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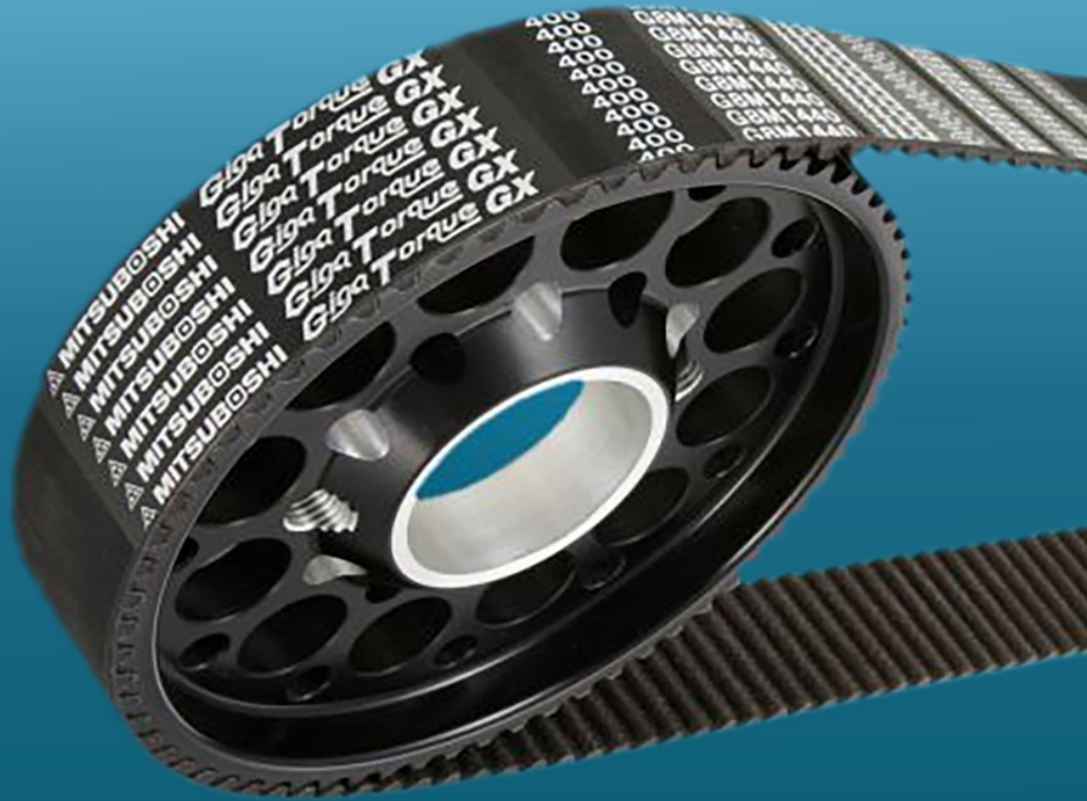
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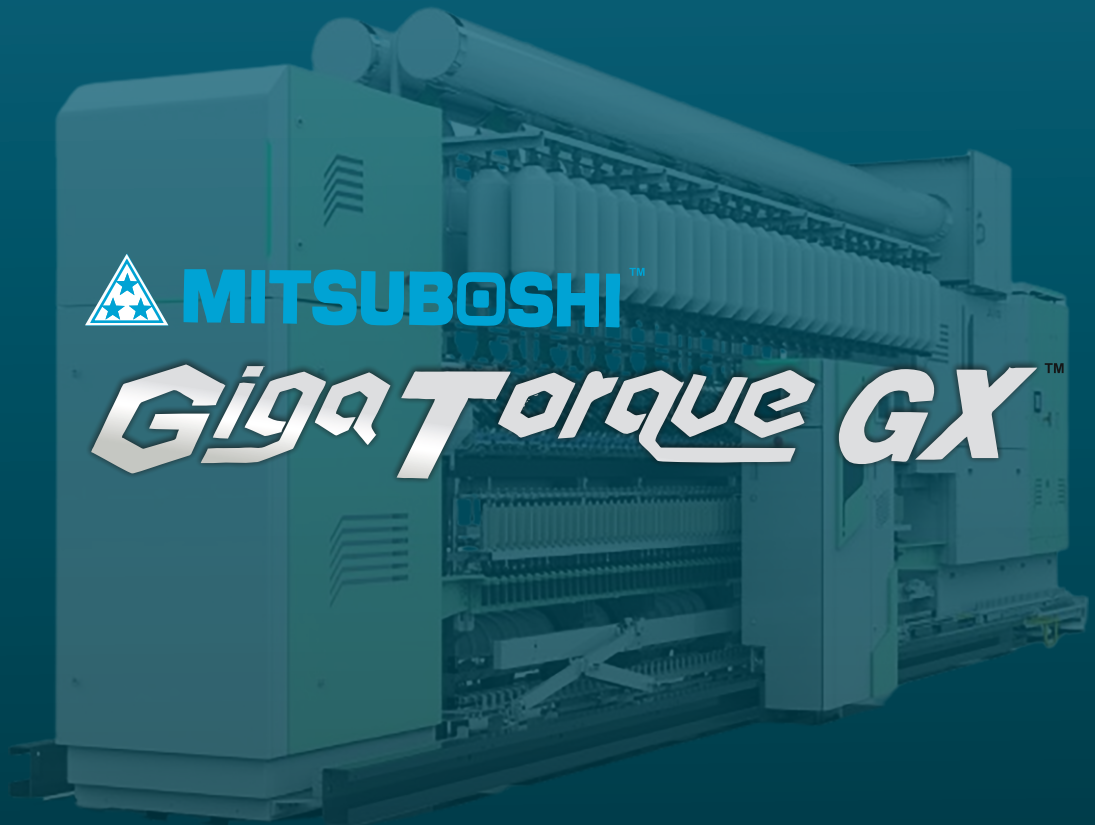
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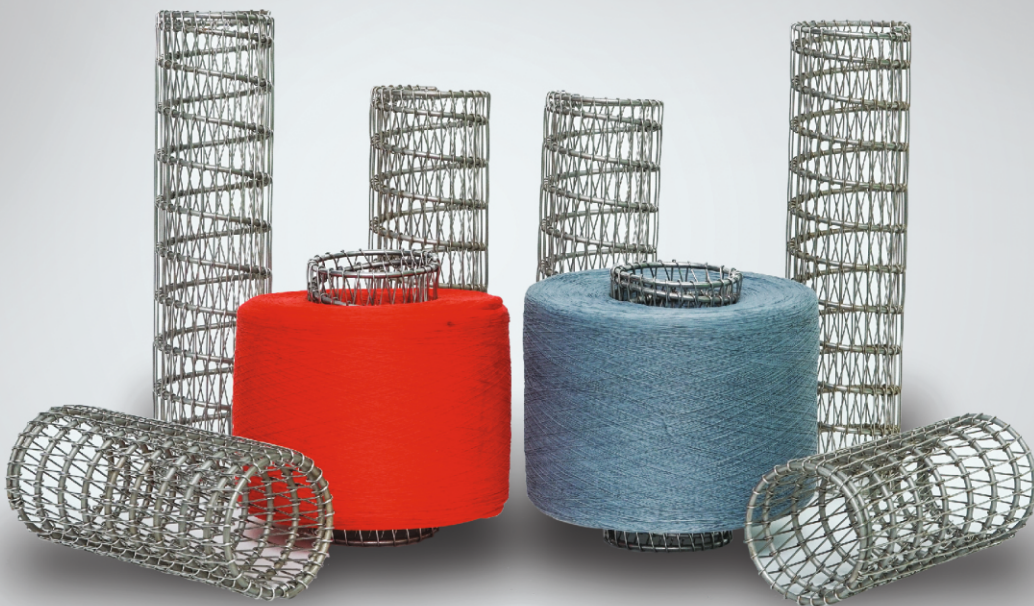
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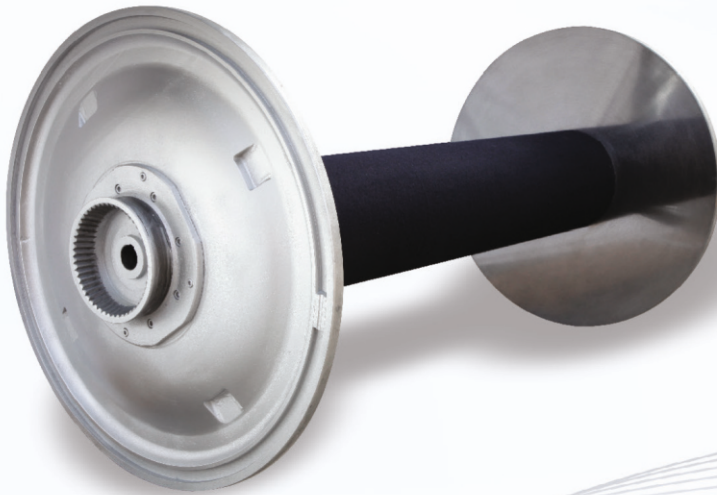


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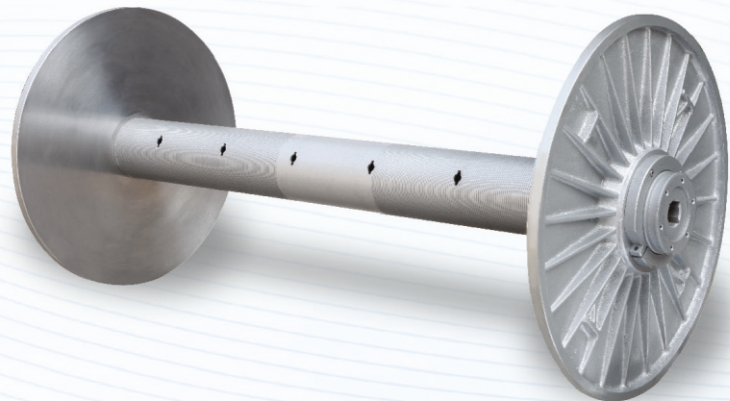
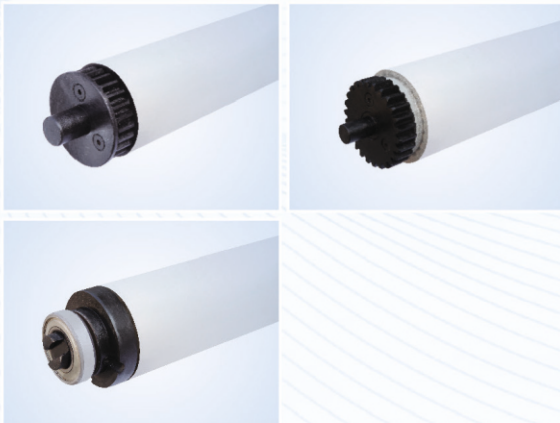
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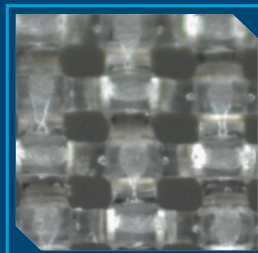
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网格圈密度与纱支对照表

Relations between apron density and spinning yarn count

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A	150	3500	> 30°	70°~100°
B	140	3000	20 °~100°	50°~80°
C	120	2200	10 °~80°	20 °~60°
CD	100	1600	20 °~100°	30 °~80°
D	80	1000	Wool 毛纺	Wool 毛纺



Editorial	----	15	Exploring the Therapeutic Role of Fabrics in enhancing Psychological and Physiological well-being — <i>Prof. Radha Kashyap</i>	----	26
World Economy and Trade Trends	----	16	Sustainable Innovations in Crochet through up-cycling leftover yarn	----	31
Indian Economy and Trade Trends	----	19	Designing and Development of sustainable fashion logo-patch-work tote bags	----	37
In Bharat Tex 2026 India's textile ambitions come under one roof : Giriraj Singh	----	21	Export Prospects and Markets	----	50
Delayed monsoon, global price surge lift cotton	----	22	President's Address to Members of TAI	----	56
Jammu & Kashmir eyes on Uttarakhand model to expand silk production	----	22	Felicitation of Senior members with "Distinguished Service Award"	----	57
Denim Pioneer gives 40-year old flying machine a new-age fit in the highly competitive apparel market	----	23	TAI hosted successfully Webinar titled "Cradle to Cradle"	----	59
PM Mitra Scheme : Two textile parks to be developed under DBFOT model	----	24	The Textile Association (India), Mumbai Unit to organize Seminar on "Future Trends in Technical Textiles"	----	59
Benefits of growth in J&K textile bypasses weavers	----	24	Join The Textile Association (India), Mumbai Unit Your Gateway to Excellence in the Textile Industry	----	60
Little shoppers emerge as Indian apparel's biggest growth story	----	25	N.D. Mhatre got conferred certificate of International Excellence Karnataka	----	62
			Corporate News	----	64
			Textile Events	----	75
			Crafting Future Ready Spinning Mills		
			— LMW's Innovation Hub in Surat Cluster	----	80
			Science in Industry	----	85
			Index	----	96

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Technical textile plays a defining role in giving comfort, durability and flexibility of footwear industry.

When we boldly say of an 'Atmanirvar Bharat' we are not just speaking of gradual decrease of dependence on foreign imports but also holding leadership in global value chain. Few sectors are working to carry out the slogan sincerely like footwear industry. It is one of the universal products in daily life. India despite being the 2nd largest producer Its share in global footwear is still insignificant. This is not because of lack of capacity but due to the need for a shift towards materials design and performance. At the center of this shift lies a category that often remains unnoticed—technical textile. Several footwear manufacturing units in Agra using the materials that give more comfort, durability and flexibility. Though they do not term it technical textile, they simply describe them inputs that meet consumer's evolving needs.

Footwear industry's stake holders are well sincere towards changing consumers expectations—lighter shoes, better cushioning, improved breathability, and longer durability. These wants are no longer premium features but were consumers' legitimate requirement. The footwear industry is now extensively using technical textile for imbedding the above features what buyers choose. The footwear industry already employs 2 million people with 50% women participations. This labour-intensive industry is growingly leaning to technical textile. Established cluster of footwear industry in Agra, Kanpur, Chennai and Kolkata on which India can scale competitiveness and global leadership in footwear. These production hubs develop a powerful insight that technical textiles in footwear industry are not emerging concept but they are already embedded in the industry, quietly shaping products and processes.

The task ahead is to recognize, organize and scale this integration. Bringing the footwear sector more explicitly within technical textile eco system can drive innovation, expansion of exports and create high quality employment. India's journey towards becoming global manufacturing leader will depend on how effectively it leverages such intersection where traditional industries meet advanced materials and modern design. Footwear is one such intersection. Technical textiles are the thread that can help stitch this opportunity into a global success story.

⇒ PM Burnham pledged a new economic model for Britain

Andy Burnham pledged a “new economic model” for the UK as he sought to reassure Britons his ascension as their seventh prime minister in little over a decade would bring an end to the country’s political instability. Burnham promised in his first remarks as prime minister recently to deliver immediate and fully-costed action to reduce the cost of living. He described to move as the first step toward a “10-year plan” to restructure government, hand more power to local authorities and bring essential services “under stronger public control.” “I know people at home are fed up with politics — I hear you, and I want to be honest with you: We have not been good enough,” Burnham said, flanked by supporters in front of No. 10 Downing St. “We will make this moment a circuit breaker for Britain, bringing forward the biggest changes in the last 40 years: a new political model and a new economic model.” As if to underscore his efforts to appear more accessible, Burnham spoke without the usual lectern and used no notes in remarks lasting about five minutes. His updated biography page referred to him as “Andy”, rather than using his surname. Burnham’s speech included lines meant to reassure investors and Britain’s allies abroad, vowing to meet our fiscal rules” and honour the country’s commitments on defence. The former mayor of Greater Manchester, who had little foreign policy experience before seeking the prime minister’s job, told broadcasters separately that he would speak with Ukrainian President Volodymyr Zelenskyy later. Gilts fell recently, driven by oil prices rather than political headlines given Burnham’s ascent to power was already fully priced. Investors are focused on his pick for chancellor, with Shabana Mahmood widely expected. The 10-year yield was five basis points higher at 5% at 2:25 p.m. London time. “There is not much to read into at this stage, and markets have shown little reaction, with the renewed commitment to the fiscal rules likely helping to prevent any spike in gilt yields,” Evelyn Gomez-Liechti, multi asset strategist at Mizuho International,

said after Burnham’s speech. Burnham successfully pulled off his power-grab with very little known about his plans for office and is under pressure to offer clarity as to his policy priorities and, in particular, his approach to taxation and public spending. Britain’s Finance Minister Rachel Reeves left the government after Andy Burnham became PM. “I wish the very best of luck to my successor, Andy and his cabinet. You have my full support, and I will continue to play my part in helping this Labour government deliver the change the country needs,” she said on X. □

⇒ China plans tighter export controls on AI models, chips

Chinese authorities are considering tightening export controls on artificial intelligence (AI) and semiconductor technologies, the reporters reported recently. The step reflects Beijing’s push to keep domestic AI at home and show that China, like the United States (US), now sees advanced AI as a critical national asset requiring controls. Earlier, reporters had exclusively reported that Chinese authorities had earlier held meetings with top tech firms about potentially restricting overseas access to China’s most advanced AI models, including those yet to be released. Regulators led by China’s Ministry of Commerce have been consulting top homegrown AI and chipmaking companies on how to stop China’s advanced technologies and leading start-ups from being acquired by the west, the report said, citing two people involved in the discussions. The Commerce Ministry, which oversees export regulations, has also spoken with AI companies including Alibaba, Byte-Dance and Zhipu on limiting the transfer of key data for the training of their models overseas, as well as allowing their model weights to be downloaded by foreign users, the newspaper said. It has also sought views on possible restrictions that would prevent overseas chipmakers including Qualcomm and TSMC from producing advanced semi-conductors based on designs developed by Chinese companies such as Huawei, Alibaba and Byte-Dance, reporters said. The new measures could be included into the next revision of China’s catalogue

WORLD ECONOMY AND TRADE TRENDS

of technologies prohibited or restricted from export, the report said, adding that these proposals are under consideration and regulators are weighing industry feedback before making a final call. Potential restrictions could also be imposed on the overseas acquisition strategic technology in areas such as agentic AI, reporter said. Reporters could not immediately verify the report. The Commerce Ministry, ByteDance, Alibaba, Zhipu, Huawei, Qualcomm and TSMC did not immediately respond to a reporters request for comment. The US and China will hold talks over AI in September, five people familiar with the matter told reporters, as the rival superpowers grapple with how to mitigate the risks posed by each other's increasingly powerful frontier models. The AI talks, a significant out-come of the Trump-Xi summit in May, will likely take place before Chinese President Xi Jinping's planned September 24 visit to the US, said the sources, who asked not to be named as the information is not public. The dates, however, have not been finalised, they said. Beijing and Washington are weighing how to regulate AI models that could strengthen military capabilities, enable cyberattacks on critical infrastructure and disrupt labour markets. □

⇒ Cost of the US's war in Iran rises to \$37.5 bn

The cost of the US' war in Iran has risen to \$37.5 billion so far, US Defense Secretary Pete Hegseth has said, as he faced skeptical lawmakers for the first time since heavy bombings resumed to seek urgent funding for the unpopular conflict. With just six months before midterm elections in which US President Donald Trump's Republicans may face an uphill battle to keep their House of Representatives and Senate majorities, Democrats are riding high in public opinion polls as they attempt to link the unpopular Iran war with affordability. Hegseth told lawmakers in Washington that the \$37.5 billion included certain aspects of war as well as anticipated costs through September 30. It was unclear how the Pentagon arrived at the figure. A source told Reuters in March that Trump's administration estimated the

first six days of the war had cost at least \$11.3 billion. Trump asked Congress in June for \$90 billion in additional funding, most of it related to the Iran conflict, setting the stage for another fight with lawmakers frustrated with the war and facing November midterms. Both Republican and Democratic lawmakers have complained since the US and Israel began bombing Iran on February 28 that Trump and his team have not kept them informed about the conflict. "The president is threatening escalation and war crimes, and suggesting this could be another forever war," Senator Patty Murray, the top Democrat on the Appropriation Committee, said. □

⇒ UK inflation slowed to its lowest level in more than year; Temporary Relief for Consumers

