works closely with brands, retailers, and suppliers on this transformative journey, offering disruptive technologies, innovative software, and a new operational model. Their groundbreaking solutions, including laser technology, G2 ozone, Dancing Box, e-flow, H2Zero, and ColorBox, have redefined garment design and finishing standards, eliminating polluting processes and significantly reducing the use of water, energy, and chemicals. Thanks to these advancements, Jeanologia has saved millions of liters of water and eliminated harmful substances, turning its vision of a truly sustainable textile industry into reality.

In 2025, Jeanologia celebrates its 30th anniversary, marking a legacy of three decades of sustainable innovation. From the introduction of its laser technology in 1999, which revolutionized denim finishing, to its current challenge of implementing a revolutionary sustainable garment dyeing process, the Spanish company has pioneered solutions that not only benefit the environment but also optimize operational costs. Looking ahead, Jeanologia remains committed to creating an eco-efficient and ethical textile future, encouraging all industry stakeholders to join its Mission Zero initiative: dehydrate and detoxify the textile industry. No more water and toxic chemicals used in garment finishing around the world.

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## A Great acquisition by Textile Color AG

**TEXTILCOLOR AG acquires SCHOELLER TECHNOLOGIES AG - Strengthening innovative strength in the textile sector and intensifying brand partnerships**

TEXTILCOLOR AG, a leading provider of innovative textile chemicals, recently announced the acquisition of Sevelen-based Schoeller Technologies AG from Schoeller Textil AG. With this strategically important step, TEXTILCOLOR strengthens its position in the international market, expands its technology portfolio and creates new development capacities for future-oriented textile and chemical solutions. Schoeller Technologies AG will be integrated into the new "Brand Management" business unit of TEXTILCOLOR AG.

Schoeller Technologies AG was previously responsible for the global licensing and marketing of textile technologies developed by Schoeller Textil AG. With its international experience, strong network and deep application expertise in the field of functional and protective textiles, the company has established itself as a reliable partner to numerous brands. With the integration into TEXTILCOLOR AG, the marketing of these technologies will be continued – under a new brand identity of TEXTILCOLOR AG.

"The acquisition is a consistent milestone in our long-term growth strategy," explains Detlef Fischer, CEO of TEXTILCOLOR AG. "With Schoeller Technologies, we are not only gaining renowned technologies, but also a highly qualified team with unique expertise. We will continue to develop and refine the products manufactured to date in this partnership in order to continue to provide our customers with future-oriented and sustainable technologies."

Hans Kohn, former Chief Operating Officer of Schoeller Technologies AG and new Head of Brand Management, adds: "Both companies share a common vision: the development of high-performance, sustainable and innovative textile solutions for a responsible future. Existing partnerships and customer relationships of Schoeller Technologies AG will be continued in the usual high quality, the established partner network and strengthened by the expanded possibilities of TEXTILCOLOR."

### About TEXTILCOLOR AG

TEXTILCOLOR AG, based in Sevelen, is a globally active company specializing in the development, manufacture and distribution of high-quality chemical products for textile finishing. The company places particular emphasis on sustainability, quality and customer-orientated solutions.

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## bluesign® commemorates 25 Years as a Global Leader in Sustainable Textile Innovation

2025 marks a pivotal milestone for bluesign, the global authority in sustainable chemical and environmental management for the textile and fashion industry, as it celebrates 25 years of advancing cleaner, safer, and more responsible manufacturing practices across the global supply chain.

Since 2000, the Swiss-founded company has led the global charge towards a more sustainable future, developing a science-based, input stream management system to eliminate harmful substances at the source of textile production. Now spanning 900+ system partners across the globe, bluesign continues to deliver measurable reduction in environmental impact at an unprecedented scale. The company sets the global benchmark for responsible production with stringent criteria for chemical use, environmental performance, and resource efficiency, and serves as a one-stop resource for navigating ESG and upcoming legislation (CSDDD, CSR, ESPR, DPP etc), helping partners stay ahead of global compliance standards while embedding verified sustainability into every stage of production.

### Then & Now: A Mission That Endures

From its inception, bluesign's mission has remained clear: remove harmful chemicals from textile production from the beginning, and hence ensure safer working conditions, reduced harm on the environment, and deliver safer products for consumers. Over 25 years, this mission has only strengthened, evolving to meet global challenges like PFAS elimination, decarbonization, and circularity, while driving continuous improvement across the industry.

### Measurable Impact at Scale

The bluesign System enables its partners to make verified, measurable progress toward sustainability goals:

- Safer chemistry and materials: Over 28,000 chemical products and 70,000 textile materials carry the bluesign APPROVED status, signaling compliance with the strictest industry criteria and elimination of hazardous substances including CMRs and PFAS.
- Environmental Performance: Since 2019, bluesign System Partner manufacturers have collectively achieved the following improvements in environmental footprint:
- Global Reach: The bluesign network now includes over 900System Partners across the world, including chemical suppliers, textile mills, manufacturers, and brands.
- Worker & Consumer Safety: The bluesign System ensures safe conditions for workers and non-toxic products for consumers, built on a foundation of transparency and accountability.

### Why It Matters: A Holistic, Verified Approach

bluesign's unique value lies in its holistic system, which tracks and verifies impact at every stage - from chemical inputs to final product. The independent, science-based verification process goes beyond traditional certification to ensure ongoing compliance and continuous sustainability improvements, building trust with stakeholders and empowering the industry to move forward responsibly.

### Looking Ahead: The Next 25 Years

As the industry faces new challenges, including circularity and legislative shifts, bluesign continues advancing solutions that protect workers, consumers, and the environment, and remains committed to innovation and global impact.

As the industry faces new challenges, including due diligence, extended producer responsibility, and digital product passports, legislative shifts under the EU Green Deal, and rising expectations around circularity, bluesign remains committed to innovation and impact.

"bluesign was born out of a bold idea, that sustainability could be embedded into the DNA of product creation," said Daniel Rüfenacht, CEO

of bluesign technologies. "Twenty-five years later, we're proud to be a beacon of trust, innovation, and responsibility, and to partner with industry leaders worldwide in building a more sustainable future together."

To commemorate its 25th anniversary, bluesign will host a series of events, expert panels, and global activations celebrating the progress of its partners and educating the industry on the future of sustainable textiles.

**About bluesign** - bluesign helps the textile industry reduce its impact on people and the planet. Through a structured system for sustainable chemical management and responsible manufacturing, bluesign empowers brands, manufacturers, and chemical suppliers to create safer, more responsible products. By eliminating harmful substances at the start of production, bluesign ensures that textiles and accessories meet the highest safety and environmental standards. Since 2000, over 900 industry leaders have partnered with bluesign to drive meaningful change.

bluesign is part of SGS, the world's leading testing, inspection, and certification company.

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## Italian Textile Machinery: 2024 eventful by challenges and a light slowdown. Emphasize now on the strength of made in Italy

Enhancing the value of Made in Italy must be placed at the heart of the challenges facing the Italian textile machinery industry in the coming years. This was the message emphasized by Marco Salvade, President of ACIMIT, the Association of Italian Textile Machinery Manufacturers, during the General Assembly, held on Friday, 4 July, at the Ferrari Museum in Maranello. Presenting the latest industry figures, Salvade reported that in 2024 production fell by 8% compared to 2023, amounting to €2.1 billion, while exports declined by 9% (€1.8 billion)

These results are set against a fragile international scenario, with similar trends observed by the main competitors of Italian manufacturers too. China, Turkey, India, and the United States remained the primary export destinations for Italian textile machinery in 2024, despite a persistently weak demand. The first months of 2025 have opened under the same sign of uncertainty.

"U.S. protectionist policies and mounting geopolitical instability risk further slowing global investments in the textile and apparel sector," commented Salvade. "In particular, any escalation of the trade war would prove even more damaging to the entire supply chain."

The protection of authentic Made in Italy is regarded as an urgent priority by the Association. The experience of our workforce, creativity, and an unwavering drive for innovation remain the cornerstones of our success. "It is therefore essential," Salvade reaffirmed, "to defend and promote true Made in Italy—products designed and manufactured in Italy without compromise, distinguished by the quality and creativity for which we are renowned worldwide."

The Assembly also celebrated ACIMIT's 80th anniversary. "An important milestone that invites us to look back with pride and ahead with renewed passion and responsibility," the ACIMIT President emphasized. Trade tensions and regional conflicts have reshaped international equilibria, directly impacting corporate strategies. The Italian textile machinery industry, with its strong export orientation, is particularly exposed to these dynamics. While it continues to hold a leading position on the global stage, it must question whether its traditional formula, based on innovation and internationalization, remains fully adequate.

These themes were the focus of the roundtable discussion held during the public session of the Assembly, addressing three key topics for the future of the sector: internationalization, innovation, and sustainability. Participants agreed on the strategic importance of enhancing Made in Italy to boost the competitiveness of Italian companies. The future of Italy's textile machinery sector cannot forgo a continued drive for innovation, capable of delivering sustainable solutions with low environmental impact while also reducing production costs. The debate further highlighted the crucial need to cosolidate the presence in international markets, both mature and emerging, through initiatives that can strengthen the global leadership of Italian-made machinery.