UK inflation slowed to its lowest level in more than a year in June, helped by cheaper motor fuel, food and clothing, offering temporary relief to households before higher energy costs are expected to push prices up again. Consumer prices rose 2.6% in the 12 months to June, down from 2.8% in May and the lowest annual rate since March 2025, the Office for National Statistics said recently. The reading was below economists's median forecast of 2.7% and marked the third straight month inflation undershot expectations. Petrol and diesel prices fell 3.1% during the month after crude oil declined amid hopes of a de-escalation in the US-Iran conflict. Food inflation eased to its lowest level since 2024, while heavy discounts on clothing also helped moderate price pressures. Services inflation, a key gauge of domestic price pressures closely watched by the Bank of England (BOE), slowed to 3.6% from 3.7%, although it remained slightly above forecasts. The respite may prove short-lived Yael Selfin, chief economist at KPMG UK, said June was "likely to mark the low point for inflation this year, with higher energy bills set to complicate the short-term outlook." Economists expect inflation to edge higher in July after Britain's household energy price cap rose 13%. Renewed hostilities between the US and Iran have also pushed crude oil back above \$90 a barrel, while gas

prices have climbed sharply in recent weeks. Contain living costs remains a priority for the Labour government. Prime Minister Andy Burnham has pledged to give families "breathing space" and announced that value-added tax on household electricity bills will be scrapped from October, a move the government estimates will lower inflation by about 0.1 percentage point. □

▢ War could reduce global growth to 1.3% in 2026: World Bank

Escalating hostilities between the United States (US) and Iran could reignite inflation, drive interest rates higher and knock global growth back to as low as 1.3 per cent, down from 2.9 per cent last year, World Bank Chief Economist Indermit Gill told reporters. Gill, who retires at the end of August, said the bank had modelled three outcomes in its June economic forecast given the high uncertainty surrounding the war in West Asia, but the worst-case scenario with hostilities lasting six months or more has already come close to materialising, he said in a late recent interview. Under that scenario, global headline inflation would reach 4.5 per cent. Gill said poor countries that had not recovered from the Covid pandemic could face greater food insecurity, while nations with high debt levels would be hit by rising borrowing costs as interest rates climbed, squeezing spending on education, health and other vital services. "My own sense of it is, may be we are a few months away from that, you know, because you haven't yet started to see policy rates go up," he said. □

▢ U.S. House approves \$95-bn budget, most of it for Iran war

The U.S. House of Representatives approved a \$95 billion budget framework recently, with most of the funding earmarked for the Pentagon to fund the war against Iran. The measure was narrowly approved in a 216-214 vote and now heads to the Senate, where its fate is uncertain. The plan provides \$73 billion for the armed forces and intelligence agencies, notably to fund operations linked to the war against Iran, as well as \$12 billion

in aid for farmers affected by President Donald Trump's trade war. An additional \$10 billion would go towards election-related programmes as part of Mr. Trump's push to enact new nationwide voting restrictions while his broader "SAVE America Act" lacks enough support to proceed. The budget package represents the Republican party's last major legislative push before November's midterm elections, the outcome of which will determine whether the party retains its majority in Congress and thus continues to shape the remainder of Mr. Trump's second term. Democratic Representative Rosa DeLauro denounced a measure that would allow Mr. Trump to finance the continuation of his war against Iran. □

▢ US weekly jobless claims hit lowest since 1969

The number of Americans seeking unemployment benefits for the first time unexpectedly fell of late to the lowest since the 1960s, indicating the US job market continues on an even keel and leaving Federal Reserve officials to keep their focus on containing inflation. Initial claims for state jobless benefits dropped by 22,000 — the largest decline in three months — to a adjusted 187,000 for the week ended July 18, the Labour Department said. That was the lowest level of new applications since September 1969 and came as economists polled by *Reuters* had forecast new claims would edge up to 212,000 soon. □

▢ China H1 inflows down 5% on-year

Foreign investment flows into China in yuan terms were down 5% to 402.1 billion yuan (\$59.39 billion) in the first half of 2026 from the same period last year, data from China's commerce ministry showed recently. In June alone, foreign direct investment was up 15.1% year-on-year, the data showed. Meanwhile, China plans to increase wind and solar power generation by 53% over the next five years, under a renewable energy plan released recently that for the first time makes its green power target binding. The plan is aimed at increasing overall renewable generation to 1.8 billion tons of coal equivalent (tce) by 2030. ■

INDIAN ECONOMY AND TRADE TRENDS

Trade deficit grew over fourfold in June on surging imports

India's trade deficit grew over fourfold to \$15.3 billion in June 2026 primarily due to high growth in merchandise imports, which were skewed by a spurt in the value of imports of crude oil, electronic and electrical goods, and gold, according to official data. Data released by the Ministry of Commerce and Industry showed India's overall exports, including both goods and services, grew 9.5% to \$73.4 billion in June 2026. Total imports, on the other hand, grew nearly 27% to \$88.8 billion. "Looking at the data, you would see that merchandise imports in particular have grown by a significant amount and think that this is a matter of concern, but the fact is that these imports are being driven by just a few commodities such as petroleum products and crude oil, gold, and electronics," Commerce Secretary Rajesh Agrawal said during a press briefing. "Gold and oil have increased in value because of higher prices due to the prevailing geopolitical situation, and electronics imports are rising because of higher consumption with in the economy and also inputs being used for manufacturing", he added. Merchandise imports grew 31% to \$70.8 billion as opposed to exports, which grew at a relatively slower 15.5% to \$40.4 billion in June 2026. As a result, that merchandise trade deficit stood at \$30.4 billion, about 59% higher than in June 2025. On the services front, India's trade surplus shrank in June 2025 as imports outpaced exports. Services exports grew 2.9% in June 2026 to \$33 billion, while imports grew 12.7% to \$17.9 billion. As a result, the services trade surplus fell 6.8% in June 2026 to \$15.1 billion. "The widening of the June trade deficit is largely led by higher net imports of oil and electronics," said Upasna Bhardwaj, Chief Economist, Kotak Mahindra Bank. □

IMF slashes India's FY 27 growth forecast to 6.4%

The International Monetary Fund (IMF) recently pared its growth forecast for India by 10 basis points (bps) to 6.4 percent for FY 27 (2026-27) from its April-forecast, saying higher energy prices may offset the resilience in the country's economic activity. "Higher-frequency

indicators through April are showing quite a bit of resilience in overall economic activity, but these positive effects are more than offset for 2026 by higher energy prices in our baseline July update, as well as greater pass-through of those prices to the pumps in India." Deniz Igan, deputy chief of the Macro-Financial Division in the IMF's Research Department, told reporters in Washington, DC. "In 2027, we are expecting strengthening (of growth momentum), with the energy shock dissipating. Medium term growth is estimated at around 6.5 percent", Igan said. For FY28, the multilateral organisation upgraded its growth forecast by 20 bps to 6.7 percent. "India remains among the faster-growing major economies, with the growth projected at 6.4 percent, supported by strong momentum in private consumption and services activity," the IMF said in its World Economic Outlook update. The report said revisions to growth forecasts for emerging market and developing economies were mixed, reflecting differences in commodity dependence, geographic exposure, remittance to tourism receipts, sensitivity to financial conditions, and position in the global technology value chain. The Fund raised China's 2026 growth forecast by 20 bps to 4.6 percent while saying the economy is expected to slow from 5 percent in 2025. □

Import increase keeps trade gap elevated

A sharp rise in imports to the second-highest level kept India's trade deficit elevated in May despite merchandise exports touching a record high, according to the commerce ministry data released recently. India's Merchandise exports rose 18 percent year-on-year (Y-o-Y) in May to a record high of \$45.20 billion, driven by strong petroleum and engineering goods exports, and recovery in shipments to West Asia. However, the trade deficit widened sharply from a year earlier, and narrowed only marginally on a sequential basis, easing to \$28.21 billion in May from \$73.41 billion, pushing India's import bill to its second-highest level on record, behind only the \$76.73 billion registered in October last year. The commerce ministry estimated services exports at \$36.76 billion in May, up 13 percent Y-o-Y, while services imports were estimated 14 percent up Y-O-Y at \$19.06 billion. India

recorded an estimated services trade surplus of \$17.70 billion in May. The Reserve Bank of India (RBI) is expected to release final services trade data soon. Petroleum products and engineering goods were the main drivers of export growth in May. Petroleum product exports rose 55 percent from a year earlier to \$8.42 billion while engineering goods exports climbed nearly 25 percent to \$12.31 billion. "I am happy to inform that exports to West Asia more or less reached the May 2025 level," Commerce Secretary Rajesh Agrawal said. India's exports to West Asia were \$5.30 billion in May compared to \$5.38 billion a year ago, Agrawal said, attributing the recovery to the efforts of export promotion agencies and the shipping ministry in finding alternative routes amid the closure of the Strait of Hormuz. India's exports in June are also likely to be "good" if the situation normalises in West Asia following the US-Iran peace deal. Agrawal said. "Our imports from West Asia have also reached around \$10.74 billion in May as compared to \$13 billion to May 2025". Agrawal said. "We are improving on imports also despite the fact that oil imports from West Asia have definitely reduced," he added. An increase in Inflow of crude oil and electronic goods shipments took India's import bill for May to the second-highest level. India imported crude oil worth \$22.68 billion in May, up 54 percent Y-o-Y import of electronic goods grew nearly 36 percent to \$12.30 billion. India's gold imports also jumped 34 percent to \$3.42 billion in May. However, gold shipments were lower than \$5.62 billion in April, which had prompted the government to raise the duty on gold. Meanwhile, the impact of Customs duty hike on silver showed prominently in May data as imports of the metal fell 87 percent to \$75.57 million. China was India's top import source, with inward shipments growing 23 percent to \$12.73 billion in May. Exports to China also rose 25 percent to \$2.02 billion in the same month. The US remained India's largest export destination in May, even as exports declined marginally to 8.82 billion from \$8.82 billion a year ago. Imports from the US rose 54 percent to \$5.87 billion due to a surge in imports of liquefied petroleum gas (LPG) from the region, according to Agrawal. Some new export destinations like Singapore and Tanzania featured among the

top 10 export destinations in May due to the rise in shipments of petroleum products, and gems & jewellery to those nations, Agrawal said. India's cumulative goods exports to April- May were \$88.91 billion, up 16 percent Y-o-Y. Imports rose 15 percent to \$145.35 billion, in the first two months of 2026-27 (FY27), compared to \$49.66 billion a year ago. Going ahead in the year, the reopening of the Strait of Hormuz and the de-escalation of geopolitical tensions are expected to further boost Indian exports. Federation of Indian Export Organisation President S C Ralhan said. Rajul Agrawal, principal economic, Icria Ltd, said the easing of tensions in West Asia, and the consequent cooling in energy and commodity prices are expected to bring some relief to the merchandise trade deficit prints. "We now expect the current account deficit (CAD) to be relatively benign in FY27 as opposed to our earlier estimate of 1.7 per cent of gross domestic product (GDP) for the financial year, which had assured an average crude oil price of \$95/barrel," he added. □

➡ India's external debt surges to \$762.8 bn at FY26-end: RBI

India's total external debt stood at \$762.8 billion at the end of March 2026, registering an increase of \$26.3 billion over the year-ago period, according to the RBI data released recently. Valuation effect due to the appreciation of the US dollar vis-a-vis the Indian rupee and other major currencies amounted to \$24.6 billion. The central bank also said that the external-debt-to-GDP ratio increased to 20.8% at end-March 2026 from 19.8% during the corresponding period a year ago. At the end of March 2026, RBI said, long-term debt (with original maturity of above one year) stood at \$613.5 billion, recording an increase of \$11.6 billion over its level at end-March 2025. "The share of short-term debt (with original maturity of up to one year) in total external debt increased to 19.6% at end-March 2026 from 18.3% at end-March 2025," it said. US dollar-denominated debt remained the largest component of India's external debt, with a share of 55.5% at end-March 2026, followed by debt denominated in the Indian rupee (29.4%), yen (6.4%), SDR2 (4.3%) and euro (3.7%). ■

In Bharat Tex 2026 India's textile ambitions come under one roof: Giriraj Singh

Some events showcase the strength of an industry. Others shape its future. As Bharat Tex 2026 unfolds at Bharat Mandapam, I believe we are witnessing that latter.

In just two days, I have seen the full spectrum of India's textile ambition come together under one roof: Manufacturers meeting global buyers, young entrepreneurs presenting transformative ideas, designers reimagining our artistic heritage, and international partners looking at India not merely as a market or manufacturing destination, but as a country with which they want to build the future.

Three convictions

These interactions have reinforced three convictions. The world trusts India, India needs to scale and is scaling, and the future of textiles will belong to those who combine sustainability, technology and creativity. India can lead on all three. The response to Bharat Tex 2026 reflects this confidence. By the second day, nearly 69,000 footfalls had been recorded. More than 1,600 companies are exhibiting, with MSMEs accounting for nearly three-fourths of the exhibition base. From 111 countries and over 3,600 overseas buyers in 2024, Bharat Tex has expanded to more than 130 countries and 7,000 overseas buyers in 2026. Knowledge sessions have grown from 73 to more than 100, partners from 22 to over 50, while more than 30 MoUs and institutional reports are being taken forward this year.

Prime Minister Narendra Modi's visionary 5F framework—farm to fibre to factory to fashion to foreign provides the roadmap for this transformation. At Bharat Tex, this entire value chain is visible in action. Farmers and designers, startups and manufacturers, buyers and exporters, policymakers and investors are meeting and building possibilities together.

The knowledge architecture reflects this convergence. Four thematic tracks—trade and Investments, Technology and Innovation, Sustainability and Circularity and Fashion and Craftare focused on the forces shaping our industry's future. Conversations range from global trade. FTAs and PM MITRA parks on technical textiles future fibres, AI, smart manufacturing, circulating, global brands and skilling.

These themes have come alive through my own engagement. While chairing the session on "India: A Trusted Partner in an Uncertain world," one reality stood out: As supply chains are reorganised and businesses seek resilience, trust has become an economic asset. My interactions with global buyers and industry leaders have repeatedly affirmed India's position as a dependable partner. Our task now is to convert that trust into scale. But scale cannot mean production alone.

The scale of the future must combine manufacturing with innovation, competitiveness with sustainability, technology with skills, and India's creative inheritance with global branding.

My discussions with the Ministerial delegation from New Zealand opened new avenues for cooperation, while my engagement with representatives of the republic of Kalmykia, Russia explored opportunities for new textile value chains.

Interactions with Ministers reinforced the critical role of States and district level clusters in translating national ambition into investment. manufacturing and employment. One message has been unmistakable - sustainability and circularity are no longer optional, they are the foundations of competitiveness.

India must transform its inherent strengths in natural fibres, handlooms, reuse and resource-conscious production into a modern competitive advantage through traceability, recycling, green manufacturing, new materials and decarbonisation. At the same time, our extraordinary repository of motifs, temple art, crafts and weaves must inspire globally desired Indian brands. Our ambition must move beyond "Made in India" to "Imagined, Designed and Branded in India."

Technology must accelerate this transition. Artificial intelligence can strengthen skill, raise MSME productivity, improve design, deepen consumer insights and enable smarter manufacturing. The opportunity is to combine India's creativity with the power of new technology.

Come and witness Bharat Tex 2026, not merely to see the future of textiles on display, but to become part of building it. The future of global textiles is being woven today, and Bharat is ready to help shape it. ■

Delayed monsoon, global price surge lift cotton

The rise in international futures, coupled with the delayed progress of the monsoon in Central India, has boosted sentiment in the cotton market, with prices rising over the past few days, stakeholders said.

Prices quoted by the Cotton Corporation of India (CCI) have cumulatively increased by about ₹1,100 per candy (356 kg) during this period. Per the latest Agriculture Ministry data, sowing stood at 17.13 lakh hectares (lh) as of June 19, down about 25 per cent from 22.82 lh a year ago, as weak monsoon progress delayed sowing activities.

Atul Ganatra, Chairman of the Crop Committee at the Cotton Association of India (CAI), attributed the price rise primarily to the firming trend in international futures. "ICE Decembr futures have risen from 75 cents a pound to 80 cents a pound," he said.

Vidarbha Situation

ICE July futures were hovering around 76.05 US cents a pound, while December futures were trading at around 79.67 cents.

"Delayed monsoon arrival is the main reason for prices firming up," said Arun Khetan, a broker in Akola.

In Vidarbha, a key cotton-growing region, sowing is yet to begin, though a few farmers with access to drip irrigation have started planting, he said. "Cotton sowing can continue until July 15 in the region. Overall, we expect acreage to increase by about 10 per cent this year," Khetan said.

Ramanuj Das Boob, a sourcing agent in Raichur, said the rise in ICE futures, uncertainty over the monsoon's progress and its impact on sowing had supported cotton prices. However, the increase in prices was not matched by a corresponding rise in yarn prices, he added.

Demand for CCI

The CCI has witnessed strong demand for its cotton in recent days, with about 7 lakh bales sold of late, Das Boob said. Multinational companies were quoting prices around ₹1,000 per candy above CCI rates, while resellers are offering cotton at a premium of ₹300-500 per candy. CCI prices are currently hovering around ₹62,500-63,200 per candy.

Anand Popat of CotYarn Tradelink LLP estimated total cotton stocks at about 182.5 lakh bales (170 kg each), comprising 94 lakh bales with spinning mills, 25.5 lakh bales of unsold CCI stocks, and 63 lakh bales with MCX warehouses, ginners and traders. ■

Jammu & Kashmir eyes on Uttarakhand model to expand silk production

Jammu and Kashmir is set to establish private mulberry nurseries for the first time as part of its strategy to revive and expand its heritage sericulture sector and achieve a target of producing 225 tonnes of raw silk over the next five years.

The proposal was discussed during a recent review meeting of the Sericulture Development Department and the Central Silk Board (CSB), officials said.

Director of Sericulture Ajaz Ahmad Bhat said a team of officials from Jammu and Kashmir would visit Uttarakhand to study its successful private nursery model.

Sector Revival

The initiative is aimed at increasing the availability of quality mulberry saplings, a key requirement for expanding mulberry plantations, improving cocoon production and boosting silk output.

The move comes at a time when sericulture, despite supporting the livelihoods of about 27,000 rural families in Jammu and Kashmir, continues to operate below its potential.

Official data show that the Union Territory produces around 800 to 900 tonnes of cocoons annually, with

production largely driven by small and marginal farmers. Women account for a significant share of the sericulture workforce, underscoring the sector's importance as a source of rural employment.

Officials said the proposed nursery model is inspired by Uttarakhand, which has emerged as India's leading producer of high-quality bivoltine silk cocoons and is widely recognised as the country's "bowl of bivoltine silk". The State is also the only one in India that produces all four wide varieties of silk cocoons — mulberry, oak tasar, muga and eri.

Besides introducing private nurseries, the review meeting decided to strengthen extension services, promote scientific silkworm rearing practices and deploy disease-monitoring team to minimise crop losses. Officials also discussed expanding sericulture activities in tribal and non-orchard areas to protect mulberry plantations from pesticide contamination.

Bhat said the department, in collaboration with the Central Silk Board, would organise mega Kisan Melas in Kashmir and Rajouri later this year to promote modern sericulture practices, facilitate the transfer of technology. ■

Denim Pioneer gives 40-year old flying machine a new-age fit in the highly competitive apparel market

Four decades ago, it made a flying entry into India's fashion landscape as the first homegrown denim label. Now, Arvind Fashions is repositioning its legacy Flying Machine brand to appeal to Gen-Z. It is betting on unisex styling and digital-first engagement to revive growth and capture a larger slice of India's rapidly evolving youth apparel market.

It believes the brand's existing recall gives it a rare advantage in a market where many new-age labels are still trying to establish identity. "Flying Machine has a fabulous equity and consumers resonate really well with the brand. The question for us has been how do we drive this brand much deeper, bring great products and ensure much deeper consumer connect as well," Amisha Jain, MD and CEO, Arvind Fashions, told investors during the company's recent earnings call.

Youth Brand

The company's consumer research, Jain said, showed strong resonance with Gen-Z audiences, encouraging it to sharpen the brand's positioning around youth culture and trend-led fashion. "We believe this equity is very well poised and connects strongly with the youth and Gen-Z consumer," she said.