**For further information, please contact:**
**Mauro Bodonelli**
**U/ficio Economico e Comunicozione ACIMIT**
**Tel. +39O2469361J**
**Mail: economics-press@ocimit.it** ■

# Report on Garment Tech Istanbul Exhibition, Showcasing Innovations in Garment Technologies, Hosted Thousands of Visitors from 82 Countries

Garment Tech Istanbul Garment, Embroidery Machines, Spare Parts and Sub-Industry Exhibition, Turkey's only and most comprehensive meeting point in the field of garment and ready-to-wear technologies, ended with intense participation. Bringing together leading brands of garment technologies and global buyers in Istanbul for 4 days, Garment Tech Istanbul Exhibition hosted 14,627 professional visitors from 82 countries. The exhibition, which attracted great visitor interest, became a platform where innovations in the sector were introduced and important business connections were made.

Garment Tech Istanbul Exhibition, organized by Teknik Fuarcılık Inc. in cooperation with KOMİD-Apparel Automation Machinery Manufacturers Association and Garment Machinery Exhibition Advisory Board, was held between June 25-28 at Istanbul Expo Center (IFM). The Garment Tech Istanbul Exhibition was attended by 292 companies and representatives from countries including Turkey, the USA, Japan, Germany, Italy, France, Canada, China, South Korea, Taiwan, Spain, India, the Netherlands, Greece, the Czech Republic, Singapore, Romania, Poland and North Macedonia. The exhibition was visited by 14,627 professionals from the garment industry, 2,486 of whom were from abroad and 12,141 of whom were from Turkey.

### Investors Met New Technologies at Garment Tech Istanbul Exhibition

The Garment Tech Istanbul Exhibition, where the latest solutions for all stages of garment production from sewing to embroidery, from cutting to ironing systems, from printing to packaging were exhibited, became the most comprehensive meeting point of the sector. Visitors had the opportunity to examine and experience on-site the latest technology sewing and embroidery machines, artificial intelligence-supported digital automation systems, energy-saving ironing-press solutions, automatic fabric cutting and sewing technologies, cloud-based control and inventory management solutions offering remote access, and environmentally friendly sustainable production machines. Global buyers who want to increase quality in production, reduce costs and gain competitive advantage had the opportunity to direct their investments thanks to the Garment Tech Istanbul Exhibition.

### Prepared the Ground for Global Collaborations

Garment Tech Istanbul Exhibition is not only a product promotion area; it has also become an international platform where commercial collaborations and strategic investments that shape the future of the sector are born. Exhibitor companies had the opportunity to strengthen their brand awareness and expand their export networks by bringing their latest technologies to the world stage. International investors, manufacturers, suppliers and brand representatives also established long-term business connections by holding one-on-one meetings for 4 days. Thanks to the machine sales and business partnerships established during the exhibition, the trade volume of both Turkey and the global ready-to-wear and garment sector was contributed.

### The Diversity of Participants and Visitors Attracted Attention

Turning its geopolitical location into an advantage, Istanbul once again demonstrated its mission of being an intercontinental connection center at this exhibition. The exhibition, which hosted 292 companies and company representatives, was visited by 14,627 industry professionals from all over the world, especially from Europe, the Middle East, North Africa, Turkic Republics, the Balkans and Asian countries, thanks to easy transportation and visa facilities. The countries where visitors to the Garment Tech Istanbul Exhibition came from are as follows: Afghanistan, Albania, Algeria, American Samoa, Angola, Australia, Austria, Azerbaijan, Bangladesh, Belarus, Bosnia and Herzegovina, Bulgaria, Burkina Faso, Cameroon, China, Croatia, Czech Republic, Denmark, Egypt, Estonia, Ethiopia, Finland, France, Gambia, Germany, Ghana, Greece, Hong Kong, India, Indonesia, Iran, Iraq, Italy, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Lebanon, Liberia, Malaysia, Mali, Mauritius, Mozambique, Netherlands, Morocco, Nigeria, North Macedonia, Pakistan, Poland, Portugal, Qatar, Romania, Russia, Saudi Arabia, Senegal, Serbia, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, South Africa, Spain, Sri Lanka, Sudan, Switzerland, Syria, Taiwan, Togo, Tokelau, Tunisia, Turkey, Turkmenistan, Turkish Republic of Northern Cyprus, Uganda, United Arab Emirates, United Kingdom, United States, Uzbekistan and Vietnam.

### Next Meeting in 2027

The next meeting of the Garment Tech Istanbul Exhibition, which brings together leading manufacturers of the garment and ready-to-wear sector, will be held in 2027.

**For further information, please contact:**
**Teknik Fuarcilik**
**T: +90 212 876 7506,**
**E: info@teknikfuarcilik.com**
**sales@garmenttech.com.tr**
**www.teknikfuarcilik.com** ❐

# TEXTILE EVENTS

## BCGTX 2025

### Bangladesh China Green Textile Expo

### 23-25, October 2025

Bangladesh is the second-largest exporter in Textile & Garments industry after China. With the sector growing at a 5.81% CAGR* and global demand surging for sustainable, eco-friendly apparel and production practices, the need for innovative green technologies and responsible sourcing has never been more critical.

Bangladesh China Green Textile Expo – BCGTX 2025 is your direct gateway. Powered by Chinese Enterprises Association in Bangladesh (CEAB) and with 85% of attendees being decision-makers, manufacturers, and buyers from Bangladesh & China ; this is where the future of sustainable textile business unfolds.

**Why should you be there?**

- First ever Bangladesh – China Bilateral Trade Expo.
- Focused on a very unique segment of textile industry – "Man Made Textile".
- Supported by the Embassy of the People's Republic of China in Bangladesh.
- Meet 8,000+ targeted buyers and industry professionals focused on sustainable textile solutions
- Get Guidance from CEAB (Chinese Enterprises Association in Bangladesh) for Chinese companies to enter the Bangladesh market.
- Convert in-person meetings into lasting partnerships and sustainable business growth

In today's global supply chain, sustainability isn't a choice—it's the new standard. And opportunity doesn't wait.

Bangladesh China Green Textile Expo – BCGTX 2025 (23-25 October 2025, Dhaka, Bangladesh) is more than just an exhibition—it's a powerful platform that strengthens the strategic partnership between Bangladesh and China in sustainable textile innovation. Join us in driving the next chapter of green manufacturing, where collaboration fuels progress and innovation shapes the future of the textile and garments industry across Asia and beyond.

**For further information, please contact:**
**Ms. Rokeya Nisha at nisha@savorbd.com,**
**Cell : +8801708813469** ❐

## ITMA ASIA + CITME Singapore 2025

### 28-31 October 2025, Singapore Expo

Grow Your Business with Cutting-edge Textile Technologies

ITMA ASIA + CITME, Singapore 2025 is the region's leading platform for sourcing the latest solutions, ranging from energy-efficient machinery to ecofriendly processes, across the entire textile and garment value chain.

A must-visit industry exhibition, it will help manufacturers scale up their production capabilities, be compliant with global sustainability demands, and stay competitive.

**Don't Miss This One-stop Technology Showcase**

ITMA ASIA + CITME, Singapore 2025 delivers a unique exhibition experience:

- See technology in action: Experience live machine demonstrations and evaluate performance and compatibility on the spot.
- Connect directly with technology manufacturers: Engage with leading manufacturers to get accurate answers and explore customised solutions.
- Source efficiently: Explore cost-effective and sustainable solutions clustered in 19 product sectors.

Plan your visit early. Save 50% when you purchase your badge now! Early bird rates for 1-day and 4-day visitor badges are S$25 and S$50 respectively are available till 28 September.

**Maximise Your Visit: Discover Singapore's Rich Cultural Heritage and Diversity**

Immerse yourself in Singapore's rich cultural heritage, where tradition meets modernity. The city is a vibrant tapestry of four key ethnic groups: Chinese, Malay, Indian, and Eurasian, each contributing to the country's diverse cultural landscape. From historic neighbourhoods like Chinatown and Little India to the Malay heritage of Kampong Glam, Singapore offers a fascinating blend of art, architecture, and cuisine. Explore stunning landmarks such as the National Museum and Gardens by the Bay and indulge in local delicacies like chicken rice and chilli crab.

Experience Singapore's cultural diversity and rich history while you are here for ITMA ASIA + CITME, Singapore 2025!

**Reading Insights**

Discover trending topics that are propelling the industry. Stay informed through our blogs covering innovative technologies, business strategies and expert opinions.

### Exclusive Updates

Receive exhibition updates along with the latest trends of the textile and garment industry.

**For further information, please contact:**
**info@itma.com** ❐

## First ITMA sustainability forum to feature European Commission keynote speaker

### Debuts on 30 October 2025 at the Singapore Expo

In response to mounting global regulations and the push for a circular economy, CEMATEX (the European Committee of Textile Machinery Manufacturers) is launching ITMA Sustainability Forum: Accelerating the Green Transition on 30 October at Singapore Expo.