The repositioning also reflects the broader shifts in India's apparel market, where younger consumers are increasingly gravitating towards relaxed silhouettes, casual-wear, gender-fluid styling and trend-driven drops influenced by social media and global fashion cycles. Brands are now required to move faster, refresh collections more frequently and maintain a continuous digital conversation with consumers.

"We have sharply positioned Flying Machine as a unisex, denim-anchored, on-trend youth brand," Jain said. "Flying Machine has always been a strong denim equity and we are going much deeper with that, offering really great products from a Gen-Z point of view." She said the company is closely tracking consumer preferences — from silhouettes and fits to price points and product categories — to ensure the brand remains relevant in a highly competitive market that's increasingly crowded with international fast-fashion players, D2C labels and value-fashion platforms.

The transformation gained momentum after Arvind Fashions acquired back Flipkart's stake in Flying Machine (the online retailer had taken a minority stake in 2020) during the third quarter of FY26, giving it full ownership. Analysts say the firm now has greater flexibility to shape the

brand's long-term positioning, scale up its digital strategy and build an integrated direct-to-consumer ecosystem.

Dedicated Platform

As part of the digital push, Flying Machine will launch a dedicated D2C platform — flying machine.com — in the second half of FY27. It is seen as not just a sales channel but also a way of building direct relationships and community engagement with younger shoppers. "Flying Machine is now live across multiple e-commerce platforms," Jain said. While widening distribution across online marketplaces, the company is simultaneously improving product visibility in offline retail channels.

Early signs suggest the repositioning may already be gaining traction. According to company officials, Flying Machine recorded double-digit like-to-like retail growth during the fourth quarter of FY26, while its business-to-consumer channel grew around 70 per cent. Department store sales also saw strong momentum as the refreshed product started gaining visibility. "What we are bullish about is Flying Machine's positioning getting deeper and sharper," Jain said, adding that the company believed the brand would continue to clock double-digit growth.

The optimism comes from the fact that in India's denim category the company sees a sizeable gap between the market leader and the broader competitive set. Denim remains one of the largest casual-wear categories in India, but increasingly overlaps with streetwear, athleisure and lifestyle fashion — areas where younger consumers are driving demand.

Meanwhile, Arvind Fashions continues to expand its broader retail footprint, adding 1.43 lakh sq ft retail space and around 150 stores in FY26, largely through the franchise-owned, franchisee-operated (FOFO) route. Its exclusive brand outlet count stood at 1,025 as of March. It plans to add 1.5 lakh sq. ft. retail space in FY27, while also upgrading store formats and expanding store sizes across brands.

"We believe there is an opportunity to expand our store network and upsize our stores as well," Jain said. Arvind Fashions also said premium brands such as U.S. Polo Assn. continue to benefit from the premiumisation trends in India's apparel market, even as it remains watchful of inflationary pressures, forex volatility and raw material costs.

The legacy Flying Machine brand's makeover for a new generation of consumers may be among its most closely watched bets. ■

PM Mitra Scheme : Two textile parks to be developed under DBFOT model

Two public-private partnership (PPP) projects under the Centre's flagship PM MITRA scheme, together expected to attract ₹20,000 crore of investment in the textile sector, have received the green signal from the Public Private Partnership Appraisal Committee (PPPAC), paving the way for the launch of the bidding process.

The PPPAC recently cleared the bid documents for the proposed PM MITRA parks at Lucknow in Uttar Pradesh and Vansi in Gujarat's Navsari district, sources said.

The two greenfield integrated textile parks will be developed by private developers under the Design, Build, Finance, Operate and Transfer (DBFOT) model. The projects aim to create world-class integrated manufacturing ecosystems spanning the entire textile value chain, attract large-scale private investment and generate significant employment.

Each park is expected to attract investment of around ₹10,000 crore and generate nearly 100,000 direct and 200,000 indirect jobs. The concession period for both projects has been fixed at up to 50 years. The Lucknow PM MITRA Park will be developed over 1,000 acres through a special purpose vehicle jointly owned by the Centre and the Uttar Pradesh government, with equity participation of 49% and 51%, respectively. The project involves an estimated capital expenditure of ₹1,946.92 crore to create core infrastructure, plug-and-play facilities, common utilities, housing and logistics infrastructure.

The Gujarat park at Vansi in Navsari district will come up over 1,142 acres through a similar joint venture between the Centre and the state government. The project is estimated to cost ₹3,209 crore, with investments planned in civil infrastructure, common effluent treatment facilities, power infrastructure, commercial facilities and logistics.

During its appraisal, the PPPAC suggested several refinements to strengthen the concession framework before the bid documents were issued.

These included changes to bidder eligibility criteria, mid-term performance assessment milestones, land pricing mechanisms, termination payment provisions, user charge regulations and technical specifications for common infrastructure such as common effluent treatment plants zero-liquid discharge systems.

The committee also discussed safeguards to ensure sustained project development throughout the concession period rather than allowing developers to front-load revenues through early land monetisation.

Project authorities accepted several recommendations, including greater clarity on technical specifications, uniformity in qualification criteria and improved provisions relating to termination payments. The PM MITRA scheme aims to develop integrated textile parks with world-class infrastructure, plug-and-play manufacturing facilities, common utilities, worker housing, logistics support and skill development centres, helping strengthen India's position as a global hub for textile and apparel manufacturing. The PM MITRA parks will be implemented through the PPP model for the first time. ■

Benefits of growth in J&K textile sector bypasses weavers

Even as the Union government projects robust growth in Jammu and Kashmir's textile and apparel sector, weavers and industry representatives say the benefits have largely bypassed artisans.

Replying to a question in the Rajya Sabha, the Ministry of Textiles said the sector employed over 2.31 lakh people in 2023-24, up from 1.96 lakh in 2021-22. It also said that exports crossed ₹850 crore in 2025-26, reflecting steady growth in the sector.

Ground Reality

On the ground, however, artisans say the official numbers do not reflect their lived reality.

Mohammad Amin, who runs a handloom unit in Srinagar, said that poor remuneration had driven many skilled weavers away from the profession.

"The younger generation has almost stopped continuing with the craft," he said, adding that the years of training and labour required are not matched by adequate returns. Weavers cited the example of the traditional Kani shawl, which can take more than six months to weave. For completing one shawl, a weaver

earns between ₹35,000 and ₹40,000, translating into a monthly income of about ₹6,000-₹7,000.

"No one can sustain a family on such earnings," said a group of weavers.

Merger Impact

Artisans also blamed administrative changes after the abrogation of Article 370 in 2019 for the sector's decline.

They said the merger of the Handloom and Handicrafts Departments diluted the focus on handloom and affected the implementation of schemes meant exclusively for the sector.

"The handloom sector became just another craft after the merger. The department was already handling several handicrafts, and handloom did not receive the attention it required," Amin said.

Rakesh Kumar Sharma, President, Coordination Committee of Handloom Cooperative Societies Association, said artisans had repeatedly urged the government to go back to a separate handloom department.

"We have met the authorities seeking a demerger, but there has been no concrete action thus far," he said. ■

Little shoppers emerge as Indian apparel's biggest growth story

Changing parenting choices and rising aspirations are turning kidswear into one of the fastest-growing segments in India's apparel market, pushing brands to diversify offerings and strengthen inventory. Kidswear is increasingly becoming a lifestyle-led consumption category. The trend is driven by rising disposable incomes, premiumisation, growing fashion awareness among parents, and children having a greater influence on buying decisions.

Industry players observed that the segment is expanding across categories — casualwear, ethnicwear, activewear, and licensed merchandise — while creating opportunities for both established players and regional brands.

According to the Clothing Manufacturers Association of India (CMAI), the Indian kidswear market was valued at around ₹2 trillion in 2024 and is projected to grow at a compound annual growth rate (CAGR) of 9.4 per cent between 2024 and 2029. This reflects a rapidly expanding trend, surpassing the expected growth in menswear at 8.4 per cent and womenswear at 8.9 per cent.

"Kidswear is the fastest-growing segment within apparel," said Rahul Mehta, chief mentor, CMAI. "While organised retail is gaining share, the category remains largely controlled by Indian labels." For Indian retail chain Shoppers Stop, kidswear has emerged as one of its strongest-performing categories. The retailer views young families as a key consumer group. The company recently launched Fratini Girl, a private-label girlswear brand targeted at 4 to 14 age group, similar to its existing boyswear private label Stop.

Kavindra Mishra, managing director and chief executive officer (CEO) of Shoppers Stop, said. "We have integrated dedicated kids' play zones and gaming areas within stores to create a family-friendly shopping experience."

Italian fashion brand United Colors of Benetton is also doubling down on the

category. Under the brand, kidswear already contributes nearly 30 per cent of sales at the company's family-focused stores in India. "We have consistently maintained a leadership position in the category, with Benetton Kids remaining one of the most preferred brands across online market-places, as well as multi-brand and large-format retail environments," said a spokesperson for Benetton India.

Benetton is also looking beyond major metropolitan centres. The company plans to deepen its presence across Tier-I and Tier-II markets while evaluating emerging consumption hubs. Similarly, homegrown companies are also betting on the segment. Pune-based Peppermint Kids, which operates through more than 1,200 outlets, reported annual growth of 12-15 per cent over the past two to three years. The company is even more bullish about the future, projecting annual growth of 20-25 per cent over the next five years. Ashish Katariya, CEO of Peppermint Kids, said. "Most of this growth will be driven by new category expansion and the launch of direct-to-consumer or omni-channel-led exclusive brand outlets across geographies."

Maharashtra-headquartered Romano Apparels-owned brand Little Kangaroos has recorded healthy double-digit growth in recent years. Arun Lalwani, director, Romano Apparels, said the company operates seven exclusive brand outlets, has a presence in more than 650 multi-brand outlets, and sells on platforms such as FirstCry.

Yet, despite its growth prospects, kidswear remains a challenging space to crack. CMAI points out that the segment requires managing 10-12 size variations compared with a much smaller size matrix in adult apparel.

The market is also highly fragmented. Regional brands often outperform national labels because they cater to local tastes and preferences. According to CMAI, organised players account for roughly 30 per cent of the market, while regional and MSME-led brands command nearly 70 per cent. ■

EXPLORING THE THERAPEUTIC ROLE OF FABRICS IN ENHANCING PSYCHOLOGICAL AND PHYSIOLOGICAL WELL-BEING

Prof. Radha Kashyap,

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ABSTRACT

The relationship between textiles and human well-being extends far beyond function and fashion. This paper explores the therapeutic potential of textiles, investigating how fabric properties, textures, colours, and embedded technologies contribute to psychological, emotional, and physiological healing. Through interdisciplinary perspectives such as psychology, neuroscience, anthropology, and textile science; the paper discusses the concept of “healing textiles,” which delves into historical and cultural uses, analyzes empirical research. It proposes frameworks for integrating therapeutic textiles in healthcare, mental health interventions, and everyday well-being practices. The study also highlights innovative developments in smart and bio functional textiles, emphasizing their potential in stress reduction, pain relief, trauma recovery, and emotional regulation. Finally, it identifies future research areas and practical applications in clinical, domestic, and fashion domains.

KEYWORDS: *therapeutic textiles, healing fabrics, textile psychology, emotional well-being, bio functional fabrics, smart textiles, textile therapy, sensory comfort*

INTRODUCTION

Textiles have played an essential role in human life, not only as a necessity for protection and adornment but also as tools of emotional and physical comfort. In recent years, researchers and designers have increasingly explored the healing capacities of textiles, leading to a growing interest in “therapeutic textiles.” These fabrics interact with the human body and psyche, potentially promoting emotional regulation, relieving stress, supporting trauma healing, and even addressing physical ailments.

The tactile relationship between humans and textiles begins from birth and continues throughout life. Whether it’s the soothing feel of a baby blanket, the comforting hug of a weighted vest, or the mood-enhancing properties of certain colours and textures, textiles influence sensory experiences and psychological states.

HISTORICAL AND CULTURAL BACKGROUND OF HEALING TEXTILES

Throughout history, textiles have played a significant role in cultural rituals and healing

practices across various regions. In Indigenous communities such as those of Native America, the Andes, and parts of Africa, handwoven textiles were integral to ceremonial life and spiritual healing. These fabrics are often imbued with symbolic meanings and believed to possess protective powers, spiritual energy, and the ability to transmit blessings to the wearer.

In India, the tradition of *Ayurveda* offers a striking example of textile-based healing. These garments are infused with herbal preparations made from medicinal plants like neem, tulsi, and sandalwood, and were traditionally worn by individuals seeking relief from ailments such as skin disorders and inflammatory conditions. The synergy of herbal medicine and cloth create a holistic treatment approach rooted in ancient wisdom. By the 20th century, textile crafts such as knitting, weaving, and quilting emerged as therapeutic tools within modern psychological and occupational therapy settings. These practices are increasingly recognized for their capacity to support trauma recovery, enhance emotional regulation, and foster a sense of community and identity. These historical and cultural applications have laid the groundwork for the contemporary development of textile-based therapy—a multidisciplinary field that explores the intersection of fabric, wellness, and psychological well-being.

TEXTILES AND THE PSYCHOLOGY OF TOUCH

Touch is a foundational sense in human development, closely linked to emotional regulation and psychological well-being. The concept of *affective touch*—gentle, soothing physical contact—has been shown to stimulate the release of oxytocin, reduce cortisol levels, and activate parasympathetic nervous system responses, thereby promoting calm and emotional stability (Field, 2010). As textiles are among the most frequent tactile stimuli encountered in daily life, they play a significant role in shaping affective experiences and emotional states.

TEXTURE AND SENSORY COMFORT

The tactile quality of a fabric—its texture, softness, and pliability can significantly influence psychological comfort. Soft, plush, or finely woven

EXPLORING THE THERAPEUTIC ROLE OF FABRICS IN ENHANCING PSYCHOLOGICAL AND PHYSIOLOGICAL WELL-BEING

textiles are often associated with feelings of safety, relaxation, and emotional ease. Conversely, rough, scratchy, or synthetic materials may elicit discomfort, irritation, or even heightened anxiety, particularly in individuals with sensory sensitivities.

One widely recognized application of this principle is the use of weighted blankets, which utilize deep pressure stimulation to create a calming effect. By mimicking the sensation of a gentle embrace, these textiles have been shown to alleviate symptoms in individuals with anxiety disorders, autism spectrum conditions, and sensory processing challenges (Gee et al., 2019).

THERMAL REGULATION AND EMOTIONAL WARMTH

Thermal sensation is another critical dimension of tactile experience with profound psychological implications. Warmth, whether experienced physically or metaphorically, is closely linked to feelings of safety, belonging, and social connection. Textiles such as wool, fleece, and advanced thermal-regulating fabrics help maintain body warmth, thereby fostering a sense of comfort and emotional security.

Empirical studies suggest that physical warmth can enhance perceived social warmth, reduce feelings of loneliness, and promote interpersonal trust. Bargh and Shalev (2012) demonstrated that warm physical environments or objects such as heated textiles can positively influence mood and social perception, further emphasize the psychological impact of temperature in textile experiences.

COLOUR, MOOD, AND TEXTILE THERAPY

The psychological impact of colour is a well-established area of study, particularly within environments aimed at healing and wellness. Textile design in therapeutic and clinical settings increasingly incorporates principles of colour psychology to influence mood, reduce stress, and support emotional regulation.

For example, blues and greens are commonly associated with tranquility, healing, and calm are frequently employed in hospital linens and therapy rooms. Their soothing properties have been linked to reduced anxiety and lower heart rates, making them ideal for high-stress environments. Warm neutrals, such as beige, taupe, and soft browns, evoke feelings of safety, stability, and grounding,

contributing to an emotionally secure atmosphere. Conversely, bright colours when used judiciously can stimulate energy and uplift mood, and are sometimes integrated into therapeutic interventions for individuals dealing with depression or fatigue.

Textile designers have increasingly embraced *chromotherapy* (or colour therapy), an alternative healing method that uses colour to balance energy and emotions. This approach has influenced the development of fabrics dyed using natural botanical processes, which are not only sustainable but also carry symbolic and therapeutic resonance. These naturally dyed textiles can embody emotional states and foster deeper psychological connections. One notable application of chromotherapy in practice is at Khoo Teck Puat Hospital in Singapore, where the interior design including textiles used in bedding and curtains was carefully curated to incorporate pale blues and earthy tones. This chromatic strategy was grounded in research demonstrating the calming effects of blue hues on heart rate and anxiety levels. The result is a visually and emotionally supportive environment that reflects a growing trend toward evidence-based design in healthcare.

By aligning colour science with textile design, chromotherapy continues to shape how we think about fabrics not only as functional or decorative elements but also as tools for emotional and psychological healing.

ART THERAPY THROUGH NATURAL TEXTILE DYEING

Among emerging therapeutic practices, natural dyeing is gaining recognition as a form of art therapy that combines sensory engagement with personal transformation. One such initiative, The Color Me Happy Project in the United Kingdom, exemplifies this approach. Designed specifically for trauma survivors, the programme offers workshops where participants create hand-dyed textiles such as scarves using natural dyes such as indigo and turmeric. These sessions go beyond craft, inviting individuals into a multisensory process that engages touch, sight, and even smell.

Through the ritual of dyeing, participants create objects that hold symbolic meaning each colour and pattern reflecting aspects of their emotional journey. Indigo, often associated with calm and introspection, and turmeric, symbolizing warmth and vitality, are chosen not only for their aesthetic

qualities but for their therapeutic resonance. This tactile, slow-making process fosters mindfulness, grounding participants in the present moment. The act of transforming plain fabric into something deeply personal allows for emotional release, self-expression, and the reclaiming of agency core objectives in trauma-informed care.

Programs like The Color Me Happy Project highlight how textile dyeing can be reframed as a therapeutic dialogue between material, colour, and emotion offering a gentle yet profound path toward healing.

BIO FUNCTIONAL AND SMART TEXTILES IN HEALING

Advancements in textile science and emerging technologies are transforming the role of fabrics from passive materials into active agents of health and emotional well-being. Among these innovations, bio functional textiles stand out as a promising frontier in therapeutic and medical applications.

BIO FUNCTIONAL TEXTILES

Bio functional textiles are engineered to deliver specific biological effects, offering not only comfort but also active support in promoting health. These fabrics are imbued with substances that interact with the body in beneficial ways, making them ideal for use in clinical, wellness, and everyday settings.

The key applications include:

- ✦ **Antimicrobial fabrics** used in wound care and post-operative garments help reduce infection risk and promote healing.
- ✦ **Herbal-infused textiles** designed to soothe irritated skin, relieve stress, and foster relaxation are being explored for wellness and mental health benefits.
- ✦ **Phase-change materials (PCMs)** incorporated into garments help regulate body temperature, offering relief for individuals experiencing chronic pain, inflammation, or menopausal symptoms.

A notable innovation in this field is by the Japanese company Seiren Co. Ltd., which developed a series of bio functional textiles under the brand VIREX™. These textiles incorporate medicinal plant extracts directly into the fibers of underwear and bedding. Users have reported improved skin conditions and enhanced sleep quality. Currently,

VIREX™ products are undergoing trials in eldercare facilities, where they show potential in enhancing comfort and preventing infections among vulnerable populations.

By combining traditional healing knowledge with cutting-edge textile engineering, bio functional fabrics are reshaping the future of healthcare and personal well-being. These smart textiles exemplify how material science can move beyond aesthetics and function to actively participate in therapeutic processes.

SMART TEXTILES AND NEURO-RESPONSIVE CLOTHING

Smart textiles are fabrics embedded with sensors, actuators, or conductive fibers represent a significant advancement in wearable technology, offering new frontiers in healthcare, emotional regulation, and sensory therapy. These responsive garments are designed to interact with the body, collecting data and, in some cases, delivering interventions in real time.

Among the most promising developments are emotion-sensing garments, which detect physiological signals such as heart rate variability and galvanic skin response to monitor stress, anxiety, or emotional dysregulation. These textiles serve not only as passive wearables but as active participants in biofeedback loops that help users become more attuned to their internal states.

Other innovations include vibrational textiles that deliver subtle, calming sensory input. These are particularly beneficial for individuals on the autism spectrum or those experiencing post-traumatic stress disorder (PTSD), offering discreet, non-invasive ways to regulate sensory input and reduce overstimulation. In the realm of physical comfort, thermally adaptive and massaging wearables are being used to ease chronic pain, menstrual cramps, and anxiety. These garments deliver targeted heat or gentle pressure in response to biometric signals, providing a tailored therapeutic experience.