The half-day forum is designed to help textile and garment manufacturers, particularly from South and Southeast Asia and the Middle East, navigate the European Union's evolving sustainability regulations, and access to green financing opportunities to support their transition.

Held alongside ITMA ASIA + CITME, Singapore 2025, the forum brings together EU policymakers, financial institutions, and industry leaders to facilitate cross-border dialogue and knowledge exchange.

Mr Alex Zucchi, President, CEMATEX, said: "Sustainability has become a global priority. The textile industry must act swiftly to modernise production in line with regulatory demands and growing consumer expectations. This forum provides a much-needed platform for manufacturers to better understand the EU's legislative landscape and the financing tools available for sustainable growth."

A key highlight of the forum will be the keynote presentation by Ms Kristin Schreiber, Director, European Commission DG GROW. She will provide a comprehensive overview of the EU's sustainability roadmap and upcoming regulations driving the shift towards circular textile production.

Ms Schreiber said: "South and Southeast Asia are vital players in the global textile value chain. Many producers in these regions export to the European market, and their ability to align with upcoming requirements will be critical to a successful and inclusive transition. I look forward to exchanging perspectives at this forum on how we can collaborate globally to build a more sustainable and resilient textile industry."

Under the EU Strategy for Sustainable and Circular Textiles, by 2030, all textiles placed on the EU market must be durable, recyclable, largely made from recycled fibres and free from hazardous substances. Manufacturers worldwide must act now to meet these requirements and remain competitive.

### Programme highlights

- **Shaping Sustainability: Responding to EU Policy Changes**
  Moderator: Ms Nicole van der Elst Desai, Founder, VDE Consultancy
  Speaker: Mr Robert van de Kerkhof, CEO, ReHubs
- **Profit Meets Purpose: Financing Sustainability**
  Moderator: Mr Brandon Courban, Senior Advisor (Climate), Openspace Ventures
  Speakers:
  - Dr Rene Van Berkel, Senior Circular Economy Expert, Switch Asia, EU Policy Support Component
  - Ms Iris Ng, Head, Emerging Business & Global Commercial Banking, OCBC Bank
  - Mr Michael Rattinger, Senior Climate Change Specialist, Asian Development Bank

Singapore Fashion Council, the official association for the textile and fashion industry in Singapore, is the programme partner of the forum organised by ITMA Services.

### Registration details

The forum is open only to ITMA ASIA + CITME, Singapore 2025 exhibitors and visitors. The delegate fee of S$35 includes two networking coffee breaks. To register, please visit www.itmaasiasingapore.com.

### About CEMATEX & ITMA

The European Committee of Textile Machinery Manufacturers (CEMATEX) comprises national textile machinery associations from Belgium, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland and the United Kingdom. It is the owner of ITMA and ITMA ASIA. Considered the 'Olympics' of textile machinery exhibitions, ITMA has a 74-year history of displaying the latest technology for every single work process of textile and garment making. It is held every four years in Europe.

### About ITMA Services

Headquartered in Brussels with a subsidiary in Singapore, ITMA Services is the appointed organiser of ITMA 2027 and future ITMA branded exhibitions. It is managed by professionals with extensive experience in organising ITMA and other major trade exhibitions around the world. It aims to maintain and expand ITMA's unique selling proposition and relevance to a global audience.

**For further information, please contact:**
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**Tel: +39 024693611**
**Email: secgen@cematex.com**

# TEXTILE EVENTS

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**Email: daphnepoon@itma.com**
**www.itma.com** ❐

## ITMA ASIA + CITME 2026

### 20-24 November 2026
### National Exhibition and Convention Center Shanghai, China

### Asia's Leading Business Platform for Textile Machinery

**Application for Stand Space Opens on 18 June 2025**

ITMA ASIA + CITME is the leading textile machinery exhibition that combines the strengths of the world-renowned ITMA brand and CITME. Since its inception in 2008, this leading exhibition in Asia has been instrumental in showcasing the latest technological advancements, driving industry developments and enhancing networking, thereby contributing to the growth of the textile industry around the world.

**Comprehensive Product Sectors**

The exhibition is categorised by product sectors to enable visitors to souce conveniently.

Spinning Winding Nonwovens Weaving Knitting Braiding Printing & Inks Composites Testing Recycling Colourants & Chemicals Services Embroidry Finishing Garment Making Logistics Software Plant Ops Equipment Research & Innovation

**For further information, please contact:**
**Beijing Textile Machinery International Exhibition Co., Ltd (BJITME)**
**Ph: _86 10 58222655/58222955/58220766**
**Email: itmasiacitme2@bjitme.com**
**www.itmaasia.com** ❐

## Techtextil

### 21-24 April 2026, Frankfurt

### Chance. The most important guest at the fair

Techtextil & Texprocess will be held from April 21-24, 2026. Industry experts from all over the world are waiting to experience this important business platform after 2 years. We are certain your members are also eager to explore business opportunities in such a large industry forum. The time is right to fill in your intent to exhibit in TECHTEXTIL.

Since space allocations is based on product categories in the designated halls it is advisable to assess space requirement as per individual member's product competency. Refer to the listing below, click on the link for the fairground plan https://techtextil.messefrankfurt.com/frankfurt/en/planning-preparation/exhibition-ground.html.

For a recap on the results of the last edition held in April 2024, click >> https://techtextil.messefrankfurt.com/frankfurt/en/profile.html#figures ,with 38,000 visitors from 102 countries and 1,700 exhibitors from 53 countries, Techtextil and Texprocess have grown in terms of exhibitor numbers and recorded a 29 percent increase in visitor numbers, out of which 60 Indian companies participated. Click the link for exhibitors list of 2024 https://techtextil.messefrankfurt.com/frankfurt/en/exhibitor-search.html.

We have MATEXIL Council exhibiting for the Techtextil Frankfurt 2026. Incase if you want to participate through them please let us know.

**Techtextil :**

- Hall : 9.1 , 9.0 Fibres (man-made/chemical fibres ,natural and bio-based fibres & materials), yarns
- Hall : 9.0 Performance Apparel Textiles, Textile Chemicals and Dyes
- Hall : 11.0 Coated textiles, composites, Bondtec (surface and bonding techniques)
- Hall : 11.1 Textile materials: Functional apparel textiles, wovens, laid webs, braidings, knitted fabrics
- Hall : 12.0 Textile Production, Technology & Processes
- Hall : 12.1 Textile Materials, Nonwovens, wovens, laid webs, braidings, knitted fabrics

Techtextil & Texprocess will hold comprehensive events, including a variety of digital services to expand reach geographically and amongst the visiting companies. VAT not payable upon submission of PAN / TAN details

| Type of stand (raw space) construction not included | Stand space (€ / sqm) |
|---|---|
| 1 - side open | 288,00 € / sqm* |
| 2 - side open | 302,00 € / sqm* |
| 3 - side open | 317,00 € / sqm* |
| 4 - side open | 331,00 € / sqm* |

| *Prices are per square meter plus: | |
|---|---|
| Environmental fee | 4.40 € / sqm |
| AUMA fee | 0.60 € / sqm |
| Obligatory media package per company plus statutory VAT | 985.00 € |

**Other cost heads to be considered for your budgeting**

1. Stand construction
2. Pre and daily cleaning
3. Electricity in exhibitors' stand
4. Disposal of waste material after show
5. Onsite promotion

Completely equipped stands in sizes 9, 12, 16, 20 and 24 sqm- Package details is available on the Techtextil and Texprocess websites click on the link below

https://techtextil.messefrankfurt.com/frankfurt/en/planning-preparation/exhibitors/stand-design.html

**How to reserve your stand booth:**

- Send us the completed non-binding declaration of intention to exhibit.
- We will then mail you an individual stand space proposal.
- If you are happy with your location, send us your confirmation. We do not guarantee space allocation in case of any delayed decision.
- We will then confirm your participation.

**Techtextil Registration:**

https://techtextil.messefrankfurt.com/frankfurt/en/planning-preparation/intention-exhibit.html

**Techtextil Exhibitor Checklist:**

https://techtextil.messefrankfurt.com/frankfurt/en/planning-preparation/exhibitors.html

**Techtextil Buyer List:**

http://marketing-messe-india.com/2025/Outbound/Techtextil_PPT.pdf

**Techtextil PPT :**

http://marketing-messe-india.com/2025/Outbound/TT_Buyersheet.pdf

It would be pleased to be part of your mission to explore emerging opportunities for man-made textiles in the international markets via Techtextil Frankfurt, the largest show for the industrial sector. Should you need any further information do not hesitate to contact the undersigned.

**For further information, please contact:**
**Dipali Shah, Project Head (Techtextil & Texprocess) – International Sales**
**Messe Frankfurt Trade Fairs India Pvt Ltd, Gala Impecca, 5th Floor, Andheri-Kurla Road, Chakala, Andheri (E), Mumbai– 400093**
**Tel: +91 22 6144 5991 ; Mob: 9820315974**
**dipali.shah@india.messefrankfurt.com** ❐

## GENTEXH 2026

### Global Exhibition on Nonwoven & Hygiene Technology

Building on the remarkable success of GENTEXH 2025, we're excited to invite you to participate in GENTEXH 2026. This premier event offers unparalleled opportunities for exhibitors and delegates in the Nonwoven and Hygiene Technology sectors.

### Why stake holders are willing to participate

**Exhibitors:**

- Showcase your products and innovations to an international audience.
- Connect directly with potential buyers and partners from sectors such as hygiene, medical, automotive, agriculture, and more.
- Strengthen your market position and brand visibility in the rapidly growing nonwoven industry.

**Delegates:**

- Discover groundbreaking technologies and innovative solutions.
- Network with global industry leaders and decision-makers.
- Gain valuable insights through expert-led conferences and interactive sessions.

**GENTEXH 2025 Highlights:**

- Over 200 exhibitors from more than 10 countries showcased cutting-edge technologies and products.
- The event attracted a diverse audience, including manufacturers, suppliers, distributors, and end-users.
- Insightful sessions led by industry experts on the latest trends and innovations in nonwoven technology.
- Extensive networking opportunities facilitated meaningful connections across various sectors.

**Event Details:**

**Dates:** March 11–13, 2026

**Venue:** Saigon Exhibition and Convention Center (SECC), Ho Chi Minh City, Vietnam

Don't miss your chance to be part of the future of the nonwoven and hygiene industry.

**For further information, please contact:**
**Visit: www.gentexh.com**
**Email: mktg@gentexh.com**
**Let's innovate and grow together at GENTEXH 2026!** ■

4S Sustainable Smart Solutions for Spinning Success

LMW®

# LC636 SX

## Driving Productivity, Quality & Sustainability through Innovation


Higher Efficiency and Productivity up to 250 Kg/hr

Impressive active carding area between cylinder and moving flats

Higher realisation of up to 1% in raw materials and superior quality

Power savings of up to 15%

**INNOVATING VERSATILITY, RELIABILITY, AND SUSTAINABILITY ACROSS APPLICATIONS**

CARD SLIVER SYSTEM

# AMG Spintex and LMW: Spinning Open-End Success through technology and trust

**AMG Spintex LLP**, established in 2022, is a fast-growing manufacturer of open-end yarn, catering to both domestic and international markets. Located in **Samana, Punjab**, the unit specializes in producing high-grade open-end yarn using state-of-the-art technology and efficient processes. The company's commitment to consistent quality, sustainability, and profitability has been significantly strengthened through its strategic association with **LMW** in textile machinery known for innovation, reliability, and customer-centric solutions.

(From left to right – Mr. Varun Jain, Director – Sales, AMG Spintex LLP, Mr. Ashwani Verma, Director – Operations, AMG Spintex LLP, Mr. Samkit Jain, Partner, AMG Spintex LLP)

*"Our association with LMW began in 2022 when we finalized the order. As we were new to the industry, we received continuous guidance and support from the LMW team throughout the entire project execution — and even beyond." - Mr. Varun Jain, Director – Sales, AMG Spintex LLP*

## Strategic Collaboration with LMW: A Path to Excellence

LMW has played a crucial role in the growth story of AMG Spintex LLP, by providing Smart Machinery, which are Blowroom, Card & Draw Frames. These machines have delivered unparalleled performance, enabling the company to achieve remarkable efficiency and quality.

AMG Spintex LLP operates at a production capacity of 20 tons per day with a spindleage of 3,500 rotors, running for 6s to 30s Ne count.

| Department | Model | Plant Configuration |
|---|---|---|
| LMW Blowroom | LA23 | 1 |
| LMW Card | LC363 | 11 |
| LMW Draw Frame | LDF3 S | 8 |
| Open End Yarn | | |

*"Our project was taken care of wonderfully by the LMW team during execution and even after the operations began. Their team stayed on-site until the unit achieved the desired and benchmark output" - Mr. Ashwani Verma, Director – Operations, AMG Spintex LLP*

## LMW's Technology Edge: What Made the Difference


In a performance comparison between LMW's Card LC363 and Other Make Card, both operating

## AMG Spintex and LMW: Spinning Open-End Success through technology and trust

at the same delivery hank of 0.09 Ne and a delivery speed of 300 m/min for 16s Ne count — and delivering an equal production rate of 118 kg/hr.

The comparison focused on three key parameters:

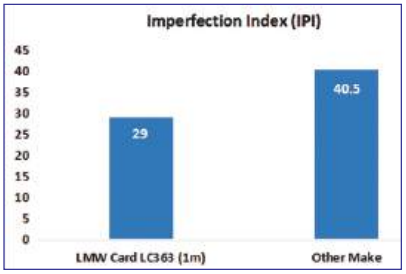
(a) Imperfection Index (IPI)

(b) Count Strength Product (CSP)

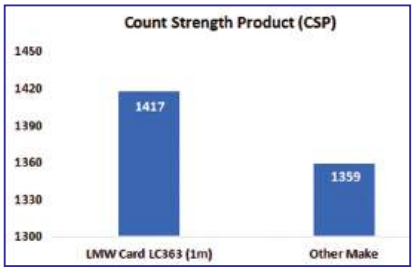
(c) Power Consumption

It recorded an Imperfection Index (IPI) of 29 on LMW's Card LC363, which is marked better than the 40.5 IPI observed in the Other Make Card, indicating 28% better yarn quality.

When it comes to Count Strength Product (CSP), LMW's Card LC363 delivered a CSP of 1417, which is 5% higher than the Other Make Card.

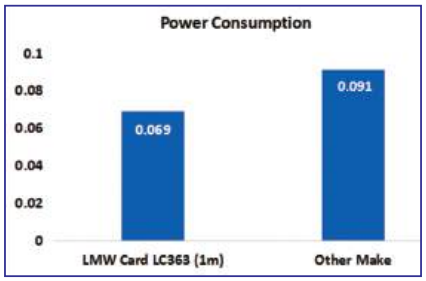



28% better IPI on LMW Card LC363




5% CSP better on Card LC363

LMW's Card LC363 offered an impressive 32% reduction in power consumption, making it not only a technically superior choice but also a highly energy-efficient and cost-effective solution for modern spinning mills.




32% less power consumption on Card LC363

*"The main reason for choosing LMW is their state-of-the-art technology, their ethical business and strong services. We are like partner in every aspect of project both during execution and after running it" - Mr. Samkit Jain, Partner, AMG Spintex LLP*

Backed by 24x7 after-sales support, LMW ensures that AMG Spintex LLP operates with minimal downtime and maximum efficiency, emerging as a backbone for their OE spinning operations. The company exports its products to China, Bangladesh, Thailand, and Guatemala.

### A Promising Future, Backed by Partnership

AMG Spintex LLP is set for further expansion in the spinning industry. Their partnership with **LMW** has laid a strong foundation — not just in machinery, but in **efficiency, quality, and success**.

This is just the beginning. As AMG Spintex LLP looks toward scaling new heights, LMW remains a reliable and strategic enabler in their journey.

Scan here to visit our website

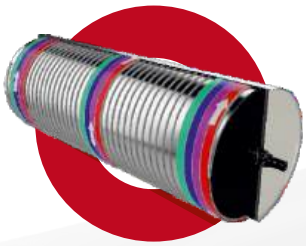
**For further information, please contact**
**LMW**
**Periyanaickenpalayam, Coimbatore-641020**
**Phone : +91 73976 88873**
**Email: info@lmwtmd.com**
**Website: http://www.lmwtmd.com/** ■

# QUALITY
## THAT'S INSPIRES

Cylinder Drying Range Machine

Heating Cylinder/ Can

Jacketed Cooling/ Heating Cylinder



Jacketed Cooling Cylinder

Guide Rollers

Size Cooking Vessel

Size Storage Vessel

Size Premixing Vessel

Plot no:- 3703/E, Phase -4, behind new Nirma G.I.D.C,
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# Delivering Qualitative Excellence

GAYATRI

Our products are specifically engineered and designed for meeting the needs of spinning industry, with our expertise and continued in quality, we are providing leading solutions allowing you to increase efficiency and gain competitive advantage.

Cot Grinding Machine
Model GCGHY-200-25-AF

Cot Grinding Machine
Model-GCGHY-200-AF

## Other Range of Products

- Eccentricity & taper tester machine
- Ultra violet treatment machine
- Top roller greasing machine (Vertical)
- Top roller greasing machine (Automatic)
- Top roller de - greasing machine
- Clearer roller cleaning machine
- Fluted roller truing machine
- Cot mounting machine (Hand/Pneumatic)

Spindle Lubricating
Machine

Hydraulic Cots Mounting &
De-Mounting Machine

Auto Feeder with Flocked Clearer
Roller Cleaning Machine

Flocked Clearer Roller
Cleaning Machine

GAYATRI

## GAYATRI TEXTILE MACHINES

17, Harshad Ind. Estate, Margha Farm Compound, B/h. L.B.S. Stadium, Bapunagar,
Ahmedabad - 380024. Gujarat ( India ). • Mo.: +91 98 9808 1503 • Email: gayatrirrp@gmail.com,
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sima Texfair 2026

15th Expo

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March 6-9, 2026

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**Step 1** Visit http://www.simatexfair.org/book-your-stall/
(OR) Scan the QR Code on the right side

**Step 2** Download the floor plan

**Step 3** Email your stall requirements to texfair@simamills.org
by mentioning the :Stall No & Area in Sq.mtrs

** Stalls marked in red are booked*

Website QR Code

Note: Confirmation of stall no(s). is subject to availability and will be intimated through e-mail.