A leading example in this space is Sensoria Health, which has developed smart socks and garments equipped with embedded sensors capable of tracking heart rate, step count, and emotional response. Paired with companion mobile applications, these textiles offer users—especially those managing chronic diseases or emotional

EXPLORING THE THERAPEUTIC ROLE OF FABRICS IN ENHANCING PSYCHOLOGICAL AND PHYSIOLOGICAL WELL-BEING

disorders—insight into their physiological and emotional patterns. By visualizing this data, users can make informed choices and engage in real-time stress management. The convergence of neuroscience, textile engineering, and digital health in smart clothing is reshaping how we think about fashion. It is not merely as a means of self-expression, but as an active interface between the body, mind, and environment.

TEXTILE-BASED INTERVENTIONS IN MENTAL HEALTH AND TRAUMA RECOVERY

Textiles have transcended their traditional utilitarian roles to become powerful tools in mental health care and trauma recovery. Increasingly integrated into therapeutic practices, textile-based interventions harness tactile engagement, sensory regulation, and cultural traditions to support psychological well-being.

WEIGHTED BLANKETS AND PTSD

Weighted blankets have gained significant clinical attention for their calming effects on individuals experiencing anxiety, post-traumatic stress disorder (PTSD), and sleep disturbances. By applying gentle, evenly distributed pressure across the body often referred to as *deep touch pressure stimulation*—these blankets mimic the sensation of being held or hugged. This somatic experience has been linked to reduced physiological arousal, improved sleep quality, and heightened emotional grounding (Champagne & Mullen, 2012). As such, they are now widely recommended in trauma-informed care settings and psychiatric therapy.

TEXTILE CRAFTS IN TRAUMA THERAPY

Engagement in textile crafts such as knitting, crocheting, quilting, and weaving has emerged as a valuable therapeutic practice. These activities promote mindfulness, enhance focus, and facilitate emotional expression through repetitive, rhythmic motion. It is used in both individual and group therapy settings; textile crafts serve as effective non-verbal tools for trauma processing.

Key applications include:

- ✧ **Art therapy for trauma survivors**, where crafting allows safe exploration of emotional memories.
- ✧ **Community healing projects**, such as collaborative quilts created by survivors of abuse or violence, which symbolize collective resilience and shared storytelling.

- ✧ **Occupational therapy**, where crafts are integrated into treatment for depression, anxiety, and neurocognitive disorders.

Therapist-led knitting circles have become increasingly common in mental health facilities and correctional institutions across the UK and the US. Research from the *Knit for Peace* initiative indicates that regular participation in knitting can significantly reduce symptoms of depression, enhance social connectivity, and support cognitive functioning—particularly among older adults.

A powerful example of textile-based trauma recovery is seen in the work of the **Threads of Life Foundation** in Indonesia. This organization empowers women survivors of domestic violence by teaching them traditional weaving techniques. Through this culturally grounded craft, participants regain a sense of agency and self-worth. Their handcrafted textiles are marketed globally, transforming a healing practice into a means of economic empowerment. These tactile and creative interventions provide trauma survivors with a medium for emotional expression, regulation, and reclamation of control. In many cases, the process of making becomes as meaningful as the product itself fostering restoration, resilience, and reintegration into the community.

ANTHROPOLOGICAL PERSPECTIVES ON TEXTILE-BASED HEALING PRACTICES

Throughout history and across cultures, textiles have played a profound role not only in meeting physical needs but also in expressing identity, facilitating care, and offering spiritual protection. Healing through cloth is a deeply embedded cultural practice, where fabric becomes both a material and symbolic agent of transformation.

In **Tibetan culture**, ceremonial scarves known as *khatas* are imbued with the power of blessing. Scarves are offered during births, departures, and religious rites. They represent goodwill, compassion, and spiritual support. In **West Africa**, particularly among the Akan people of Ghana, *kente cloth* carries deep healing and protective symbolism. The intricate patterns and vibrant colors are more than decorative—they encode philosophical messages, ancestral wisdom, and communal values, often worn during rites of passage and moments of personal or collective healing.

Japanese textile traditions, such as the use of *furoshiki*—versatile wrapping cloths—reveal a cultural emphasis on ritual care, respect, and spiritual continuity. These cloths are not merely functional but are treated with reverence, especially in funerary contexts. Here, *furoshiki* serve as spiritual guides, used to wrap the deceased as they transition to the afterlife, reflecting beliefs about the interwoven nature of cloth, spirit, and journey.

In many **African societies**, postpartum customs involve wrapping new mothers in “protective cloths”. It is believed that textiles shield the body and also enacting rituals of spiritual cleansing and renewal. These practices illustrate that the fabric has a dual role in both physical and metaphysical healing. Textiles act as vessels of memory, identity, and emotional restoration. They carry stories, encode symbols, and connect generations through shared practices of care and protection. Whether draped, wrapped, worn, or gifted, healing textiles remind us that fabric is far more than fiber—it is culture, spirit, and legacy woven into form.

FUTURE PROSPECTS

Advancements in material science and a growing understanding of colour psychology deepen the therapeutic potential of fabrics. One of the most promising frontiers is the development of **smart textiles**; fabrics embedded with sensors or responsive systems that actively monitor and adapt to the wearer’s physiological state. Innovations such as **bio-sensing garments** that detect stress markers, **temperature-regulating active wear**, or **fabric-integrated aromatherapy** represent a future where clothing not only protects and adorns but also participates in health management and emotional regulation. Ultimately, the thoughtful integration of colour and fabric design offers a powerful, non-invasive approach to supporting mental and physical health, underscoring the essential role of textiles in holistic healing strategies.

CONCLUSION

Textiles are not simply passive objects; they are active participants in shaping the emotional, psychological, and physical states of individuals. Whether through historical practices, cultural

beliefs, or modern technological innovations, textiles have been an integral part of healing. From ancient spiritual cloths to modern-day wearable tech, the potential of textiles to promote well-being is vast and continues to grow. As research into therapeutic textiles evolves, the potential for healing and comfort through fabric is boundless.

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SUSTAINABLE INNOVATIONS IN CROCHET THROUGH UP-CYCLING LEFTOVER YARN

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ABSTRACT

In today's rapidly changing world, the environmental impact of consumer behavior is increasingly scrutinized, prompting a shift toward sustainable practices that prioritize handmade goods over mass-produced items. Crochet, an age-old craft that involves creating fabric by interlocking yarn using a hook, embodies this shift by offering a personal touch and artistic flair. This study aims to investigate the process of up-cycling yarn scraps into attractive earrings, thereby demonstrating how crafters can repurpose what would otherwise be waste into desirable products.

The study involves preparing leftover yarn scraps, selecting suitable crochet products, and designing unique earring styles, followed by a survey to assess consumer satisfaction and market potential. The results reveal a significant inclination toward the crochet earrings, illustrating their aesthetic attractiveness and commitment to sustainability, thereby showcasing crochet as a commercially viable option that adheres to environmental principles.

Keywords: crochet, sustainability, up-cycling, leftover yarn, craftsmanship, innovation

Introduction

The Earth today is grappling with severe environmental challenges due to the reckless activities of human kind, pushing it into survival mode. Even the smallest irresponsible actions can result in irreversible damage, making the adoption of sustainable practices the need of the hour. In the pursuit of sustainability, prioritizing handmade goods over machine-produced alternatives, to the greatest extent possible, represents an insightful strategy. Handmade creations combine artistic expression with environmental responsibility, by lowering the carbon footprint of production. Remarkably, the global market has witnessed resurgence in handmade goods, fueled by consumers' growing preference for unique, artisanal products.

Crochet, an age-old technique of making fabric using a hook to interlock loops of yarn, has gained considerable popularity in this handmade revolution. Deriving from a French word which literally translates to 'a small hook', crochet has a rich history spanning centuries, evolving across cultures and eras. "The technique was known in Britain by the end of the eighteenth century, and the

great variety of modern crochet stitches developed during the Victorian period" (Harris, 1993).

Entering the 21st century, crochet has flourished anew, dazzling with its timeless elegance now graced by modern sophistication. Social media platforms such as Instagram, You Tube and Pinterest are thriving as bustling centers for crochet devotees, playing a vital role in the revival of this beloved craft.

Crochet work typically begin with a foundational chain, initiated by placing a slip-knot loop onto the hook and subsequently drawing another loop through the preceding loop. This process is repeated to achieve a chain of desired length. Alternatively, a magic ring or simple folding over the yarn can be used as starting methods. The basic crochet stitches include chain stitch (ch st), slip stitch (ss), single crochet (sc), double crochet (dc), treble (tr), double treble (dtr) and triple treble (tr tr). Advanced stitches such as feather stitch, camel stitch, jasmine stitch, braid stitch, star stitch and angel stitch often incorporate combinations of these basic stitches (Gakuen, 2014).

Yarn choices for crochet are diverse, ranging from natural and synthetic fibers to dyed or un-dyed options, spun in various degrees from fully spun to partially spun or un-spun, and may feature novelty and metallic yarns. This versatility in techniques and materials create a wide array of items, from small amigurumi creations to large, intricately designed clothing pieces and accessories.

Annie Leonard, an American proponent of sustainability and a critic of consumerism, powerfully states, "There is no such thing as 'away'. When anything is thrown away, it must go somewhere" (Earth.Org, 2024). This notion highlights the critical issue of textile waste generated from crafting activities. The accumulation of yarn scraps from completed crochet projects may lead to ecological concerns.

Thus, the aim of this study is to explore the potential for reusing leftover yarns, which result from the production of larger crochet items such as bags and apparel, through up-cycling practices, presenting a sustainable strategy for waste reduction. By repurposing these colorful remnants creatively, crafters can substantially reduce their waste output while supporting suitable practices. This initiative promotes innovation and

SUSTAINABLE INNOVATIONS IN CROCHET THROUGH UP-CYCLING LEFTOVER YARN

resourcefulness within the crafting community, encouraging individuals to treat waste materials as precious assets for new creations. Ultimately, this transformation in perspective aligns with broader sustainability goals and promotes eco-conscious behaviors among crafters.

Methodology

► Preparation of Yarn Scraps

The initial step involved winding all small yarn scraps into manageable balls. This process was essential for preventing tangling and ensuring a smooth crocheting experience. Although the hand-winding technique was employed, it is worth noting that a yarn ball winder could have been utilized, providing a more efficient means of transforming leftover yarn into organized balls. A variety of yarn ball winders suitable for this purpose are available in the market. Once wound, the yarn balls were stored in a container to keep them organized and easily accessible for crafting.

► Selection of Products to be produced

A detailed assessment of the yarn quantities and color palette was conducted during this phase. This evaluation was vital for identifying the types of crochet products that could be realistically completed with the available materials. Based on the assessment results, a list of possible crochet products were developed, encompassing a variety of items, including coasters, key chains, coin purses, bookmarks, miniature amigurumi, headbands, potholders, scrunches, cable organizers, and earrings. After informal discussions and careful consideration of the materials and the potential for various products, earrings were ultimately selected as the final crochet product. This decision was shaped by the enduring appeal of earrings as a fashionable accessory for women.

► Materials Required for Crochet Earrings

The creation of 10 pairs of earrings was executed, utilizing a 1.3 mm crochet needle and a six-ply tightly twisted cotton yarn, which were produced by the researcher while making larger products like bags. This yarn, traditionally referred to as tatting thread, is renowned for its versatility and is commonly used in creating edgings, laces, table runners, and various home décor items.

► Design and Creation Process

During the design process, significant consideration was given to both the size of the earrings and the color combinations employed. This thoughtful approach resulted in unique pieces that

were both functional and aesthetically pleasing, catering to a broad audience.



Plate 1: Crochet Earrings Development

► Assessment of Developed Products

An offline survey was conducted using a closed-ended questionnaire to obtain feedback on the crochet earrings. The questionnaire focused on assessing the earrings' overall appearance, color combinations, size and finishing quality. The study involved a sample size (N) of 40 participants, primarily comprising college-going-girls, with 79% aged between 18 to 22 years and 21% between 22 to 35 years. The survey responses were collected on a 5-point rating scale, with 5 representing Excellent, 4 representing Good, 3 representing Average, 2 representing Poor, and 1 representing Very Bad. The purpose of the survey was to pinpoint strengths and opportunities for enhancement, providing essential insights to guide future design and production decisions for the earrings.

Results and Discussion

A total of ten pairs of uniquely designed crochet earrings were developed, each featuring a distinct design. Two of the earrings were inspired by sunflower; one was designed with traditional sunflower petals, while the other featured a granny square sunflower pattern. The third design incorporated a metal hoop adorned with five tiny flowers, each centered with a white pearl. The fourth and fifth pairs were characterized by a classic five-petal flower, and the sixth design offered a playful twist with a whimsical slice of watermelon. The seventh pair was inspired by mandala patterns, while the eighth pair was designed to resemble a strawberry. The ninth pair featured a lemon slice design, and the tenth pair was influenced by the overlapping patterns of swirling galaxies. This assortment exemplified creativity and aimed to resonate with various consumer preferences.

SUSTAINABLE INNOVATIONS IN CROCHET THROUGH UP-CYCLING LEFTOVER YARN

Table 1 Details of Earrings Developed

Sr. No.	Developed Earrings	Inspired from	Stitches Used
1		Sunflower	ch, sc, hdc, dc, tr, sl st
2		Sunflower	dc, ch, sl st
3		Flower	MR, ch, sc, hdc, dc
4		Flower	MR, ch, sc
5		Flower	MR, ch, dc, tr
6		Watermelon	MR, sc, dc
7		Mandala Patterns	MR, ch, sc, dc
8		Strawberry	MR, sc
9		Lemon	MR, sc
10		Galaxy Swirls	ch, dc, sl st

SUSTAINABLE INNOVATIONS IN CROCHET THROUGH UP-CYCLING LEFTOVER YARN

Plate 2 Developed Crochet Earrings



Earring 1



Earring 2



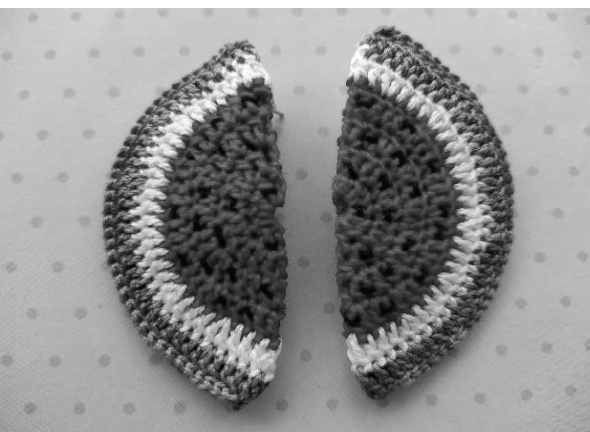
Earring 3



Earring 4



Earring 5



Earring 6

SUSTAINABLE INNOVATIONS IN CROCHET THROUGH UP-CYCLING LEFTOVER YARN



Earring 7



Earring 8



Earring 9



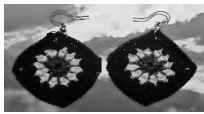
Earring 10

Preference and Acceptance of Developed Earrings

The findings of the survey underscore the significant appeal and market potential of the crochet earrings developed from leftover yarn scraps. The survey results indicated a high level of satisfaction among participants, as shown in Table 1 below:

All participants rated products 1 and 3 as “Excellent”, which highlights the effectiveness of the design and craftsmanship. Notably, aspects such as finishing, size, and color combinations received a remarkable 100% rating across all products, reflecting exceptional quality and alignment with consumer preferences. Products 4 and 5 also received high ratings of 97% and 99%, respectively.

Table 2: Ratings of Crochet Earrings

Earring Number	Product	Score Given by Respondents
1		200
2		195
3		200

SUSTAINABLE INNOVATIONS IN CROCHET THROUGH UP-CYCLING LEFTOVER YARN

Earring Number	Product	Score Given by Respondents
4		199
5		195
6		200
7		200
8		200
9		200
10		199

Cost Calculation

Following the survey, a cost analysis was conducted for each pair of earrings, concentrating on the time invested in their production and preference of design by respondents. This analysis is crucial for setting competitive pricing that ensures profitability while remaining accessible to customers. The pricing for the earrings was determined as follows:

Table 3. Pricing of Crochet Earrings

Product	Time Consumed (Hours)	Price(₹)
Product 1	2.5	299
Product 2	1	199
Product 3	2	299
Product 4	1.5	199
Product 5	1.5	199
Product 6	2	299
Product 7	1.5	199
Product 8	2.5	299
Product 9	1.5	199
Product 10	1.5	199

Exhibition Performance

During the Kalakruti 2024 annual exhibition at SNDT Women's University, Juhu, the earrings were showcased for sale. Remarkably, all pairs of earrings were sold within one hour, affirming the high demand and marketability of the products.

Conclusion

The transformation of leftover yarn scraps into sustainable products highlights how creativity can contribute to environmental responsibility. By crafting functional items like bags, coasters, along with decorative pieces such as wall hangings, these scraps gain a second life. Embracing up-cycling practices minimizes waste and encourages a sustainable mindset within crafting communities. Each small act of repurposing materials serves as a drop that contributes to the ocean of sustainability, collectively fostering a healthier planet. Throughout the research, the strong attraction to crochet products was evident, with women of all ages showing enthusiasm for the species. This wide spread appreciation underscores crochets potential as a market able and sustainable product, combining both aesthetic appeal and eco-conscious values.

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DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

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ABSTRACT

Plastic pollution has become a serious environmental issue. Consistently accumulating mountains of disposable plastic waste poses a challenge to the world. Pre-consumer waste is the reintroduction of manufacturing scrap back into the manufacturing process. In the present study the respondents belonged to various age groups. All the respondents were from Jalandhar city and its adjoining villages. 10 original designs were developed by using CAD software i.e., coral draw. The pre-consumer textile waste was collected from boutiques of Jalandhar and adjoining villages. Then from this waste, bags were developed under two categories i.e., vegetable bags and grocery bags. The size of both bags was 16"×17". Different techniques were used to embellish them i.e., fabric painting, patchwork and couching. The estimation of cost of these tote bags was done. Then to check the consumer acceptability of these bags a questionnaire was developed and administered to 50 respondents selected from Jalandhar district by purposive random sampling. Data obtained from the survey was coded, tabulated and expressed in frequency and percentage. The percentage was calculated to find out the acceptability of the bags. 100% of the respondents found the vegetable bag to be a good substitute for plastic bags. 100% of the respondents found the vegetable bag pockets being appropriate for intended use and some respondents offered suggestions like the size of the vegetable bag should be increased and avoiding the use of white fabric. Possibility of using these bags in multiple end uses was explored. This suggestion was fruitful with a meaningful outcome.

Keywords : Eco-fashion, Patch-work, Plastic pollution, Pre-consumer waste, Sustainability.

Introduction

1.1a : What is Plastic Pollution?

Plastic pollution has become one of the most pressing environmental issues, as rapidly increasing production of disposable plastic products overwhelms the world's ability to deal with them. Plastic pollution is most visible in developing Asian and African nations, where garbage collection systems are often inefficient or nonexistent. (Parker, 2019).

1.1 b : Damaging Impact on Environment due to use of Plastic Bags

People are using plastic bags, which are environmentally dangerous products, for their daily needs mainly for shopping purposes as a result of which, the environment and agricultural lands are thereby being polluted. (Jalil, Mianand and Rahman, 2013)

1.2 : What is Sustainable Fashion ?

Sustainable fashion is the movement and process of creating clothes, shoes, accessories and other textiles through sustainable practices that take into account environmental, social and economic implications. Therefore, sustainable fashion looks beyond product and fabric waste, taking instead a holistic approach to fashion and its interactions with all other systems - social, cultural, ecological and financial. As such, sustainable fashion considers not only users and producers but all living species, present and future generations. (Gongini, 2017)

1.3 : What is Eco - Fashion ?

Eco is short for ecology, or the study of interactions between organisms and their environment. Eco-fashion is any brand or line that attempts to minimize the impact on the environment, and often the health of the consumers and the working conditions for the people that are making the clothes. (Sunday, 2016) Many responsible citizens pride themselves in wearing their values on their sleeves by purchasing environmentally friendly clothes. (Brookbanks, 2011)

1.4 : What is Slow Fashion ?