**The Southern India Mills' Association**
Coimbatore, Tamil Nadu, INDIA
Ph: 0422 - 4225333 E-mail: texfair@simamills.org
Website: www.simatexfair.org

sima

## Trützschler Group

### Labour shortage problem receded in Vietnam: Tra Ly Hung Yen Spinning

It's hard to find skilled operators for spinning mills in Vietnam. Rapid industrialization is creating competition for young talents and many workers choose roles in other industries. Customer Tra Ly Hung Yen has found a partner in Trützschler to help mitigate the effects of this labor shortage and enable successful operations.

Traditionally, yarn manufacturers need many experienced and qualified workers. However, it is difficult to attract and retain these operators. In addition, raw material fluctuations add extra challenges for all spinners. In order to produce yarn with consistent quality, it is necessary to make precise adjustments to the processing system – and this requires trained employees. A major headache for businesses in quality-driven markets like Vietnam!

From left to right: Benjamin Mund (Regional Sales Manager at Trützschler), Do Thi Lan Phuong (Director of Tra Ly), Nguyen Van Trai (Equipment Coordinator at Tra Ly), Nguyen Van Binh (Trützschler Technician), Do Manh Nhan (Mill Manager) and Dinh Van Loi (Trützschler Sales Agent).

Tra Ly is one of those businesses. The company's success is built on a longstanding reputation for quality, so labor shortages generated a potential threat to its future. The family-owned company mainly produces carded and combed cotton (Ne 20 to Ne 40) through standard and compact spinning methods. It has a production capacity of 60 tons per day, with half of that output exported to China, Pakistan or Bangladesh. To find a solution to its labor shortage, the Tra Ly team contacted its trusted partners at Trützschler.

The answer from Trützschler: Highly automated, self-optimizing machinery that helps to maintain consistent quality – even when processing raw materials of varying qualities. This reduces the need for manual intervention. As Do Thi Lan Phuong, Director of Tra Ly, points out: "Innovations from Trützschler offer efficient handling that frees up time for our employees. In this way, we are able to cope with labor shortages. These machines enable higher productivity, improved sliver evenness and more energy-efficient manufacturing. And working together with Trützschler is always a great experience because of their deep expertise, can-do attitude and positive energy."

Traly operates numerous Trützschler carding machines. Recently, the TC 19i completed Tra Ly's portfolio.

#### Automatized and optimized

Tra Ly now operates the following advanced technologies from Trützschler:

- **T-SCAN TS-T5: High-quality foreign part separation**

This foreign part separator uses state-of-the-art sensors and image-processing technology to detect foreign parts like stems, leaf fragments or other waste – and then automatically ejects them to minimize fiber loss. The highly efficient machine is also easy to clean and maintain, even when production is running.

- **The intelligent card TC 19i with T-GO**

Tra Ly is also benefiting from the TC 19i with T-GO, which is the world's only proven automatic gap optimizer for carding machines. It increases quality and flexibility by self-adjusting to ensure the best possible carding gap settings in real time, even when raw materials or other production conditions fluctuate.

- **Autoleveller Draw Frame TD-10**

Automated functions like AUTO DRAFT and OPTI SET enable this draw frame to ensure excellent yarn quality by self-optimizing the break draft and drafting point in real time. These innovations help

machine operators to adapt settings for various raw material types.

- **Boosting productivity: The 12-head comber TCO 21XL**

This machine increases productivity by about 50% because it operates 12 heads instead of a typical eight head setup, while delivering the same excellent quality. Features like COUNT MONITORING perform automatic checks on sliver count variations from a given limit, thus contributing to consistent quality.


Trützschler's technical experts are helping Tra Ly to improve its production processes and settings.

### Local expertise and fast support

Trützschler's local team of technical experts, along with its well-stocked spare parts inventory and repair facilities in Vietnam, ensure that Tra Ly maintains high levels of productivity with reliable quality. This expert team provides fast responses based on indepth knowledge. As a result, Tra Ly can rely on outstanding customer service – and downtime is kept to a minimum. The team from Trützschler is even available to suggest process improvements and potential digital optimizations.

### Fit for the future

Tra Ly recently installed My Mill, Trützschler's mill monitoring system. Based on real-time data from My Mill, Trützschler experts can conduct digital audits to provide on-site guidance, training and troubleshooting. Trützschler is looking forward to continuing to support Tra Ly. The Vietnamese company is excited about the ongoing collaboration, too. "Working together with Trützschler is always a great experience because of their deep expertise, can-do attitude, and positive energy," says Do Thi Lan Phuong, Director of Tra Ly.

### About the Trützschler Group:

The Trützschler Group SE is a German textile machinery manufacturer headquartered in Mönchengladbach, Germany. The company is divided into three business units: Spinning, Nonwovens and Card Clothing. Trützschler Spinning is the global technology and market leader in spinning preparation in the cotton and man-made fiber sector. With TRUECYCLED, Trützschler Spinning offers a complete solution for state-of-the-art recycling of textile waste – from cutting and tearing textile waste through to carding and drawing secondary fibers, resulting in high-quality, sustainable yarns. Trützschler Card Clothing is the global market leader in the production of high-performance card clothing for cards and roller cards. Trützschler Nonwovens is a leading supplier of complete production lines and machinery for needle-punched, hydroentangled (spunlaced), through-air and chemical bonded nonwovens. Trützschler machines, installations and accessories are produced and developed in nine locations worldwide. This includes four factories in Germany (Dülmen, Egelsbach, Mönchengladbach, Neubulach), as well as sites in China (Jiaxing and Shanghai), India (Sanand), the USA (Charlotte) and Brazil (Curitiba). Local service companies in Türkiye, Mexico, Uzbekistan and Vietnam and local service teams in Pakistan, Bangladesh and Indonesia provide customer proximity in key regions for the textile processing industry. For more information visit: www.truetzschler.com

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## Mimaki's Europe B.V.

### Highlight on Mimaki's Commitment to Greener Print Production

*By Marc Verbeem, Supervisor Product Management, Mimaki Europe*

The print industry faces significant challenges in becoming sustainable, especially given its integral role in our daily lives. Each part of the industry has its own flaws that hinder environmental responsibility. From the chemical hazards of certain inks to the energy-intensive nature of printing technology, these issues collectively highlight that a shift towards more sustainable practices is urgently needed to reduce the industry's environmental impact.

## SCIENCE IN INDUSTRY

The textile industry has been particularly under scrutiny when it comes to unsustainable production practises, particularly regarding water use. According to research by the UN Trade and Development, the textile and fashion industry is the second-largest consumer of water,accounting for about 20% of global wastewater. The dyeing and finishing processes with the industry require approximately 93 billion cubic meters of water annually – enough water for five million people - while generating 2 to 8% of the world's global greenhouse gas emissions . It is estimated that fashion production comprises 10% of total global carbon emissions, as much as the emissions generated by the European Union.

Marc Verbeem,
Supervisor Product Management,
Mimaki Europe

And beyond the production itself, the microplastics and harmful chemicals in some inksend up in our oceans and natural surroundings, increasing the detrimental environmental impact of print. Addressing these challenges is crucial for reducing the industry's environmental footprint and ensuring a greener future.

### Transforming Print for a Sustainable Future

Making the switch to digital printing alone is already much more environmentally friendly than conventional printing methods. This type of printing enables on-demand, personalised prints, with no inventory or storage space required, reducing waste of all types.

While digital printing is quickly becoming the norm and is often the clear choice to support changing brand and consumer demands, manufacturers and print service providers need to look beyond the shift to digital and further innovate how to create a more environmental-conscious printing ecosystem.

As a market leader in LED-UVtechnology, Mimaki's UJF, JFX and UJV printers tackle energy consumption concerns with theuseof ultra-violet light to instantly dry or cure the ink as it is being distributed across the substrate. According to Mimaki's own research, the company's UV roll-to-roll printers consume 5 times less power compared to solvent printers and 8 times less power compared to resin printers on the market. This is primarily due to the power consumption and heat generation of LED lights being remarkably lower than those of metal halide lamps, traditionally used to dry inks.

Application created with one of Mimaki'sLED-UV printer, theUCJV330-160

It's important to look to the small changes as well as the major technological innovations, for example

with inks. The majority of Mimaki's printer inks used with sign graphic and industrial printers have achieved the GREENGUARD Gold certification and last year, 84.7% of the company's ink sales for these two markets were GREENGUARD Gold certified. For textiles, Mimaki offers a range of water-based pigment inks suitable for both direct-to-fabric and transfer printing. Many of these inks hold certifications such as OEKO-TEX® ECO PASSPORT or bluesign® APPROVED, ensuring compliance with safety and environmental standards in line with Mimaki's sustainability pledges.

Even the packaging has been adapted. The popular SS21 ink now comes in a carton cartridge, and with this change, Mimaki can reduce annual plastic use by 29.2 tonnes, which equates to a reduction of 38 tonnes in carbon emissions. This move to carton will enable a 68% reduction in plastic use and is already being adopted in Europe following its success in Japan.

**Innovations with a Common Thread – Sustainable Textile Production**

Noting the concerns within textile printing, Mimaki focused on developing sustainable textile printing technologies, which tackle wastewater, energy consumption, while increasing efficiencies, and maintaining customers' profitability.

The revised carbon ink cartridge allows for a 68% reduction in plastic use

Recently introduced to the market, TRAPIS (Transfer Pigment System) is more sustainable than both analogue and digital textile dye printing methods with zero water consumption, aside from any used in the production of the material,and substantially lower CO2 emissions. By simplifying the textile printing workflow to require only a large-format printer and a high-pressure calender, it eliminates the need for equipment like steaming or washing machines, making small-scale textile production more feasible and accessible locally.

The printing process involves three key elements: the Textile Pigment Ink, the Printing System and the Pigment Transfer paper, Mimaki Texcol.

Mimaki Texcol paper allows for transferring a digital print onto a wide range of materials, including natural fibres. The design is initially printed onto the paper using a slightly updated versionof Mimaki TS330-1600 printer and Mimaki'sbluesign® APPROVED pigment inks developed for the process. In the final stage, the Mimaki Texcol paper undergoes a one-step waterless process, through a calender machine onto the textile of choice.

TRAPIS provides a simplified workflow with significantly reduced water consumption

Mimaki's commitment to sustainability goes beyond the development of the company's core solution. In an attempt to tackle one of the most pressing issues in the fashion and textile space, the company debuted a new unique concept set to revolutionise the reuse of coloured polyester textiles – the Neo-Chromato Process.

The growing awareness of sustainability has led to a significant disposal issue within the textile industry, with polyester textiles accounting for approximately 60% of 92 million tonnes of wasted textile materials worldwide . Of this enormous amount of polyester waste, currently around only 15% is recycled. Mimaki's Neo-Chromato Process tackles this issue head on by utilizing a discolouring technology for dye sublimation inks. By decolourising polyester textiles that have been dyed, this innovative process allows materials to be re-printed or dyed immediately, contributing to a smaller circular economy. In fact, reused polyester can be repeatedly treated with the Neo-Chromato Process, which extends the lifecycle of materials.

**Working Towards a Greener Future**

While the printing industry is taking on the responsibility of creating a more environmentally friendly landscape, there is always more that can be done to further this progress. Innovative and exciting developments in technology are continuously

breaking new ground, but there is still a way to go to see them being implemented globally.

While legal regulations are demanding more of manufacturers when it comes to their sustainability efforts, this shouldn't be the driving force behind the need for change. It is important for printing companies to be both ambitious and strategic with the implementation of eco-friendly products and practices, while remaining transparent and articulating this clearly with all the stakeholders involved.

### About Mimaki

Mimaki is a leading manufacturer of wide-format inkjet printers and cutting machines for the sign/graphics, industrial, textile/apparel and 3D markets. Mimaki develops the complete product range for each group; hardware, software and the associated consumable items, such as inks and cutting blades. Mimaki excels in offering innovative, high quality and high reliability products, based upon its aqueous, latex, solvent and UV-curable inkjet technology. In order to meet a wide range of applications in the market, Mimaki pursues the development of advanced on-demand digital printing solutions. Mimaki Engineering Co. Ltd., (President: Kazuaki Ikeda) Nagano (Japan), is publicly listed on the Tokyo Stock Exchange, Inc.

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## Oerlikon

### Emphasize on the entire process chain in nonwovens manufacturing

In an exclusive event with hand-picked customers from the nonwovens industry, Oerlikon Neumag and eight partner companies provided information on process innovations along the nonwovens value chain on July 2 and 3 of this year.

Around 50 guests took advantage of the opportunity to attend numerous presentations and see various spunbond and meltblown technologies in action at the Neumünster Technology Center. In addition to the patented and (multiple) award-winning solution for producing charged meltblown nonwovens using water atomization, demonstrated using the example of a process with PLA, the spunbond processes for producing BiCo PET / CoPET and PP geotextiles were also presented.

Hands-on technology: During the event, visitors were able to experience various nonwovens processes in operation at the Oerlikon Neumag Technical Center.

### Presentations along the process chain

Eight partner companies from all stages of the nonwovens manufacturing process made an indispensable contribution: Weko presented its solutions for spin finish applications. Dilo presented machine concepts and innovations in the field of needling technology. Brückner provided information on thermo processing lines for finishing nonwovens, while Mahlo focused on online measurement systems. Oerlikon Barmag provided an insight into its diverse range of pumps, which are also indispensable in the nonwoven process. In addition to the presentation on the Oerlikon Nonwoven Meltblown system, Total Energies Corbion contributed to the topic of sustainable raw materials with a presentation on Luminy® PLA.

Somatec rounded off the event with a presentation on the world of winding, and Comerio Ercole showcased innovations in the field of calender solutions. “A successful event here in Neumünster at our nonwovens competence center,” agreed Andreas Frisch and Ingo Mählmann, who are responsible for the business unit. The overall approach and the various process demonstrations in the technical center were well received.


Together with its partners, Oerlikon Neumag presented the entire nonwovens value chain over two days.

“We don't want to deliver isolated solutions, but rather solutions that are coordinated with our customers and the upstream and downstream process stages,” said Andreas Frisch, explaining the format. He added: “Experiencing the technology live and in color is extremely helpful for understanding our solutions.”

### About Barmag

Since 2025, the Swiss Oerlikon Group has continued its manmade fiber business as a subsidiary under the traditional name Barmag. This includes the established product brands Oerlikon Barmag, Oerlikon Neumag and Oerlikon Nonwoven. As a future-oriented company, research and development are fo-cused on energy efficiency and sustainable technologies (e-save).

Barmag is one of the leading suppliers of filament spinning systems for manmade fibers, texturing ma-chines, BCF systems, staple fiber systems and solutions for the production of nonwovens. Together with its range of polycondensation and extrusion systems and their key components, Barmag thus covers the entire manufacturing process - from monomer to textured yarn - and supports it with customer-oriented engineering services. The product portfolio is rounded off by automation

and digitalization so-lutions. In addition, Barmag offers high-precision gear metering pumps for the textile industry and other sectors, including the automotive, chemical and paint industries.

The main markets for the Barmag product portfolio are in Asia, particularly in China, India, Turkey and the USA. Barmag employs around 2,500 people worldwide and is represented by production, sales and service organizations in 120 countries. In the research and development centers in Remscheid, Neu-münster (Germany) and Suzhou (China), highly qualified engineers, technologists and technicians de-velop innovative and technologically leading products for the world of tomorrow.

Oerlikon (SIX: OERL) is a global leader in surface technologies. Headquartered in Pfäffikon, Switzer-land, the Group has over 12,000 employees at 199 locations in 38 countries with sales of CHF 2.4 billion in 2024.

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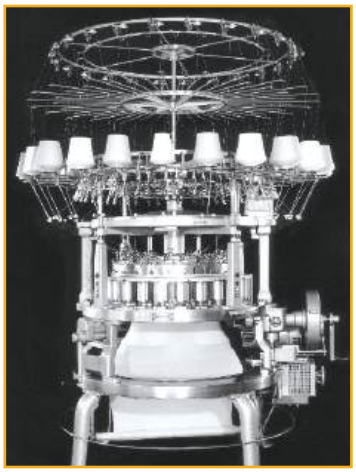
## Mayer & Cie.

### Mayer & Cie. marks the occasion of Anniversary: 120 Years of Textile Machinery from Albstadt

Mayer & Cie will celebrate its 120th anniversary. The company, now in its fourth generation of family ownership, specializes in the production and sale of circular knitting and braiding machines. Almost all its products are exported, and the green MCT logo on the machines is recognized by knitters around the world as a symbol of precision, durability, and reliability.

Time and again, Mayer & Cie.'s inventive developers have delivered key technical milestones. Today, digital solutions are increasingly important: a circular knitting machine is expected not only to deliver production data to the cloud but also to be remotely maintained. In the field of braiding machines, Mayer & Cie. now offers 48-carrier models, enabling the production of even larger hose diameters.

"We are truly proud to be celebrating this anniversary," says Benjamin Mayer, Managing Partner of Mayer & Cie. "120 years of a family business is far from a given: statistics show that only about 12 percent of family-owned companies make it past three generations – and we are already in our fourth," he adds with a smile. "This proves that we've consistently understood market demands and met them with technological innovation." Mayer & Cie. has frequently set industry standards, such as the introduction of electronic pattern control or the pioneering Relanit technology.



A circular knitting machine:

### Challenging times for textile machinery manufacturing

Despite the joy of the anniversary, current global conditions cast a shadow over the festive year. The order situation in Germany's textile machinery industry remains difficult, and a turnaround is not yet in sight. "We've lived through many crises since 1905," says Mayer. "But the one we're facing today is by far the most challenging."