Slow fashion is the deliberate choice to buy better-quality items less often. When purchases are made, they're environmentally and ethically conscious rather than trend-driven. The garments are durable and lend themselves to repairs, not disposal. Slow fashion is also transparent : Buyers know where their clothes are coming from, and items are often handmade by artisans. (Milnes, 2015)

1.5 : What is Fast Fashion?

Fast fashion can be defined as a cheap, trendy clothing, that samples ideas from the catwalk or celebrity culture and turns them into garments in high street stores at breakneck speed. (Rauturier, 2018) Fast fashion is the term used to describe clothing designs that move quickly from the catwalk

to stores to meet new trends. The collections are often based on designs presented at fashion week events. (Kenton, 2019)

1.6a : What is a Carbon Footprint?

Carbon footprint is the overall amount of greenhouse gas emissions, consisting primarily of carbon dioxide, associated with an organization, event or production. It is one of the most

common measures of the effect of an individual, community, industry, or country on the environment. (Spelch, 2016)

1.6b : Carbon Footprint Reduction

Carbon footprints can be reduced through improving energy efficiency and changing lifestyles and purchasing habits. Switching one's energy and transportation use can have an impact on primary carbon footprints. For example, using public transportation, such as buses and trains, reduces an individual's carbon footprint when compared with driving. (Selin, 2020)

1.8a : Fabric Painting

Fabric paints are a permanent way to colour fabrics. They can be mixed to create new shades or we used straight from the pot, but it's best not to dilute them as you would water-based paints, and this reduces the pigmentation. (Ling, 2014)

1.8b : Colour

We live in a world of colour According to the various researches, the colour that surrounds us in our daily lives has a profound effect on our mood and on our behaviour. A colour can change our mood from sad to happy, from confusion to intelligence, from fear to confidence. (Kurt and Osueke, 2014)

1.8c : Eco - Friendly Colours

Research has confirmed that green makes the consumer lean towards the assumption of a brand eco-friendliness. Going green is the most common slogan for the environment friendly branding after all. Blue is greener than green terms of conveying an impression of eco - friendliness, despite the frequent use of the word green to convey that idea. (Rabida, 2015)

1.9 : Patchwork

Patchwork, also called piecing, the process of joining strips, squares, triangles, hexagons, or other shaped pieces of fabric (also called patches), by either hand or machine stitching, into square blocks or other units. (Brick, n.d.)

1.10 : What is a Tote Bag ?

Tote bags are made from a variety of materials ranging from cloth to leather to plastics to even papers. Packaging is an important aspect of the products and tote bags are the kind of secondary packaging. They are the unfastened bags having parallel handles for convenient carrying.

Aims and Objectives of study

1. To rescue textile waste fabric from going to the landfills.
2. Create an awareness towards prevention of pollution caused by plastic bags and providing substitute sustainable cloth bags made from textile waste.
3. To create eco-friendly sustainable logos by using coral draw.
4. Developing designs of tote bags with pre-consumer textile waste using the technique of patch-work.
5. To test the market acceptability of these bags.

Limitations of Study

For construction of bags only pre-consumer textile waste was used.

For testing of market acceptability only Jalandhar District was selected as locale.

Review of Literature

A review of related research serves an important purpose and helps the researcher at every step of his venture as a researcher to build appropriate methodology and design keeping in view the strength and failure of previous researchers. A review of literature provides useful hints for further research.

2.1 Patchwork

Debbabi, Sahnoun and Kordoghli, (2014) clearly depicted that clothing manufacture generates many kinds of wastes. The main purpose of this work was recycling fabric wastes. For this aim, they created new patchworks fabrics. Created patchworks were made using different sizes and shapes of patch templates. They also investigated three techniques for patchwork seaming. They have reported advantage of using large patches. However, small patches are appreciated to recover most quantity of wastes. In this study they have also anticipated the use of patchwork fabric in clothing design.

According to Badoe and Frimpong, (2015) their work explored innovative techniques in printed textile design as means of introducing

DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

creativity and providing new and varied ways of decorating textile materials. Art studio-based research design was used under which exploration and experimental methods were adopted in the execution of these works. Some innovative techniques applied were spray printing, sponge and broomsticks printing, twigs block printing, marble printing, bottle printing, brush printing, lace transfer and fabric painting.

METHODOLOGY

The methodology is the scientific way of conducting research so that the study is reliable and conducted with accuracy.

Section: 3.1 : Locale of The Study

Section: 3.2 : Designing Process

(a) Development of Sustainable Fashion Logos(SFL)

Section: 3.3 : Preparation of Products(BAGS)

3.3.1: Collection of raw material and sorting

3.3.2: Development of tote bags under two categories i.e., vegetable bags and grocery bags

3.3.3: Estimation and cutting/placement of fabric scraps

3.3.4: Attachment of pasting

3.3.5: Tracing of Logos and hand painting

3.3.6: Construction of tote bags and decoration with couching

3.3.7: Attachment of slings and tassels

3.3.8: Costing

Section: 3.4 : Techniques Used

3.4.1: Fabric painting

3.4.2: Patchwork

3.4.3: Couching

Section: 3.5 : Market Acceptability

3.5.1: Development of Questionnaire

3.5.2: Execution of Questionnaire

Section 3.6 : Results and analysis

3.1 : Locale of Study

The questionnaire-cum- interview schedule was administered to a mixed group of consumers of groceries and vegetables selected by purposive random sampling. The respondents belonged to various age groups i.e., elderly men and women, teenagers, middle-aged men and women. All the respondents were from Jalandhar city and its adjoining villages.

3.2 : Designing Process

(a) Development of sustainable Fashion Logos:

Available designs were searched on the internet, magazines, books to consider the availability of existing designs. 10 original designs were developed by using CAD Software i.e., Coral Draw 7 and Photoshop version 7.0.

3.3 : Preparing Products

3.3.1 : Collection of Raw Material and sorting

As per the principles of art and design, colour coding and sorting of textile waste was done. Various techniques were experimented with to create patchwork bags. Textile waste scraps (pre-consumer textile waste) were collected from boutiques of Jalandhar and adjoining villages.

3.3.2 : Development of tote bags under two categories i.e., vegetable bags and grocery bags

1. Vegetable bags: The size of vegetable bag was 16" x 17". Inside the vegetable bags, different pockets were attached with the inner lining as per the need of sorting various vegetables. Different sizes and shapes of pockets were made for the different vegetables so that polythene or other smaller bags were not needed and the vegetables do not mix into each other.

2. Grocery bag: The length and width of a grocery bag is also 16" x 17". In these bags plain lining from waste fabric was attached to finish the inner side and lining was attached such that seam allowances were not visible inside these bags.

3.3.3 : Estimation and cutting of fabric

To estimate the fabric required for each article the size of the bag was taken into account. Pieces were cut according to the bag measurement including seam allowances and bags were accordingly cut.

3.3.4 : Attachment of Pasting

After the estimation and cutting of the fabric according to the design, pasting was attached to all the pieces of the fabric by ironing.

3.3.5 : Tracing of logo and hand painting

After the pasting was attached to all the pieces of fabric then tracing of SFL was done with the help of yellow carbon paper. The portion selected for tracing the design was light so that the colour of the logo was clearly visible. The size of the said piece was also appropriate as per the logo. After the tracing painting was done with the help of acrylic colours and brushes.

3.3.6 : Construction of tote bags

The painted pieces were ready to be joined keeping the front and backside of the bag correctly. The lining was attached inside the bags and finishing was done.

3.3.7 : Attachment of slings and tassels

Slings were cut lengthwise and for some bags a braided sling was made, slings were then attached to the bag and some slings were made in a simple way and attached to the bags. Tassels were also made to beautify the bags. Some tassels were attached at the top of the bag near the slings, some were attached at the side of the bag and some were attached at the lower portion of the bag for extra decoration.

3.3.8 : Costing

After the construction of bags was done then the next step was the estimation of the cost of the tote bags. Stitching, designing, and labour were calculated as per cost in rupees. Adding the cost of painting, stitching, extra decoration and attaching pockets in vegetable bags was also calculated. Profit was then estimated to be 25% of the cost price of each bag. Thus, the estimated sale price of each bag was different depending upon inputs on each design.

3.4 : Techniques Used

3.4.1 Fabric painting

Freehand painting was used for logos. For fabric painting, acrylic colours were used in which blue and green colours were mostly used in all the logos because these colours depict eco-friendly sensibility.

3.4.2 Patchwork

Patchwork was used for the construction of the tote bags. Crazy quilting was used to decorate a few bags. Random sizes of big and small pieces were attached. Symmetric and asymmetric arrangements were made to create patchwork pieces.

3.4.3 Couching

Couching was also used for the purpose of highlighting some portions of the bags. Machine couching and hand couching were both done on the bags.

3.5 : Market Acceptability

3.5.1 Questionnaire

To check the consumer acceptability of the bags a questionnaire was made and was administered to

50 respondents selected randomly from Jalandhar district by purposive random sampling. Before executing the questionnaire, 10% respondents i.e., 5 persons were administered the questionnaire for pre-testing or pilot run. Any ambiguity or mistakes were thus removed. Questionnaires were filled by asking questions from the respondents. It was ensured that the respondents understood the language. Wherever required, vernacular translation was provided by the researcher.

3.5.2 Execution of Questionnaire

While executing the questionnaire great care was taken. Those respondents who didn't understand English language, for them the vernacular translation was provided by the researcher. If any respondent had any doubt the researcher clarified it. The researcher herself filled the questionnaire and ensured that there was no ambiguity or misunderstanding faced by the respondent.

3.6 : Result and analysis

Data obtained from the survey were coded, tabulated and expressed in frequency and percentage. The percentage was calculated to find out the acceptability of the bags.

RESULTS AND DISCUSSION

This chapter furnishes the results emerging out from the analysis of the data of the present investigation. The data have been organized and analyzed by taking into account the objectives of the study. All the pertinent information has been categorised and reported under the following major sections:

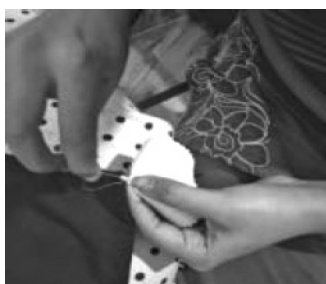
4.1 : Preparation of Sustainable Bags i.e. Vegetable bags and Grocery bags

To make the sustainable vegetable and grocery bags more attractive tassels were attached. After stitching the bags tassels were added. For making tassels the leftover textile scraps were used which remained after making the bags. Various types of shapes were cut out of the fabric scraps. Many were folded in a square pattern and from them circular shapes were generated. Then thread was passed from the centre to join them all. The tassels as per availability and aesthetics were long or short. Some were placed at the top or along the handles of the bags while some were attached at the lower corners of the bag or along the lower edge of the bags as per the aesthetic requirement.

DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS



4.1a Cutting and Preparation of Circular Tassels for Decoration of Bags



4.1b Attachment of Tassels by Hand/ Machine on to Sustainable Bags

4.2a. Grocery Bags



In each of the grocery bags inner lining was attached neatly and it was made reversible also.



FRONT



BACK

SF-G Bag Design No.1

In this grocery bag with Sustainable Design Logo 1, a triangular piece patchwork was done. In the centre portion, plain white fabric was attached and on it sustainable fashion logo No.1 was painted. Then these sections were stitched together.

Similarly, on the back side of the bag same pattern was used. In the end, braided handles made with textile strips were attached. Finally, tassels were added at the end of the handle such that it hung a little over the logo and created a harmonious unit. Tassels were also attached at the lower corners of the bag. Care was taken that the colours of the fabrics matched well with the logo and the painted flowers pattern at the bottom portion of the bag.



FRONT



BACK

SF-G Bag Design No.2

In this Grocery Bag with Sustainable Design Logo No.2, a symmetrical piece patchwork was done. In the lower portion of the bag light (beige) coloured fabric was attached and on it Sustainable Fashion Logo No. 2 was painted. Then these sections were stitched together and similarly on the back side of the bag same pattern was used. In the end, handles made with beige coloured textile strips were attached. Finally, tassels were added at the end of the handle such that it hung a little over the logo and create a harmonious unit. Care was taken that the colours of the fabrics matched well with the logo.



FRONT



BACK

SF- G Bag Design No.3

In this grocery bag with Sustainable Design Logo No. 3, a symmetrical patchwork was done. On the top right portion of the bag plain white rectangular fabric was attached and on it Sustainable Fashion Logo No. 3 was painted.

Machine couching was used to make the lower right corner patch stand out with its diagonal multi-hued lines. To make the bag more attractive and beautiful pin-tucks were made on the top left side patch of the bag. Then these sections were stitched together. Similarly on the back side of the bag same pattern was used. In the end, braided handles made with textile strips were attached. Finally, tassels were added at the lower portion of the bag. Care was taken that the colours of the fabrics matched well with the logo.



FRONT

BACK

SF- G Bag Design No.4

In this Grocery Bag with Sustainable Design Logo No.4, an asymmetrical patchwork was done. At lower side right portion of the bag plain white fabric was attached and on it Sustainable Fashion Logo No.4 was painted. Vertical lines using machine couching were made on the left lower corner patch to make it more attractive. Then, these section were stitched together and similarly on the back side of the bag same pattern was used. Handles made with straight textile strips of the printed fabric leftovers were attached to the bag. Finally tassels were added at the lower portion of the bag. The researcher ensured that the colours of the fabrics matched well with the logo.

4.2b. Vegetable Bags

In each of the Vegetable Bags inner lining was attached neatly. It was made reversible and the inner lining contained pockets which compartmentalised the section so that the vegetables didn't mix into each other.



4.2b Vegetable bags showing compartments/pockets created to avoid mixing of vegetables



FRONT



BACK

SF-V Bag Design No.5

In this Vegetable Bag with Sustainable Design Logo No.5, symmetrical patchwork was done. On the lower right side portion of the bag plain white fabric was attached and on it Sustainable Fashion Logo No.5 was hand-painted. Horizontal lines using machine couching were made on the left upper corner patch to make it more attractive. Then these sections were stitched together and similarly on the back side of the bag same pattern was used. Handles made with straight textile strips of the fabric leftovers were attached to the bag. Finally a long tassel was added at the right side which fell along the side seam of the bag. The researcher ensured that the colours of the fabrics matched well with the logo.



FRONT



BACK

SF-V Bag Design No.6

In this Vegetable Bag with Sustainable Design Logo No.6 a symmetrical patchwork was done. On the left upper portion of the bag plain white fabric was attached and on it Sustainable Fashion Logo No.6 was painted. Cross stitches were made on the stitching line to make it more attractive. Then these sections were stitched together and similarly on the back side of the bag same pattern was used. In the end braided handles made with textile strips were attached. Then the left-over scraps of matching fabrics were used to make beautiful tassels. Textile scraps were cut in a circular shape and from the centre thread was passed. At the top rhombus

DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

shaped cushion was made and then all the shapes were attached together with a thread. Finally, at the end the long tassels were attached to create a harmonious unit. Care was taken that the colours of the fabrics matched well with the logo.



FRONT

BACK

SF-V Bag Design No.7

In this Vegetable Bag with Sustainable Design Logo No.7, asymmetrical piece patchwork was done. At the left side top portion of the Bag fawn coloured fabric was attached and on it Sustainable Fashion Logo No.7 was painted. Machine couching was done to make the stitching line more attractive. Then all these sections were stitched together and similarly on the back side of the bag same pattern was used. Handles made with yellow coloured textile strips were attached. Then, finally tassels were made of leftover scraps. The fabric scraps were cut in circular shape and from their center thread was passed. Then tassels were added at the right side along with handle and at the lower corner portion of the bag. Care was taken that the colours of the fabrics matched well with the logo.



FRONT

BACK

SF-V Bag Design No.8

In this Vegetable Bag with Sustainable Design Logo No.8, a symmetrical piece patchwork was done. On the lower left portion of the bag plain white fabric was attached and on it Sustainable Fashion Logo No.8 was painted. Then the various sections of the patchwork bag were stitched

together and similarly on the back side of the bag same pattern was used. In the end handles made with sky blue colour and printed textile strips were attached. To make the bag more attractive tassels were added. For making the tassel circular shapes were cut and a rhombus shaped textile cushion was used at the top and rest of the tassels were attached to its three vertices. The tassel was attached in the centre of the top right patch portion of the bag. Care was taken that the colours of the fabrics matched well with the logo.

4.2: Result and Analysis

Table 4.1 : Distribution of Respondents on the basis of appropriateness of selling price for vegetable bags

(n = 50)

S. No.	Selling Price	Respondents	Percentage (%)
1.	220	6	12%
2.	260	38	76%
3.	300	6	12%
	Total	50	100

(n = 50)

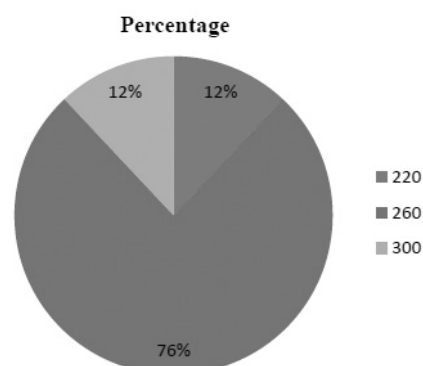


Fig 4.1 : Distribution of Respondents on the basis of appropriateness of selling price for vegetable bags

As per Table 4.1 and Figure 4.1, 76% of the respondents found Rs. 260/- to be the appropriate price of the vegetable bags while 12% each of the respondents found Rs. 220/- and Rs. 300/- to be the appropriate selling price for the vegetable bags.

Table 4.2 : Distribution of Respondents on the basis of appropriateness of selling price for Grocery bags

(n = 50)

S. No.	Selling price	Respondents	Percentage (%)
1.	240	43	86%
2.	260	5	10%
3.	300	2	4%
	Total	50	100

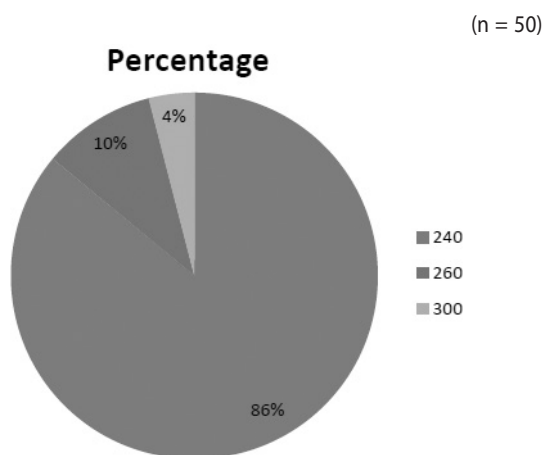


Fig. 4.2 : Distribution of Respondents on the basis of appropriateness of selling price for Grocery bags

As per Table 4.2 and Figure 4.2, 86% of respondents found Rs- 240/- to be the appropriate price of the Grocery bags while 10% each of the respondents found Rs- 260/- and Rs- 300/- to be the appropriate selling price for the Grocery bags.

Table 4.3 : Distribution of Respondents on the basis of suitability of vegetable bag being a good substitute as compared to plastic bag

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	50	100%
2.	No	0	0%
	Total	50	100

(n = 50)

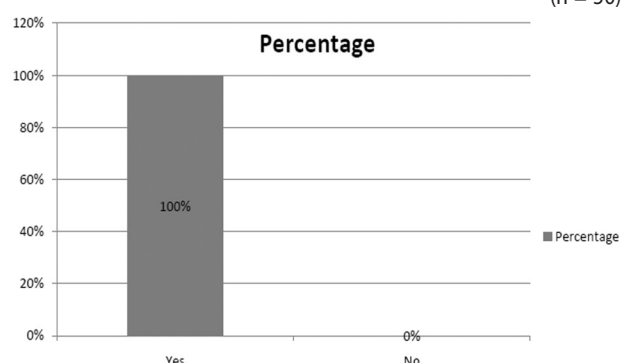


Fig 4.3 : Distribution of Respondents on the basis of suitability of vegetable bag being a good substitute as compared to plastic bag

According to the Table 4.3 and Figure 4.3, 100% of the respondents found the Vegetable bag to be a good substitute for plastic bags.