A new MV4-3.2 QCe waiting to get packed and shipped to the customer

As a result, the company expects significantly lower volumes through 2026 than at full capacity.

It has cut running costs significantly, and the workforce has agreed to forego bonuses. Providing a reliable outlook remains difficult: "As a company, we are well positioned, with answers to market needs and modern production processes. This has also been confirmed by third parties. But how the global economy will develop is impossible to predict."

### Latest milestone: connecting circular knitting machines to the internet

A major recent development is a new machine control system that makes Mayer & Cie.'s circular knitting machines "IoT-ready." This means they are technically equipped to connect with and be integrated into the Internet of Things. The new control system allows Mayer & Cie. customers around the world to access knitlink, a digital platform offering various apps for circular knitting machines.

A new visual monitoring tool has also been introduced – a practical solution, given that errors in fabric can quickly become costly: a circular knitting machine produces around 2.5 meters of fabric per minute.

Welcome to the modern world of circular knitting machines: They can now be controlled via tablet

Another focus lies on upgrade kits. These allow customers to keep their machine park up to date without having to invest in entirely new machines. "This supports machine longevity and sustainability," explains Benjamin Mayer. "It also increases investment security for our customers."

### Braiding machine with 48 carriers

Just before Christmas 2024, Mayer & Cie. delivered its first braiding machine equipped with 48 carriers (bobbin holders). The second model with this configuration is currently under development. Customers benefit from a larger inner hose diameter, reduced setup times, and the same high bobbin capacity – whether processing yarn or wire.

Mayer & Cie. braiding machines are used to manufacture reinforcement braids, such as those found in high-pressure hoses used in industries like manufacturing and mining.

First and second generation at the table together: Johannes Mayer (left) and his son Emil Mayer (right).

Since 2019, braiding machine production has been located at the company's headquarters in Albstadt. One reason for relocating production – which had been handled by a U.S. subsidiary between 1977 and 2019 – was to improve research and development. "That strategy has paid off," says Benjamin Mayer. "Our innovations now offer our customers greater productivity."

Rainer and Peter Mayer in the 1970s: They represented the third generation of owners; Rainer Mayer joined the company in 1972 at the age of 24. His older brother Peter had been working at the company since 1961.

### Technological milestones

Innovation and technical advancement have long defined Mayer & Cie. Historically, milestones were purely mechanical: in 1938, the company launched its first proprietary circular knitting machine, based on its own patents. Prior to that, it had focused on manufacturing warp knitting machines, known

as round frames. But as circular knitting machines proved faster and more efficient, production of warp knitting machines ceased entirely in 1958.

Fourth generation: Marcus, Sebastian und Benjamin Mayer (from left to right). Sebastian Mayer is spart of the management team jointly led by Benjamin und Marcus Mayer.

In the mid-1960s, Mayer & Cie. released a machine that became known as "every knitter's favorite": the OVJA 36, with innovative pattern control and suitable for especially fine fabrics. Customers were willing to wait up to three years for delivery, and order confirmations became objects of speculation. With around 7,000 units sold, it made the company world-famous in the industry.

In the late 1980s, Mayer & Cie.'s Relanit series continued this success story. With a new knitting technique, these machines delivered excellent fabric quality even when using substandard yarn.

Another technological revolution was the introduction of electronic pattern control, presented by Mayer & Cie. at a leading industry trade show in the 1970s. What used to take a full day of manual work could now be done with the press of a button.

### Four generations of Mayer family leadership

The Mayer & Cie. story is also the story of the people who have led the company. Johannes Mayer, co-founder of the United Mechanical Workshops Mayer & Cie., was a hands-on tinkerer with a passion for detail. He played a major role

in developing the company's first circular knitting machines starting in 1935. When he passed away in 1958, he was remembered as the "first servant of his work."

His son, Emil Mayer, joined the company as an apprentice in 1921. As an engineer, he later drove the development of proprietary circular knitting machines and built up the company's international business after World War II. He was posthumously named an honorary citizen of Tailfingen for founding a textile school.

Emil's son, Peter Mayer, joined the company in 1961 and took over leadership in 1971 alongside his brother Rainer. He further expanded internationalization, was an early advocate of electronics, and shaped the market with the Relanit machine starting in 1987. He retired in 2003.

Rainer Mayer joined Mayer & Cie. in 1972 and co-managed the company from 1973. He focused on diversification, expanded business with IBM, and successfully led the company through insolvency in 2009.

Since Rainer Mayer's passing in 2015, the fourth generation has taken the helm. Benjamin, Marcus, and Sebastian Mayer now share responsibility for the company's various business areas.

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## Kornit Digital

### Kornit Digital and MAS ACME USA Sign Strategic Partnership That eases the Agility Required to Win in Today's Fashion and Apparel Production Landscape

**Agreement Pairs Kornit Digital On-Demand Production Solutions With MAS ACME USA's Data Diagnostics Designed To Optimize Supply Chain And Manufacturing Efficiencies**

Kornit Digital Ltd. (NASDAQ: KRNT) ("Kornit" or the "Company"), a global pioneer in sustainable, on-demand digital fashion and textile production technologies, signed a strategic partnership with MAS Holdings via subsidiary MAS ACME USA—a holistic, supply chain orchestration hub, located in North America to serve sustainable fashion and apparel brands. The deal will empower MAS customers, retailers, and brands, to quickly realize the vision of data-driven fashion production and become both more sustainable and profitable.

The commercial agreement directly aligns Kornit with MAS Holdings - a global leader in fashion and sportswear apparel manufacturing, delivering end-to-end supply chain orchestration and operational excellence. MAS is the largest apparel technology company in South Asia, collaborating with brands like Victoria's Secret, PVH, Gap, Marks & Spencer, and Nike.

This agreement formalizes the partners' commitment to building a viable production alternative for an industry plagued by overproduction, unplanned markdowns, and supply chain inefficiencies. Uniting Kornit's digital on-demand production prowess with MAS' supply chain excellence and precision data diagnostics allows brands to avoid missing sales, respond with weekly, US production runs to optimize inventory levels at retail, all while minimizing waste, maximizing full-price sell-through, and freeing up working capital.


"Fashion is the world's oldest, largest, most complex supply chain, yet it is fundamentally broken and riddled with inefficiency—we believe the need for change is urgent. This strategic agreement offers the industry a proven alternative to overproduction, waste, and disrupted supply chains," said Ronen Samuel, Chief Executive Officer at Kornit Digital. "Kornit and MAS ACME USA share a common thread, a commitment to 'make fashion better.' I am delighted to see Kornit's industry-leading on-demand solutions paired with MAS' pioneering approach to supply chains and manufacturing data diagnostics. Together, we unlock what the industry needs – a clear pathway to more responsible, profitable, and agile fashion production."

The strategic agreement provides brands and retailers with key benefits:

SCIENCE IN INDUSTRY

- On-Shore Supply Chain Flexibility eliminates the lack of responsiveness and long-lead times inherent in traditional fashion supply chains. Instead, enabling agile, local on-demand production to produce only what is needed, when and where it is required.
- Maximize Working Capital Efficiency and Profits by enabling brands to react rapidly to market trends that generate higher revenues through fewer missed sales and markdowns, with lower inventory carrying costs.
- Truly Sustainable Growth through a more responsible data-driven, on-demand production model that all stakeholders value. A solution that delights consumers with in-stock availability without needing costly, extensive inventories, profoundly reducing waste and costs.

"MAS ACME USA has demonstrated the power of end-to-end supply chain data diagnostics for our large brand and retailer clients, modeling how they can optimize their manufacturing strategy and increase profits by postponing a portion of production until much later, when the demand forecast is most accurate. Kornit's digital production systems were exactly the solution we needed to realize our vision of onshore, fully demand driven production to meet the market needs expeditiously," said Brad Ballentine, CEO of MAS ACME USA. "From the moment I met the Kornit team and experienced the power and quality of their solutions, I knew they were the right partner for us. We share a common vision to build a global supply chain capability that offers unprecedented flexibility and the power to transform the fashion industry into a smarter, more efficient engine. We are thrilled to announce this agreement and excited to start digital production for our customers in the US market."

**About Kornit Digital**

Kornit Digital (NASDAQ: KRNT) is a worldwide market leader in sustainable, on-demand, digital fashion and textile production technologies. The company offers end-to-end solutions including digital printing systems, inks, consumables, software,

and fulfillment services through its global fulfillment network. Headquartered in Israel with offices in the USA, Europe, and Asia Pacific, Kornit Digital serves customers in more than 100 countries and states worldwide. To learn more about how Kornit Digital is boldly transforming the world of fashion and textiles, visit www.kornit.com.

**About MAS ACME USA**

MAS ACME USA is not simply another division of MAS Holdings. It is a strategic orchestration hub, channeling MAS' global expertise into end-to-end supply chain transformation. By integrating diagnostics, postponement, and precision, MAS ACME USA helps brands respond to demand – not just predict it. Its US presence accelerates responsiveness and operational agility, enabling a smarter, faster, and more flexible supply network through onshore and nearshore operations. Ultimately, MAS ACME USA demonstrates how scale and agility can coexist – proving that sustainable profitability is a roadmap already in motion.