Table 4.4 : Distribution of Respondents on the basis of appropriateness of the vegetable bag pockets being appropriate for intended use.

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	50	100%
2.	No	0	0%
	Total	50	100

(n = 50)

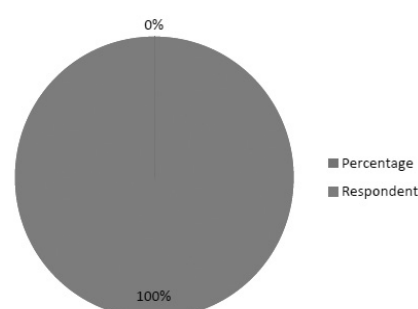


Fig 4.4. Distribution of Respondent on the basis of appropriateness of the vegetable bag pockets being appropriate for intended use.

As per Table 4.4 and Figure 4.4, 100% of the respondents found the vegetable bag pockets being appropriate for intended use which was that the vegetables remained segregated and did not mix into each-other. These pockets also helped to discourage the use of small polythene bags inside the main bag.

Table 4.5 : Distribution of Respondents on the basis of appropriateness of size of Grocery bag for intended use

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	46	92%
2.	No	4	8%
	Total	50	100

(n = 50)

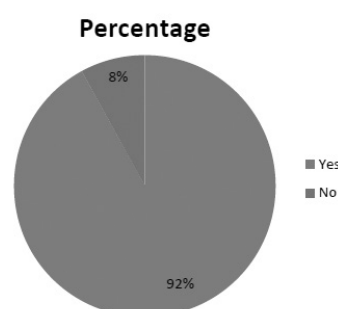


Fig 4.5 : Distribution of Respondents on the basis of appropriateness of size of Grocery bag for intended use

DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

As per Table 4.5 and Figure 4.5, 92% of the respondents found the size of grocery bag to be appropriate for intended use while 8% respondents did not think so and desired the bag to be slightly bigger and wider.

Table 4.6 : Distribution of Respondents on the basis of appropriateness of size of vegetable bag for intended use

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	38	76%
2.	No	12	24%
	Total	50	100

(n = 50)

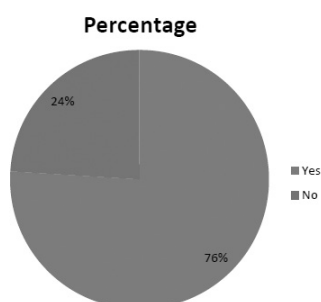


Fig. 4.6 : Distribution of respondents on the basis of appropriateness of size of vegetable bag for intended use.

As per Table 4.6 and Figure 4.6, 76% of the respondents found the size of the vegetable bag to be appropriate for intended use while 24% of the respondents desired the bag to be bigger and wider.

Table 4.7 : Distribution of Respondents on the basis of acceptance of the vegetable bag's innovative design

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	49	98%
2.	No	1	2%
	Total	50	100

(n = 50)

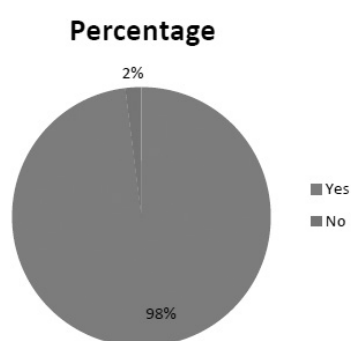


Fig. 4.7 : Distribution of Respondents on the basis of acceptance of the vegetable bag's innovative design.

As per Table 4.7 and Figure 4.7, 98% of the respondents appreciated the bag's innovative design but 2% of the respondents wanted bigger pockets inside the vegetable bag.

Table 4.8 : Distribution of Respondents on the basis of suggestions offered

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	16	32%
2.	No	34	68%
	Total	50	100

(n = 50)

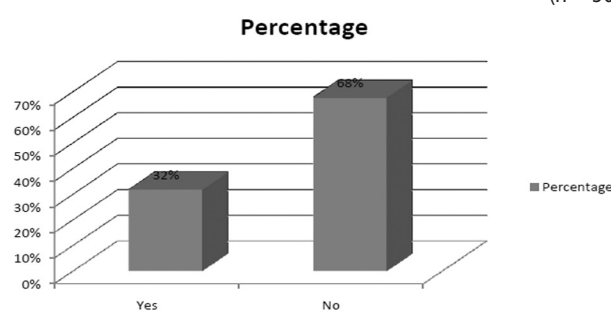


Fig. 4.8 : Distribution of Respondents on the basis of suggestions offered.

As per table 4.8 and Figure 4.8, 68% respondents did not give any suggestions while 32% respondents offered suggestions like: the size of the vegetable bags should be increased to 18"×20" so that inner pockets are also suitably used. Finishing can be neater in fabric painting of bags, avoid the use of white fabric, thicker and sturdier fabrics must be used in the bags.

Table 4.9 : Distribution of Respondents on the basis of bags being suitable as per current needs of the society

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	50	100%
2.	No	0	0%
	Total	50	100

(n = 50)

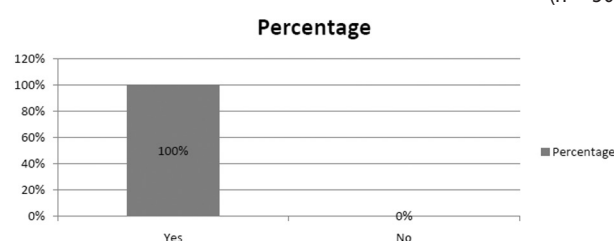


Fig. 4.9 : Distribution of Respondents on the basis of bags being suitable as per current needs of the society.

As per Table 4.9 and Figure 4.9, 100% respondents found the bags to be suitable as per current needs of the society.

Table 4.10 : Distribution of Respondents on the basis of inclination to order similarly designed bags

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	29	58%
2.	No	21	42%
	Total	50	100

(n = 50)

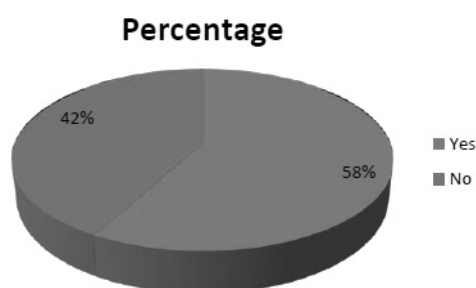


Fig 4.10 : Distribution of Respondents on the basis of inclination to order similarly designed bags.

As per Table 4.10 and Figure 4.10, 58% respondents showed an inclination to order similarly designed bags while 42% Respondents did not demonstrate such an inclination.

Table 4.11 : Distribution of Respondents on the basis of willingness to refer these bags to their friends / relatives

(n = 50)

S. No.	Variables	Respondents	Percentage (%)
1.	Yes	46	92%
2.	No	4	8%
	Total	50	100

(n = 50)

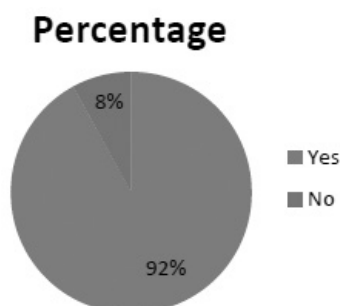


Fig. 4.11 : Distribution of Respondents on the basis of willingness to refer these bags to their friends / relatives

As per Table 4.11 and Figure 4.11, 92% of the respondents showed willingness to refer these bags to their friends/relatives while 8% respondents negatively to this query.



4.3a College Bag



4.3b Ladies Hand Bag



4.3c Men's office-cum-tiffin Bag

Due to the feedback from consumers during the survey the possibility of using the bags in multiple ways was explored. It was found to be a constructive suggestion and the researcher explored this option by incorporating these bags for usage as college bags, ladie's bag, men's office-tiffin bag etc. As the bags were found to be very pretty and trendy with a meaningful logo on them so their multi use was suggested. This suggestion was fruitful with a meaningful outcome.

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DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

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DESIGNING AND DEVELOPMENT OF SUSTAINABLE FASHION LOGO-PATCH-WORK TOTE BAGS

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EXPORT PROSPECTS AND MARKETS

Tiruppur sets highest ever exports of Knitwear to 46000 cr in 25-26

Tiruppur, the city in Tamil Nadu known as India's knitwear capital, recorded its highest-ever exports of ₹46,000 crores in 2025-26 (FY26), despite uncertainty arising from additional imposed by the United States (US) and the West Asia conflict, the Tiruppur Exporters Association (TEA) said recently. Exports rose 3 percent from ₹44,747 crores in FY25. The body has also set a target of achieving ₹1 trillion in exports by 2030.

This was announced at an event attended by Union Textiles Minister Giriraj Singh, who assured support for the region's industrial growth. Addressing the gathering, Singh said the Centre aims to increase India's textile exports from the current ₹38 billion to ₹100 billion by 2030.

According to TEA President K.M. Subramanian, Tiruppur accounted for nearly 60 percent of India's knitwear exports in FY26 and generated employment for more than one million people during the year. He said that despite geopolitical concerns, a strong order book and a weaker rupee against the US dollar boosted exports. The average exchange rate during FY26 was around ₹85.6-86 per \$, compared with about 83.1-83.3 in FY25.

To achieve the ₹1 trillion export target, the industry body submitted several demands to Singh, including worker accommodation and hosted facilities, zero import duty on cotton, extension of the Rebate of State and Central Taxes and Levies (RoSCTL) scheme, and early implementation of the Textile Expansion and Employment (TEEM) scheme.

The Union minister assured the representatives that the Centre would extend full support to establish hostels for women workers, develop new industrial clusters and adopt modern manufacturing technologies. He added that India's economic growth, infrastructure development and free-trade agreements (FTAs) have created new opportunities for the textile sector.

Singh also lauded Tiruppur's transition from cotton-based manufacturing to blended and man-made fibre (MMF)-based production, calling it the need of the hour. He urged the industry to adopt sustainable manufacturing practices and environmentally friendly technologies. The

Tiruppur textile industry is aiming to shift towards a manufacturing structure comprising 50 percent cotton and 50 percent MMF-based products.

A Sakthivel, chairman of the Apparel Export Promotion Council and honorary chairman of TEA, said the Union Ministry of Textiles has been continuously introducing initiatives to develop the textile sector. He noted that textile parks are being established across the country under the PM MITRA scheme, while special emphasis is being placed on promoting the production and export of MMF garments. He also urged the speedy implementation of the Affordable Housing Scheme, saying it would significantly benefit Tiruppur's textile and readymade garment industry.

Sakthivel further said India has entered into trade agreements with 38 countries, including the India-UK FTA, which has come into force in July 15. Together, these countries account for nearly 66 per cent of the world's population. He also sought a 50 percent capital subsidy for the MMF processing sector, simplified import procedures and the establishment of a dedicated centre for great processing in Tiruppur.

Under India's target of achieving textile exports worth \$100 billion by 2030, Tamil Nadu has been assigned a target of \$21 billion, of which Tiruppur is expected to contribute \$11.5 billion. □

Textile firms moves to IPO market to raise capital

Buoyed by the recent signing of free trade agreements (FTAs) and growing unrest in competitor Bangladesh, domestic textile companies are rushing to the stock exchanges to raise capital for expansion capacity enhancement and modernisation. At least five textile companies have filed papers with the market regulator, the Securities and Exchange Board of India (SEBI), to raise over ₹500 crores through initial public offerings. Of these, three companies will tap the main bourse, while two will list on the SME platform.

Among the companies tapping the main bourse are Alpine Texworld, Astha Spintex and TC Terry Text, while Shreedhar Spinners and Shree Ram Twistex will list on the SME platform.

Most State governments are offering textile companies special incentives to setup solar

EXPORT PROSPECTS AND MARKETS

projects and capital subsidies to boost employment and industry growth.

The government has set a target to scale the textile market to \$350 billion in FY 30 from \$194 billion in FY 26, implying a CAGR of 13 percent.

Export Expansion

This growth is expected to be driven by strong export expansion (22 percent CAGR) and steady domestic demand (10 percent).

He added that with India accounting for only 4-5 percent of global apparel trade, significant opportunities remain to gain market share as global brands diversify sourcing beyond China.

Looking ahead, he expects growth to recover, supported by FTAs with the UK, favourable tariff realignments and improving incentives such as RoSCTI. (Rebate of State and Central Taxes and Levies).

Persistent Pressure

Ratiraj Tibrewal, CEO at Choice Capital, said for nearly half a decade, India's textile industry operated under persistent pressure — not due to poor management, but because of a structural disadvantage it could not overcome on its own.

While Bangladesh and Vietnam secured preferential market access through trade agreement, India continued to face duties of 9-12 per cent in the EU and the UK, consistently pricing its exporters out despite being competitive on quality.

With no credible growth narrative to support valuations, the IPO market held little appeal for both promoters and investors. However, this has now changed with the recent wave of proposed trade agreements with the UK, EU and the US, which have given the sector what it lacked — a credible forward revenue visibility.

Textile stocks witnessed strong momentum on the day the UK FTA implementation, and buyers have already begun conducting factory audits in anticipation of shifting orders. "With India's IPO market at a historic high, promoters—particularly those backed by private equity funds seeking long-awaited exits — recognise that going public now is the most logical route to fund the capacity expansion required to meet the expected surge in demand," he said.

Arun Kejriwal, an independent analyst, said, "Textile companies, particularly those based in

Gujarat, have benefited from the incentives such as support for solar projects and tax benefits on capital investments."

Abhinav Munshi, Co-Founder & Managing Partner, Razor Capital, said the IPO should turn positive with the first tangible signs of a resolution to the West Asia conflict which significantly reduces the risk of a severe energy supply crisis.

The Indian economy and markets have demonstrated remarkable resilience in the face of a perfect storm of major global and domestic challenges, which should give investors renewed confidence. □

India Textile Exporters entering into a strong capex, cycle

Shares of textile exporters surged after Motilal Oswal Financial Services initiated coverage on some companies with 'buy' ratings, citing capacity expansion and policy support as the key growth drivers. The brokerage's price targets imply gains of 9% to 28% over recent closing prices.

Gokaldas Exports gained 3.7%, Aravind advanced 6.3%. Pearl Global jumped 11.2%, Indo Count Industries surged 9.5%, and Welspun Living rose 5%.

"Indian textile sector is entering a strong capex cycle with leading players announcing significant investments across garments, fabrics, technical textiles, and value-added categories to capture rising global sourcing opportunities," said Motilal Oswal in a client note, "Unlike earlier expansion phase focused on commoditised products, the current investment cycle is directed toward higher margin segments such as garments, MMF, speciality fabrics and advanced textiles, along with automation, sustainability and premiumisation initiatives. □

Garment firms export directly to clients

With geopolitical developments leading to uncertainties in global markets, sale of apparel through direct-to-consumer shipments is on the rise, Matthijs Crietee, secretary general of the international Apparel Federation, told the reporters recently.

Though fibre consumption is on the rise because of the growth in global population and affordability to purchase clothes, international trade is going

EXPORT PROSPECTS AND MARKETS

through tough times because consumers hesitate to spend on clothing when there are uncertainties.

The apparel market has a variety of products and spending on luxury goods is under pressure. Where there is monetary and sustainability gain, industries are able to meet the challenges. The biggest costs are in selling rather than in making the garments.

Hence, apparel makers and seller should work together so that the supply chain turns cost effective.

Free trade agreements do offer market access without duties to garment suppliers. But manufacturers in the supplying countries also need to develop the business, he added.

The local apparel market in India's is growing at almost 5% and direct-to-consumer selling is rising. "We were with an international delegation at Bharat Tex. We are impressed with the size, diversity and dynamism of the Indian textile industry. It has a bright future," Mr. Critee said. □

Exports surge 15% in June on W Asia market revival

A Recovery in shipments to West Asia and strong performance in other Asian and African markets helped India's merchandise exports grow 15.5% to \$40.41 billion in June. But a 31% increase in imports to \$70.84 billion pushed up the trade deficit to a five-month high of \$30.43 billion.

The biggest drivers of imports and the deficit were a 40% increase in crude oil imports to \$19.3 billion, a 59% jump in electronic goods imports to \$13.3 billion, and machinery imports that grew 31% to \$5.79 billion.

The rise in two-way shipments was also aided by low bases: exports had grown just 1.3% in June last year, while imports shrank 3.4%. Goods exports grew at nearly 18% in May and 14.2% in April, recovering from a 4-month slump.

Exports to West Asia, which had fallen sharply in March to \$2.62 billion as the war began, grew 7.3% to \$5 billion. The rebound in West Asia shows that alternate arrangements to get goods to the region after the disruption of shipping routes are showing results.

"Our exports to the Middle East have evened out. Whatever challenges we faced in March, April

and May have now been tackled," Commerce Secretary Rajesh Agrawal said. As alternate routes became available, imports from the region have also grown.

Exports to the biggest market-the United States-were down 1.2% to \$8.17 billion during the month. □

US Thinks India as key cotton buyer

The US views India as a market with potential to purchase its cotton and will likely emerge as a key importer in 2026, said Gary Adams, President of the US Cotton Trust Protocol.

"If we look at India. it is an important market for US cotton. In fact, in this marketing year, we are just competing for India as the fourth-largest market for US cotton," he told reporters in an online interaction.

With the area under cotton down in India and concerns over the monsoon, it could be a "stronger" market in 2026.

In its latest Cotton: World Market and Trade report, the US Department of Agriculture (USDA) has raised India's cotton imports this season to September to 56.9 lakh bales (170 kg each) from the earlier 53.18 lakh bales.

China Not Strong

Vietnam has been the largest market for US cotton exports over the past year. It has emerged as a strong market. Bangladesh is a steady market, particularly as its textile industry continuous to grow.

"The market that has not been as strong over the course of the past year is China. With just some of the trade tensions that are going on between the US and China. we're not seeing as much US cotton going to China over the past year." said Adams.

However, the USDA, in its latest estimates for the 2026-27 season, has projected 1.5-2 per cent increase in global cotton demand from last year, he said. The USDA has forecast production to increase to 117.3 million US bales (217.7 kg), while consumption will likely increase to 122 million bales, up 200,000 bales.

The concern of the US Cotton Trust Protocol, set up six years ago, was increase in energy prices. If prices continue to rule firm, it could have an impact on consumers to become more conservative. "I think that certainly could play

EXPORT PROSPECTS AND MARKETS

out if we see that continue forward later into this year.” said Adams, who is in India to meet the textile industry and attend the Bharat Trade Show. High oil price could impact overall expenditure on fuels. “That’s coming into plays, particularly as consumers look at their spending habits. The other factor is that higher oil prices have translated into an increase in prices of synthetic fibres, such as polyester, that are petroleum based.” he said.

This has resulted in renewed demand for cotton, said that US Cotton Trust Protocol President, adding that “cotton prices are holding in at a fairly good level”.

On the Inter-Continental Exchange, cotton is currently quoting at a two month high of over 82 cents a pound on higher crude oil prices in the wake of renewed US-Iran tensions.

The US Cotton Trust Protocol wants the import duty on cotton removed for short and medium staple cotton too. Currently, the government has suspended the 11 percent import duty on long staple cotton till September 30. The association has been communicating to the government. □

India emerges as a trusted global textile manufacturing & investment destination

India’s Textile Sector has always been more than an industry. It is a reflection of our civilisation, our culture, our entrepreneurial spirit, and the livelihoods of millions of families. Under the leadership of Prime Minister Narendra Modi, India is transforming this legacy into a globally competitive growth engine that combines tradition with technology, sustainability with scale, and local craftsmanship with global markets.

The Prime Minister's vision of Atmanirbhar Bharat and the transformative 5F framework — farm to fibre, fibre to factory, factory to fashion, and fashion to foreign markets — has provided a clear roadmap for India's textile sector. Today, Bharat Tex has emerged as the most visible manifestation of this vision, bringing together every stakeholder across the textile value chain on one integrated global platform.

In line with key international textile events of this scale, Bharat Tex is an industry-led initiative spearheaded by 11 export promotion councils and two industry associations, with the support of the Ministry of Textiles.

The third edition of Bharat Tex 2026 has reaffirmed India's position as a trusted global textile manufacturing, sourcing, and investment destination. As the world's largest integrated textile event, spread across nearly 1.6 million sq ft, Bharat Tex showcased the strength, diversity, and innovation of the country's textile ecosystem. The event witnessed more than 115,000 visitors, over 6,000 international buyers, exhibitors from across the globe, and representatives from 138 countries.

Bharat Tex is not merely an exhibition. It is a platform where business partnerships are forged, investments are catalysed, ideas are exchanged, and the future of the global textile industry is shaped. Over 28,000 business meetings, government-to-government and business-to-government interactions, and over 100 knowledge sessions opened new avenues for trade, technology collaboration, innovation, and market access.

The event also showcased the growing confidence of states, which highlighted their textile strengths, investment opportunities, and policy support, making Bharat Tex truly a national platform.

The world is currently looking at India as a competitive manufacturing hub for textiles. The India-UK CETA coming into force during Bharat Tex created unprecedented opportunities for exporters and MSMEs. The signing of nine trade pacts in six years has opened new market regions and strengthened India's global footprint.

The event translated this confidence into concrete outcomes with investment commitments of around ₹14,300 crore, supported by over 30 memoranda of understanding (MoUs) between industry players and various state partners, focusing on man-made fibre, apparel manufacturing, technical textiles, and textile recycling. Re&Up announced its intention to invest \$500 million in India, creating jobs and expanding manufacturing capacity.

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EXPORT PROSPECTS AND MARKETS

The growing international character of Bharat Tex was another remarkable achievement. Ministerial delegations, business leaders, and industry associations from Asia, Europe, the Americas, Africa, and Oceania participated. Strategic collaborations, including the letter of intent between Bharat Tex Trade Federation and Première Vision Paris, will deepen India's integration with global markets.

Equally important was Bharat Tex's focus on sustainability. The event showcased innovations in recycling, traceability, technical textiles, responsible sourcing, and environmentally conscious manufacturing. NITRA (Northern India Textile Research Association) signed an MoU with Troop Comforts to utilise CLOCell (Milkweed Fibre) in cold-weather defence gear, reflecting India's commitment to sustainable innovation.

Innovation and technology were at the heart of Bharat Tex 2026. AI-enabled buyer-seller matchmaking platforms, blockchain-based traceability systems, technical textile innovations developed by youth through Sanrachna Hackathon, and indigenous textile machinery innovations demonstrated India's technological capability. The textiles machinery industry ecosystem is moving towards 'Atmanirbharta', with the eco-friendly fabric printing machine developed by Colorjet under the National Technical Textiles Mission standing out as a notable example. At the same time, handlooms, handicrafts, and traditional weaves received global attention, reinforcing India's heritage.

The event also reflected the inclusive nature of India's development journey. MSMEs accounted for nearly 70% of exhibitors, while first-time exporters, startups, women entrepreneurs, youth innovators, weavers from Aspirational Districts Programme, and Lakhpati Didi found unprecedented opportunities to connect with global buyers and markets.

Bharat Tex 2026 has demonstrated that India's textile sector is ready to lead the next phase of global growth. With strong policy support, world-class infrastructure, expanding manufacturing capabilities, sustainable practices, and an innovation-driven ecosystem, India is steadily emerging as the preferred destination for sourcing, investment, and partnership.

As India moves towards the vision of Viksit Bharat 2047, the textile sector will remain one of the strongest pillars of economic transformation. □

Uttar Pradesh fifth largest apparel exporting state

The textile and apparel sector in Uttar Pradesh has evolved into far more than a traditional manufacturing industry, emerging as a key driver of employment generation, women's empowerment, skill development, export growth and rural prosperity. As India's fifth-largest apparel exporting state, Uttar Pradesh contributes nearly 10 per cent of the country's total apparel exports. Supported by the Uttar Pradesh Textile and Garmenting Policy 2022, a conducive investment climate and industry-friendly governance, the state is rapidly strengthening its position as a preferred destination for textile and apparel manufacturing. At the same time, sustained efforts to modernise traditional sectors such as village industries and pottery through technological advancement, financial assistance and improved market access are creating new opportunities for artisans and rural entrepreneurs. By seamlessly integrating industrial expansion with inclusive development, Uttar Pradesh is building a globally competitive textile ecosystem that balances economic growth with social progress while preserving its rich artisanal heritage. □

Garment exporters expect for tariff-rate quota from the U.S.

Indian garment exporters are hoping for tariff-rate quota, which countries such as Bangladesh have got, from Washington as India is also a major buyer of U.S. cotton.

Officials in textile and apparel export promotion councils told reporters the Centre was trying to negotiate with the U.S. for tariff concession for such garments exported to that country.

"Bangladesh, Indonesia and Malaysia will not be charged the additional 10% tariff by America for garments with U.S. cotton. However, this is a quota-based concession and does not apply to all garments exported by Bangladesh to the U.S. Australia offers India similar concessions," said an official.

Further, India is talking to the U.S. for a bilateral trade pact too. ■

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President's Address to Members of TAI Mumbai Unit

The last few months have been both encouraging and challenging for the Indian textile industry. While global uncertainties continue to influence markets, there have also been several positive developments that give us confidence about the future.

One of the most significant developments for our industry is the India-UK Free Trade Agreement, which has now come into force. With duty-free access for Indian textile and apparel products to the UK market, our exporters have an opportunity to become more competitive and expand their presence in one of India's important export destinations. It is now for the industry to make the most of this opportunity through innovation, quality, reliability and timely delivery.

Export performance during the first part of the current financial year has, however, presented a mixed picture. During April-May 2026, textile exports grew by about 3%, reflecting the resilience of the sector. At the same time, apparel exports declined by nearly 13%, resulting in an overall decline of about 4.4% in India's combined textile and apparel exports. Weak consumer demand in the US and parts of Europe, softer demand from the Middle East due to war conditions, and increasing competition from neighbouring manufacturing countries have all contributed to this slowdown. We should also remember that exports during the corresponding period last year were exceptionally strong, making this year's comparison more demanding.

The Government has continued to support the textile sector through initiatives such as the expansion of the Production Linked Incentive (PLI) Scheme, the progress of PM MITRA Parks and renewed efforts to improve cotton productivity. These are welcome steps that will help strengthen the textile value chain, encourage investment and create new opportunities for growth.

Sustainability itself is no longer just a desirable objective. It is rapidly becoming an essential part of doing business globally. Circularity, responsible

sourcing, recycling and traceability are increasingly influencing buying decisions. I believe Indian industry is well placed to respond to these changing expectations and convert them into long-term opportunities.

Sustainability itself is no longer just a desirable objective. It is rapidly becoming an essential part of doing business globally. Circularity, responsible sourcing, recycling and traceability are increasingly influencing buying decisions. I believe Indian industry is well placed to respond to these changing expectations and convert them into long-term opportunities.

Another area that continues to excite me is Technical Textiles. With applications ranging from healthcare and infrastructure to agriculture, defence and mobility, this sector offers tremendous potential for future growth. Keeping this in view, the Mumbai Unit is organising a one-day seminar on "Future Trends in Technical Textiles" on 22nd August 2026 at Fortune Park Galaxy, Vapi. I warmly invite all our members and industry colleagues to participate in this important programme.

During the last quarter, we also organised an international webinar on "Cradle to Cradle – Paving a Way to Sustainable Textiles." The excellent response from participants once again demonstrated the industry's

growing interest in sustainable manufacturing and circular economy practices. My sincere thanks to our distinguished speaker, Ms. Nienke Steen, and to our knowledge partner, BluWin, for making the webinar a great success.

At the Mumbai Unit, we remain committed to providing meaningful platforms for learning, networking and sharing knowledge. I sincerely thank all our members, speakers, sponsors, volunteers and well-wishers for their continued encouragement and support. Your participation is what keeps our Association vibrant and relevant.

Rajiv Ranjan
President

The Textile Association (India), Mumbai Unit



Mr. Rajiv Ranjan
President

Felicitation of Senior members with "Distinguished Service Award" held 8th April 2026 at Hotel Kohinoor Park, Mumbai

The Textile Association (India), Mumbai Unit, conferred the "Distinguished Service Award" upon its esteemed senior members in recognition of their outstanding contributions and exemplary service to the Association. Their unwavering support, valuable guidance, and dedicated commitment have played a significant role in helping the Mumbai Unit achieve new milestones of success.

The awards were presented by the President, Mr. Rajiv Ranjan; Trustee, Dr. G. V. Aras; and Chairman, Mr. V. C. Gupte.

The following members were honoured with the Distinguished Service Award:

1. Mr. C. Bose
2. Mr. Vilas Gharat
3. Mr. R. R. Mehta
4. Mr. M. B. Nambiar
5. Mr. Arun K. Narkar
6. Mr. K. D. Sanghvi
7. Mr. Mahendra Tanna
8. Mr. J. B. Soma
9. Mr. T. K. Chandra
10. Mr. S. R. Bhawe

The TAI, Mumbai Unit, expressed its heartfelt gratitude to all the awardees for their gracious presence and for accepting this honour. The Association deeply appreciates their invaluable contributions and looks forward to their continued guidance, encouragement, and support in its future endeavours.



Felicitation of Senior Members with "Distinguished Service Award"



TAI hosted successfully Webinar titled “Cradle to Cradle”

“Cradle to Cradle® - Paving a way to Sustainable Textiles” held Thursday, 11th June 2026 from 04.00 pm to 05.30 pm

The Textile Association (India), Mumbai Unit in association with a leading auditing and certification firm based in the UK successfully conducted a webinar titled “Cradle to Cradle® - Paving a way to Sustainable Textiles” on Thursday, 11th June 2026 from 04.00 pm to 05.30 pm. The webinar received a very good response from attendees across India.

Mr. Rajiv Ranjan, President, TAI, Mumbai Unit welcomed the speaker and participants to the webinar. In his address, he briefly highlighted the activities and initiatives of TAI, Mumbai Unit. He emphasized the importance of sustainability in the textile and apparel sector. He stated that the webinar aimed to explore innovative approaches to sustainability through the Cradle to Cradle® (C2C) framework. Participants gained valuable insights into C2C certification principles, sustainable material selection, responsible manufacturing practices, and effective strategies for minimizing waste throughout the textile value chain. Mr. Ranjan further

noted that the Cradle to Cradle® approach promotes environmental stewardship, resource efficiency, and long-term value creation, thereby contributing to a more sustainable future for the textile industry.

Ms. Nienke Steen, Director Consumer Products and Textiles of Cradle to Cradle® Product Innovation Institute was the Expert Speaker for this webinar. In her presentation, she provided a comprehensive overview of the Cradle to Cradle® certification framework and discussed its benefits for marketing and sales, enhancing buyer confidence, product differentiation, cost-saving opportunities through circular design and resource efficiency, and practical steps for organizations seeking certification.

The webinar was highly appreciated by all participants and proved to be a great success. An engaging question-and-answer session followed the presentation, during which participants raised numerous queries that were clearly and comprehensively addressed by the speaker. The webinar witnessed participation from around 200 professionals representing various segments of the textile and apparel industry.

The Textile Association (India), Mumbai Unit to organize Seminar on “Future Trends in Technical Textiles”

The Textile Association (India), Mumbai Unit is organizing a One Day Seminar on “Future Trends in Technical Textiles” on Saturday, 22nd August 2026 at Hotel Fortune Park Galaxy, Vapi.

This exclusive seminar is being organized with the objective of discussing the emerging opportunities, innovations, and growing importance of technical textiles for the present and future. Eminent experts and industry leaders from the technical textiles sector will address the gathering and share their valuable insights. The seminar will also deliberate upon various Government initiatives and policy support aimed at promoting the technical textiles industry in India. In addition, a Panel Discussion has been planned wherein distinguished panel members will interact with participants and address their concerns and queries related to the seminar theme. We are expecting participation from over 200 delegates representing the textile industry, academia, research institutions, and allied sectors. We are confident that the seminar will provide immense value to all attendees through informative sessions and meaningful networking opportunities.

The Textile Association (India), Mumbai Unit is the largest Unit of the Association having around 4000 members. The Unit has reputation of organizing events of topical interest both at national and global level.

Topics to be covered:

- Technical Textiles – Growth Potential and Prospects in India

- Technical Textiles: Emerging Growth & Opportunities
- Geotextiles / Agrotextiles
- Protective clothing
- Sports Textiles / Construction Textiles
- Medical textiles
- Latest trend in Weaving Preparatory M/C for the Technical Textile
- Composites
- Smart Textiles
- Govt. Policies & Strategies for Technical Textiles

Panel Discussion: “Future of Technical Textiles: Innovation, Sustainability & Market Readiness”

This panel discussion will bring together industry leaders and experts to discuss the future of technical textiles through the lens of innovation, sustainability, and market growth. The Panel will cover emerging technologies, sustainable and circular manufacturing practices, market opportunities, scalability challenges, and the role of industry-academia collaboration in building future-ready talent.

We appreciate your support to The Textile Association (India), Mumbai Unit in its activities and it is our pleasure to invite you to be part of this event. Let us join hands to make this seminar a great success.

Rajiv Ranjan
President

V. C. Gupta
Chairman

Dr. Gurudas Aras
Seminar Advisor

Haresh B. Parekh
Hon. Secretary & Convenor

Prashant Mangukia
Jt. Convenor

Join The Textile Association (India), Mumbai Unit Your Gateway to Excellence in the Textile Industry

About TAI

The Textile Association (India), Mumbai Unit, is a premier professional body dedicated to advancing the Indian textile industry. With a rich history of over eight decades, we are committed to fostering the growth and development of textile professionals and technocrats.

Our mission is to enhance industrial performance by promoting scientific knowledge, continuous education, and professional ethics.

Our objective is to promote and stimulate the thought and knowledge of the science of textile technology and its communication by continuing education and training programme in the field of manufacturing of fibre, yarn, fabrics and garments of any description in combination with the knowledge of natural science which relates to the physical, chemical or other fundamental properties of any of the substances used or any of the manufacturing processes employed in the textile education.

Our Key Activities

- ▶ Conferences & Seminars: We organise national and international conferences, seminars, and workshops on the latest trends and technologies in the textile industry.
- ▶ Exhibitions: We host exhibitions to showcase the latest textile machinery and products, providing a platform for business-to-business interactions.
- ▶ Educational Programs: We conduct professional examinations (ATA, GMTA) and refresher courses to help members enhance their qualifications and stay updated with industry developments.
- ▶ Publications: We publish the prestigious "Journal of the Textile Association" (JTA) and other valuable literature to disseminate knowledge and research in the field.
- ▶ Networking Events: We provide numerous opportunities to connect with fellow professionals, industry leaders, and experts.

Past Events

- ▶ International Conference "Automation and Robotics in Textile & Apparel Industry"
- ▶ Hybrid Session "Automation of GST Refund for Textile Industry"
- ▶ Webinar "Key for Success in Business Daily Profit & Loss"

- ▶ Lecture "Opportunities & Threats AI poses for MSME textile units"
- ▶ International Conference "Sustainability and Circularity – The New Challenges for the Textile Value Chain"
- ▶ International Conference on - "Digitalization - A Step Towards Textile 4.0"
- ▶ International Conference - "TEXTILE 4.0 - Global and Indian Perspective:
- ▶ Conference - "Make in India - Global Vision of Indian Textile Industry"

Become a Corporate Member of the TAI!

- ▶ This membership will be open to the Textile units, Fibre manufacturers, Textile machinery manufacturers, Dyes, Chemicals, and Auxiliary manufacturers, etc., connected with the Textile Industry and Textile Research Institutions and Laboratories.
- ▶ The Corporate Membership allows the right to depute four persons to participate in the activities organised by the Association. Such Nominees will enjoy all the facilities of Life Membership.

Why should you become a Corporate Member?

- ▶ Substantially concessional delegate fees for all our events.
- ▶ Opportunities to be part of delegations to major international textile events.
- ▶ A chance to enhance your professional qualifications.
- ▶ Access to our exclusive publications and e-journal.
- ▶ Networking opportunities with a vast community of textile professionals.
- ▶ Meet your peers
- ▶ Participate in cutting-edge discussions at the Conferences and Webinars
- ▶ The chance to discuss issues with highly experienced stalwarts of the industry.

Join us to be a part of a vibrant community and contribute to the future of the textile industry.

For further information, please contact :

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E-mail: taimumbaiunit@gmail.com
Website: www.textileassociationindia.com ■



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N.D. Mhatre got conferred certificate of International Excellence with Award and Medal from the Global Research Foundation at the Denissons Hotel, Hubli, Karnataka

A speech of Awardee from ITAMMA

"I feel deeply proud and honoured to be recognized and accommodated by ITAMMA within one of its wings as the Association continues to soar to greater heights. My gratitude goes to the founders, architects, and engineers of this institution - the Trustees, Office Bearers, and Managing Committee members - who have built ITAMMA on a strong foundation capable of withstanding every challenge and fluctuation the textile industry has faced since its establishment in 1943.

I also extend my heartfelt thanks to my mother, Mrs. Leela Mhatre, for instilling in me the spirit of service to others; to my spiritual Guru, Param Pujya Pramukh Swami Maharaj, for his constant blessings throughout my journey; and to my life partner, Ms. Yamini, for her unwavering support and encouragement to serve both industry and society.

Receiving this prestigious award from the Global Research and Foundation, USA, in recognition of my contributions at the international level has inspired me to work with renewed vigour and enthusiasm in the years ahead. This recognition is as a reflection of the growing strength of India's textile machinery industry.

My contribution will always be in advancing India's textile machinery and accessories sector, a critical pillar supporting efficiency, innovation and competitiveness across the textile value chain.

The sector is playing an increasingly important role in enabling automation, advanced manufacturing and sustainable production. Thus, I see this as a responsibility to contribute meaningfully toward building a future-ready textile ecosystem in India.

I dedicate this award to my wife, Yamini, acknowledging her unwavering support despite health challenges."



I am also attaching some of the photos for your reference and records.

ND Mhatre

Director General (Tech) - ITAMMA

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Manufacturers Association

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Shells & End Bushes

Manufactured by CNC m/c ensuring high precision tolerance, our Top Rollers are made of High Grade Alloy Steel as per OEM recommendations.

End Bush Bearing and Grease

Bearings: To extend life and minimum wear and tear, Sakthi End bushes are being fitted with INA-Germany NTN, IKO-Japan needle/cage bearings.

Grease: Periodic lubrication is recommended for extended life of the bearings. Sakthi End bushes are packed with high speed grease during delivery.

Synthetic Rubber Cots

Imported Cots: Imported Twin layer, Press Fit cots like Accotex, Daytex, Berkal & Yamuchi etc., can be supplied with Sakthi Top roller duly mounted.

Indigenous Cots: Indian Glue on, Twin Layer, Press fit cots can be supplied with our Top roller duly mounted. Periodic buffing is recommended based on the shore hardness of the cots, count of cotton and basic raw material of the yarn.

Mounting and Buffing: Inhouse mounting facility will ensure the accurate fitment of all kind of cots.



'Sakthi' Top roller quality is taken care in every stage of operations up to final assy by QC team. As per customer choice any make and kind of cots can be duly mounted and supplied with our top roller.

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Barmags' hosted its customer day 'A New Era Powered by Innovation' ends

Barmag Fuzhou Customer Day Concludes Successfully, Boosting High-Quality Chemical Fiber Growth in Fujian & Guangdong

Barmag hosted its Customer Day themed "A New Era. Powered by Innovation." in Fuzhou on June 28, welcoming nearly one hundred invited customers from Fujian and Guangdong provinces. Georg Stausberg, CEO of Barmag Group, attended alongside the sales and R&D expert China team to jointly present integrated solutions covering the entire man-made fiber value chain.



Barmag experts with guests at the event

Centered on the theme "A New Era. Powered by Innovation.", the event targeted Fujian and Guangdong, China's two major polyamide manufacturing hubs. It served as a communication platform for key regional clients to deepen strategic local cooperation and jointly explore pathways for the high-end and sustainable transformation of chemical fiber production.



Georg Stausberg, CEO of Barmag, delivered the opening speech and elaborated on Barmag's strategic roadmap following its integration into the Rieter Group. Both parties will deepen cross-business synergy, capitalize on complementary strengths and co-create end-to-end integrated solutions for the full textile industrial chain.