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## Uster Technologies AG

### An Interesting Panel discussion on yarn made from recycled raw materials:

- Challenges of making yarn from recycled fibers
- The role of latest technologies in sustainable spinning

What does it take to spin quality yarn from recycled fibers? Uster Technologies brought textile industry leaders together to discuss the role of technology, data and automation– as well as the current challenges in using recycled raw material. Experts from Rieter, Säntis Textiles, Otto Yarns, and TVUcommented on the current situation and looked into the future of spinningin a panel discussion organized at Uster headquarters.

It's more than just machinery – it's about rethinking processes, embracing AI, data and machine automation as well as building industry-wide collaboration. As spinners navigate the multiple demands of circularity, customer satisfaction, and profitable business, one thing is clear: the future of recycled textiles must be individually engineered, comprehensively tested, and connected like never before.

**Standards and individuality: engineering for reliability and diversity**

Advanced machinery is a critical component in enabling engineering teams to optimize processes and drive innovation. Machines from leading manufacturers offer reliabilitybut don't make an inimitable product. "With the goal of being different and unique, we create our own path by developing our own final machines," says Andreas Merkel, CEO at Otto Yarns. Otto engineers customize the machines for specialized applications.A notable example is the Spin-Knit system, which integrates spinning and knitting into one continuous operation. Originally configured for cotton, the machine was re-engineered to process technical fibers, by removing the standard top section and implementing a proprietary drafting system.

Stratos Fragkotsinos, Vice President Business Area Mill Management Solution at Uster Technologies, moderating the panel discussion featuring(from left to right) Stefan Hutter, owner, Säntis-Textiles; Thomas Franz, Sales and Purchasing Manager, TVU; Michael Will, Head Textile Technology & Process Analytics, Rieter; Andreas Merkel, CEO, Otto Yarns.

The production of recycled yarns brings technical requirements that are significantly different from those with virgin fibers. According to Stefan Hutter, owner of SäntisTextiles, there is a clear need for the development of new industry standards tailored specifically for recycled materials, and he advocates for Uster Technologies to take a leading role in this effort. Ultimately, the successful integration of advanced production machinery, newly-defined quality standards, and precise quality control

systems will require close industry collaboration. This is the only way that confidence in recycled yarns can be established – ensuring that customers not only trust the product's performance and consistency but are also willing to invest in its value.

### Adapting spinning processes for recycled yarns

Recycled yarn production can be achieved with existing spinning technologies, either by adapting current systems or by integrating additional processing steps. "Spinners must go back to the basic task and again learn how to spin, starting from scratch and going through the whole line of spinning," says Michael Will, Head Textile Technology &Process Analytics at Rieter. This re-learning process is essential due to the variable nature of recycled fibers, and it demands extensive testing and data collection – measuring key parameters, validating process changes, and ensuring consistency through iterative quality control.

Growing customer demand for more automation presents a dual challenge: matching the need for maximum flexibility with the rigid configurations typical with interconnected automated systems. In conventional spinning mills, linking multiple machines can limit process adaptability. However, machine-level automation offers potential for enhanced flexibility, particularly when processing smaller lot sizes. For instance, features such as automated adjustment of comber nip distances can streamline setups.

### The role of data and AI

In the recycling process, sorting, separating, and cleaning are advanced operations in which artificial intelligence plays a critical role in pattern recognition and optimization. In this way, AI enables optimization of material recovery at the right quality, to improve process efficiency. Another key area is traceability, which ensures product reliability and builds trust throughout the supply chain. "For downstream processes such as dyeing, it must be possible to trust certificates," says Thomas Franz, Sales and Purchasing Manager at TVU.

Data analysis is fundamental to these efforts, but it becomes truly effective only when integrating comprehensive data streams. This means connecting spinning machinery and testing instruments – ideally across different brands – to enable holistic process monitoring and control. For spinners, seamless working between equipment and systems is crucial to unlocking maximum operational benefits and ensuring consistent quality in recycled yarn production.

Enabling the future would start with technology partners meeting, discussing and working together. This is a common belief of the experts participating at the panel discussion – and the Uster event has been one step in this direction.

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## Heberlein Technology AG

### Heberlein can pride of its Technology Centre

### Expert technical supportis a core competence for Heberlein

The Textile Technology Centre is the pride of Heberlein. State-of-the-art equipment and a team of top experts guarantee the highest standards of support for customers. Heberlein is the leading provider of air interlacing and air texturing jets for synthetic continuous filament yarns and its clients enjoy added value in the form of practical help and guidance on textile processes and economic issues, with a special focus on filament yarn applications. This article provides insights into these comprehensive services.

Samuel Gerber, Head of Textile Technology at Heberlein

Any questions about air interlacing and air texturing jets? Heberlein customers don't need to worry, as Samuel Gerber and his team have all the answers. Together they have over 150 years of experience in finding solutions to any challenges with synthetic continuous filament yarns. Gerber

has been Head of Textile Technology at Heberlein since 2020 – and he is always proud to lead guided tours of the superb facilities he manages.

### Difficult tasks

Synthetic yarn producers usually have to meet specific requirements for the end-productsthe market wants. And these can be difficult tasks. But Heberlein has both the know-how and the experience to turn these requirements into practical advice for efficient and sustainable production. It's a core competence that defines the company. "Buyers demand yarn quality specifications that are clearly defined by their textile technologists. We are the competent partner for yarn producers and eager to accept this kind of challenge for our customers when they face limited resources or a lack of expertise," says Samuel Gerber.

"For example, some customers might wish to reproduce a specific yarn, but a sample isall they have. At Heberlein, we actually like this kind of challenge, and we won't stop until we find a way to make exactly the same yarn – or a very close alternative – as profitably as possible."

Heberlein readily embraces another challenge: demonstrating that itsjets meet the specific performance requirements in spinning. Selecting the optimal jet for a given application is a complex task. But Heberlein service technicians make the decision easier. Equipped with test jets, they visit spinning mills to conduct on-site trials until the desired outcomes are achieved. Ideally, these trials result in reduced air andenergy consumption, without compromising product quality. Or they might target improved yarn characteristics – such as an increased number of knots, enhanced strength, or greater uniformity – while maintaining the same level of air consumption. This hands-on assistance in the selection and validation of the appropriate jet is highly valued by customers.

### Supporting innovation

Customers trust the experts at the Heberlein Textile Technology Centre when planningnew developments. The teamoffers indispensable support in elaborating new products by testing innovative ideas,technical specifications and other customer enquiries to be further developed in practice. Close co-operation between specialists and the availability of modern equipment and practical test procedures ensure reliable data and results. And this is the solid foundation for successful product developments in the textile industry.

"We run trials with APe, our latest DTY series, achieving significant air savings for the customer's application,"says Gerber. "Such a result, we take as success but also as proof of the fruitful co-operation between our R&D team, our experts in the textile laboratory and the customers."

### Valuable advice on hand

At the Heberlein Textile Technology Centre, latest air interlacing, air covering, and air texturizing machines from leading manufacturers are installed, allowing for the simulation of production steps comparable to those in the customer's own mill. Customers and their staff are always welcome to attend. That is an excellent opportunity to learn directly from experts and apply improvements to their own machinery with confidence.

Heberlein Textile Technology Centre

Yarn tests are also highly appreciated services. Heberlein's reports contain recommended machine settings, with photos, and in some cases customersreceive wovenor knitted samples or bobbins for their further evaluation. In every case, theseservices help yarn manufacturers to improve quality and process efficiency, to increase profitability and finally eliminate the risk of claims.

Troubleshooting is a Heberlein speciality. The team at thelaboratory and test centre offers comprehensive services every day. "We support everyone – existing customers as well as any professional struggling with ATY, DTY, AC, DSY or spinning. We dare say that we can offer unique competencies in the fields of air interlacing, air covering, and air texturizing," says Gerber.

### Technical care heritage

Expert advice serviceshave a long tradition with thecompany, which celebrates its 190th anniversary

in 2025.Technical guidance and supporthave been offered as an added-value service since 1950. As a centre of knowledge for the textile industry, training and troubleshooting workshops – internal and external – are an integral part of the Heberlein offering.

Heberlein's long heritage of sharing expertise is clearly a basis for the continuing strong customer relations policy that characterises the company today.

### About Heberlein

Heberlein Technology AG is the world's leading provider of air interlacing and air texturing jets for synthetic continuous filament yarns. Heberlein's core competence is the development and production of highly specialised key components for process-optimised treatment and finishing of synthetic yarns – especially filaments. Heberlein develops products for significant process improvements and energy savings, based on latest flow simulations and extensive trials at its headquarters in Switzerland.

Heberlein operates an in-house textile centre equipped with a range of cutting-edge filament processing machinery, and a laboratory for analysis and testing of filament yarns. A dedicated customer service centre is the focal point for the top-level support worldwide clients require for their individual solutions.

Since 1835, Heberlein products have been renowned for their innovative technology, durability and optimal cost-benefit performance.

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