The event welcomed a distinguished senior delegation: Georg Stausberg, CEO of Barmag;

Jochen Adler, CTO of Barmag; and Dr. Wolfgang Ernst, CSO of Barmag, accompanied by core teams based in Beijing, Suzhou, Shanghai and Yangzhou. Attendees represented all key functional divisions, including management, sales, project execution and after-sales service. Representatives from SSM and Temco, sister brands within the Rieter Group, also participated as "new colleagues". Their presence underscores Rieter's strategic ambition and comprehensive capabilities to develop integrated full textile chain solutions following its acquisition of Barmag.



Dr. Wolfgang Ernst, CSO of Barmag, analyzed the current landscape, opportunities and challenges facing the man-made fiber industry amid a volatile global marketplace. Upholding its customer-first philosophy, the Group adapts proactively to market shifts while executing steady global expansion strategies.



Jochen Adler, CTO of Barmag, shared cutting-edge trends in textile machinery manufacturing. He explained that sustainability sits at the core of the company's R&D agenda, enabling Barmag to keep pace with industrial shifts and continuously pioneer technological advancement within the spinning machinery sector.

Specialists from Sales, Project and Service divisions delivered in-depth briefings to attendees on complete technical solutions from melt to yarn, fully demonstrating Barmag's comprehensive capability to deliver high-efficiency integrated technical services.

CORPORATE NEWS



Richard Wang, General Manager of Barmag Suzhou, delivered the closing speech for the Customer Day, outlining promising prospects for deeper regional strategic collaboration.

During the afternoon session, the Barmag team accompanied all guests on a guided tour of Fujian Eversun Jinjiang's production facility. As Barmag's largest polyamide customer worldwide and a core strategic partner, Eversun Jinjiang has maintained long-standing, intensive collaboration built on complementary strengths.



Barmag's product portfolio delivers specialised technologies covering the complete melt-to-filament value chain. On-site technical specialists walked clients through core processes including spinning, winding and texturing, showcasing the Group's comprehensive technical solutions.

"Customer oriented" has long stood as Barmag's principle, with sustainable development embedded into every stage of technology R&D. In future, Barmag will continue to leverage its global R&D network, comprehensive local service infrastructure and integrated technical know-how to increase value for customers.



The Barmag team toured Fujian Yongrong Jinjiang's production plant alongside event attendees.

About Barmag

Since 2026, the Swiss Rieter Group has been operating its man-made fibers business as subsidiary under the traditional name Barmag. This

includes the established product brands Barmag and Neumag. As a future-oriented company, the research and development of Barmag is driven by energy-efficiency and sustainable technologies (e-save).

Barmag is one of the leading providers of manmade fibers filament spinning systems, texturing machines, BCF systems, staple fibers systems and solutions for the production of nonwovens. Together with its range of polycondensation and extrusion systems and their key components, Barmag caters to the entire manufacturing process – from the monomer all the way through to the textured yarn – and supports it with customer-oriented engineering services. The product portfolio is rounded off with automation and digital solutions. 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, Türkiye and the USA. Worldwide, Barmag – with round about 2,500 employees – has a presence in 120 countries with production, sales and distribution and service organizations. At the Research and Development centers in Remscheid, Neumünster (Germany), and Suzhou (China), highly qualified engineers, technologists and technicians develop innovative and technologically leading products for tomorrow's world.

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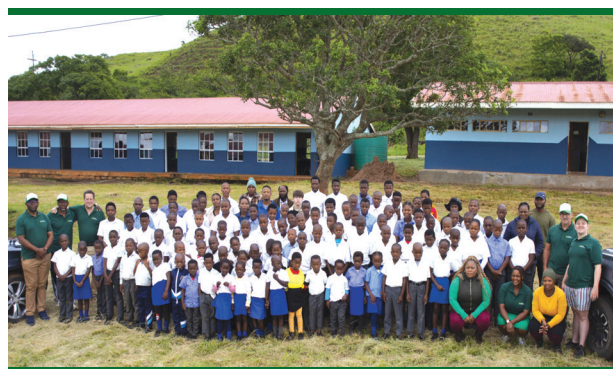
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FESPA foundation hailed donations and support at FESPA Global Print Expo 2026 in Barcelona

FESPA participated at Global Print Expo 2026 returns to the Gran Via, Fira de Barcelona, Spain, held from 19 – 22 May 2026, alongside European Sign

Expo, Personalisation Experience, WrapFest and the brand-new Corrugated and Textile. As the global print, signage, packaging, textile and wrapping communities gathered for four days of innovation, collaboration and business development, the FESPA Foundation once again demonstrated how the industry could drive meaningful, lasting social impact.



Located in Hall 3, Stand C95, the FESPA Foundation was present throughout the event, inviting visitors, exhibitors and partners to contribute to its ongoing mission: supporting schools in underserved communities around the world. The FESPA Foundation's presence at the show offered a tangible connection between the creativity and capability on display across the exhibition floor and the real-world educational environments that benefit from industry support.



The FESPA Foundation was launched in 2025 as a global initiative dedicated to transforming the speciality print and visual communications industry through sustainable practices, community support, and educational outreach. Since its initial launch, the initiative has actively supported five schools, operating under the strapline 'Print for Good'. It has also empowered communities and created lasting impact through the power of print. Through its initiatives, the FESPA Foundation continues to use its donations – comprising printed materials,

CORPORATE NEWS

equipment and funding – to support schools by helping them to improve learning conditions and improve access to education.

The FESPA Foundation would like to thank its many sponsors and donors, whose continued commitment has made its achievements over the last year possible. This year, a number of exhibitors at FESPA 2026 produced assets live at the show. Donated items included books, pencils, t-shirts and other garments, educational posters and a range of community-focused resources, distributed to the FESPA Foundation's partner schools.



Sponsors and partners for this year include: DSV, Durst, FESPA Netherlands Association, Messe Frankfurt South Africa and Summa, whose support reinforces the power of print to make a difference.

Building on the success of last year's donations in Berlin, the FESPA Foundation has launched a new campaign for 2026, titled "Back to School". The campaign will focus on items for children who are starting or returning to school after the holidays. Arlon, Brother, Canon, Digidelta, Kongsberg Precision Cutting Systems, Mimaki and Roland are amongst the donors for the new initiative.

Neil Felton, FESPA CEO, comments: "We're delighted to welcome the FESPA Foundation alongside our flagship event once again this year. It's incredibly rewarding to see our global community come together to create meaningful impact and to truly demonstrate print for good. By bringing together sustainability, education and community support, we're helping to transform hundreds of lives and reach those who need it most, while empowering individuals with the skills, resources and opportunities to build brighter, more sustainable futures. Together, with our incredible community of visitors, exhibitors and partners, we're proving that our industry can be a force for lasting, positive change - well beyond the printed page."

At FESPA 2026, visitors have gained the opportunity to support the FESPA Foundation through both materialistic and monetary donations – in Hall 3, Stand C95.

About FESPA

Founded in 1962, FESPA is a global federation of Associations for the screen printing, digital printing and textile printing community. FESPA's dual aim is to promote screen printing and digital imaging and to share knowledge about screen and digital printing with its members across the world, helping them to grow their businesses and learn about the latest developments in their fast-growing industries.

FESPA Profit for Purpose

Profit for Purpose is FESPA's international reinvestment programme, which uses revenue from FESPA events to support the global speciality print community to achieve sustainable and profitable growth through four key pillars - education, inspiration, expansion and connection. The programme delivers high quality products and services for printers worldwide, including market research, seminars, summits, congresses, educational guides and features, in addition to supporting grassroots projects in developing markets. For more information visit, www.fespa.com/profit-for-purpose.

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Kornit Digital and D-house laboratorio urbano presented Foot/Print EXP, the new project conceived by SANGI and Materia held from 20-26 April at Milan Design Week 2026

On the occasion of Milan Design Week 2026, Kornit Digital and D-house laboratorio urbano, the Dual Innovation Hub of Pattern Group, present

Foot/Print EXP, a project conceived by designers Sangi and Materia, exploring new possibilities in footwear design through the intersection of digital printing technology, material research, and design.

Presented in the Isola Design District at Zona K, Via Spalato 11, Milan, the project unfolds through a collection of five footwear prototypes, developed through a process that integrates design, technological innovation, and product development.



Within this context, Kornit's digital production technology plays a central role, not only as a production process, but as a true design tool. Through its sustainable, on-demand approach, Kornit enables direct intervention on materials and surfaces, overcoming the limitations of traditional techniques and unlocking new possibilities for formal and material experimentation. Among these, Kornit's XDi stands out as a unique digital printing technology that allows designers to create tactile and textured eLects directly on fabrics. At the same time, the use of white ink expands the visual language, enabling high-definition prints on dark and colored textiles with greater depth and contrast. "Returning to Milan Design Week

for the fourth year with D-house, we continue to explore how digital technology can expand the language of design. With Foot/Print EXP, we see digital printing evolve beyond production into a true creative tool, enabling designers to experiment directly on materials, explore new aesthetics, and bring ideas to life with unprecedented flexibility. This collaboration reflects our ongoing commitment to innovation, sustainability, and to shaping new possibilities for footwear and design." - Giovanni Pizzamiglio, Roll-To-Roll Segment Director, Kornit Digital

The installation unfolds as an immersive journey across two environments. The first space introduces visitors to a Mars-inspired landscape, where surfaces, colors, and materials create an evocative, suspended atmosphere. The textures generated within this environment are translated onto the footwear, becoming a defining visual and conceptual element of the project. According to Pietro Franceschi, Sangi, and Francesco Saverio Matera: "As a research and development center in the footwear sector, we approach this project as a territory of exploration—an opportunity to rethink every phase of the design process and push Kornit technologies beyond their conventional use, transforming them into tools for imagining new possibilities, both aesthetic and, above all, functional. FOOT/PRINT EXP was conceived with the ambition of speaking to the entire industry, reaZirring the value of collaboration between brands and suppliers as a driver of innovation. It is precisely through this shared energy that it becomes possible to go beyond known boundaries—and, in our case, to symbolically push even beyond Earth's atmosphere."

The journey continues into a second room conceived as a laboratory, where materials, processes, and development phases are brought into focus. Here, the experimental dimension becomes explicit, revealing the transition from research to product construction.

Francesco Botto, Innovation Development Manager at Pattern Group, adds:

"Projects like FOOT/PRINT EXP fully embody the vision of Pattern Group: building an advanced supply chain where innovation, research, and manufacturing are in continuous dialogue. Within this framework, D-house positions itself as a laboratory for applied experimentation, capable of connecting diverse expertise and transforming

CORPORATE NEWS

technologies into concrete solutions for the industry. Collaboration with partners such as Kornit allows us to explore new design languages and contribute to shaping more flexible, responsible, and future-oriented production models.”

The project is based on an integrated production supply chain in which technology and manufacturing interact in a synergistic way. The fabrics used for experimentation are sourced from Beppetex, which supplies cotton canvas, and from Colombo Industrie Tessili, specialized in technical fabrics. Leather materials, provided by Conceria Enterprise, also make it possible to explore the application of Kornit printing on leather intended for the footwear industry.



The printing of the materials is carried out by Tintoria Finissaggio 2000, which employs Kornit digital printing technology to transfer visual experiments onto fabrics and surfaces. This enables the translation of design concepts into concrete applications, while introducing a more flexible, sustainable, and on-demand-oriented production approach.

Foot/Print EXP positions footwear as a field of experimentation where technology and creativity meet, highlighting how digital printing

can transform not only product aesthetics, but also production models—introducing new possibilities in terms of flexibility, customization, and sustainability.

D-HOUSE LABORATORIO URBANO

D-house laboratorio urbano is the innovation hub of Pattern Group, founded in Milan in 2020 and dedicated to research and development, the application of new technologies, sustainability, and education. Conceived as a space for collaboration and experimentation, it fosters dialogue between designers, companies, international partners, professionals, and students, encouraging creative exchange and project development. As the Innovation Hub of Pattern Group, D-house operates as a Dual Innovation platform, integrating open innovation and tailored development across fashion, design, and luxury sectors. In collaboration with Designtech, it contributes to the creation of a shared international hub for fashion, design, and furniture, supporting the development of innovative projects and cross-industry collaborations. www.dhouse.org

KORNIT DIGITAL

Kornit Digital (NASDAQ: KRNT) is a global leader in sustainable, on-demand digital production technologies for the textile and fashion industries. The company offers end-to-end solutions including digital printing systems, inks, consumables, software, and fulfillment services through its global network. Headquartered in Israel, with offices in the U.S., Europe, and Asia Pacific, Kornit Digital serves customers in over 100 countries worldwide. Discover how Kornit Digital is transforming the fashion and textile industry: www.kornit.com

SANGI

Pietro Franceschi (Milan, 1997) is the founder and creative director of SANGI Observatory, the first observatory dedicated to research and development in the footwear industry. After studying Fashion Design at Politecnico di Milano and gaining experience in the Civitanova Marche footwear district, he launched SANGI in 2018 to analyze and catalogue innovative footwear models worldwide and develop forward-thinking designs. The observatory acts as a research center, communication platform, and product development studio, focusing on aesthetics, functionality, and innovative manufacturing processes. Its digital archive is available on Instagram @lookatsangi.

MATERIA

Francesco Saverio Matera (Matera, 2000) is a designer and creative with a project-driven vision focused on functionality, innovation, and inclusivity. He graduated in Fashion Design / Accessories at IED Milan (2023) with a merit-based scholarship and received international recognition, including the Woolmark Performance Challenge (2021). He gained experience in the footwear sector working at Moncler, contributing to collection development and special projects with figures such as Nigo, Rick Owens, and A\$AP Rocky, and later at Stone Island, where he worked on footwear projects and collaborations including New Balance. Currently working as a freelance designer, he focuses on creative direction, product development, and strategic research. He is also the founder of MATERIA, a brand focused on functional and inclusive fashion, exploring new relationships between body and garment through accessible design, technical innovation, and environmental responsibility.

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VIRGIO adopts different approach in the face of over production, excess inventory and increasing demand uncertainty

VIRGIO Bets on Made-On-Demand Fashion to Build the World's Largest Demand-Led Fashion Brand

As the global fashion industry continues to grapple with overproduction, excess inventory, and increasing demand uncertainty, fashion-tech brand VIRGIO is championing a fundamentally different approach to building fashion - one that starts with consumer demand rather than inventory forecasts.

Amar Nagaram, Co-Founder & CEO, VIRGIO, is building what it aims to become the world's largest on-demand fashion brand by 2030 through an AI-led operating model that enables fashion to

be designed, produced, and scaled based on real-time consumer demand signals.

For decades, the fashion industry has relied on forecasting consumer preferences months in advance and committing significant capital to inventory before understanding actual demand. This approach has often resulted in excess stock, markdowns, and inefficiencies across the value chain. VIRGIO's Made-On-Demand (MOD) model seeks to address these challenges by continuously testing new styles in small quantities, analysing consumer response in real time, and scaling production only after demand has been validated.



Amar Nagaram, Co-Founder & CEO, VIRGIO

VIRGIO believes that the fashion industry's biggest challenge is not manufacturing, but forecasting. In a world where consumer preferences evolve rapidly and trends emerge daily across social platforms, predicting demand months in advance has become increasingly difficult. The company believes the future of fashion will belong to brands that can learn from consumer demand in real time rather than relying solely on long-range forecasts.

At the core of the model is VIRGIO's proprietary technology ecosystem, which identifies emerging

CORPORATE NEWS

fashion trends, tracks evolving consumer preferences, and enables rapid decision-making across design, merchandising, and manufacturing. By integrating technology with supply chain operations, the company can move styles from concept to consumer significantly faster than traditional fashion cycles while reducing inventory risk.

The company's AI-led technology stack continuously analyses emerging fashion trends, consumer behaviour, and demand signals across digital channels. These insights help identify opportunities early, enabling teams across design, merchandising, and manufacturing to respond faster and make more informed decisions. By combining artificial intelligence with human creativity, VIRGIO aims to create a more responsive fashion ecosystem built around consumer demand.

Unlike conventional fashion businesses that prioritise inventory accumulation, VIRGIO's demand-led approach is designed to maximise agility, responsiveness, and assortment. Every product launch generates consumer insights that help inform future production decisions, creating a continuous feedback loop between demand and supply.

For consumers, this translates into access to a constantly evolving assortment of fresh styles launched throughout the year rather than waiting for traditional seasonal collections. The model enables VIRGIO to respond to emerging trends faster, offer greater variety, and continuously refine its assortment based on what customers are actively choosing.

The model is further supported by an integrated manufacturing ecosystem that allows the brand to align production capacity with real-time demand patterns. By bringing technology, sourcing, and manufacturing into a unified operating framework, VIRGIO is working to build a more efficient and adaptive fashion supply chain.

By producing only after demand has been validated, the model also helps reduce excess inventory, minimise markdown dependency, and lower the risk of unsold stock. As the fashion industry faces growing scrutiny around waste and overproduction, VIRGIO sees demand-led manufacturing as a more efficient approach to building fashion businesses while creating long-term value across the supply chain.

Amar Nagaram, Co-Founder & CEO, VIRGIO, said:

"Fashion has traditionally been built around predicting what consumers might want months in advance. We believe the future belongs to brands that can learn directly from consumers and

respond in real time. At VIRGIO, made-on-demand is the foundation of how we operate. Every style generates learning, every demand signal informs production, and every decision helps build a more intelligent fashion ecosystem. Our ambition is to build the world's largest on-demand fashion brand by 2030 by fundamentally changing how fashion is designed, manufactured, and scaled."

"The future of fashion won't be defined by who can produce the most inventory. It will be defined by who can understand consumers the fastest and build products they genuinely want."

As consumer preferences evolve faster than ever and trend cycles continue to compress, VIRGIO believes the next era of fashion will be defined not by producing more inventory, but by producing smarter inventory. Through its AI-led technology stack, integrated manufacturing ecosystem, and demand-first philosophy, the company is working towards redefining how fashion is built for the modern consumer while creating a more responsive and efficient industry model.

VIRGIO announced the appointment of Hansa Nigam as Chief Marketing Officer when VIRGIO turns in next phase of growth

Fastest-growing sustainable fashion brand VIRGIO in India has announced the appointment of Hansa Nigam as its Chief Marketing Officer (CMO). In her expanded role, she will lead the brand's marketing and growth strategy as VIRGIO enters its next phase of growth.

Having played a pivotal role in shaping VIRGIO's brand identity and consumer engagement since joining the company in 2023, Hansa's expanded mandate will focus on strengthening the brand's market presence, driving customer growth, and deepening VIRGIO's positioning at the intersection of fashion, technology, and sustainability.

The appointment comes at a time when VIRGIO continues to scale through its differentiated operating model that combines demand-led production, responsible sourcing, and technology-led decision-making. As consumers increasingly seek brands that balance style, transparency, and purpose, marketing has become central to building long-term brand affinity and trust.

Prior to joining VIRGIO, Hansa built her career across brand strategy, digital marketing, and consumer growth. She has previously worked with OnePlus, where she led marketing initiatives for

the OnePlus Nord portfolio across India and global markets, and at Glance, where she drove digital marketing for multiple celeb-led brands. Earlier, she worked in strategic planning at The Glitch, building brand strategy for leading consumer brands. This combination of global brand-building experience and startup execution has shaped her approach to creating culturally relevant marketing that delivers measurable business impact.

Commenting on her appointment, Hansa Nigam, Chief Marketing Officer, VIRGIO, said: "I'm honoured to take on this role at such an exciting stage in VIRGIO's journey. Over the past few years, we've built a brand that is not just responding to how consumers shop today, but reimagining how fashion can be discovered, experienced, and produced. I'm excited to continue building on that momentum- creating marketing that inspires people, strengthens our community, and helps shape the future of conscious fashion."

As VIRGIO continues to expand its footprint and strengthen its position as one of India's fastest-growing sustainable fashion brands, Hansa's elevation reflects the company's continued investment in building a category-defining brand that combines innovation, technology, and responsible growth.

About VIRGIO

VIRGIO is a Bengaluru-based fashion-tech company founded by Amar Nagaram, former CEO of Myntra. The brand combines technology, AI-led trend intelligence, and an on-demand manufacturing ecosystem to create trend-first fashion that is responsive, efficient, and aligned with real-time consumer demand while reducing the overproduction challenges that have historically defined the industry. With a vision to build the world's largest on-demand fashion brand by 2030, VIRGIO is reimagining the fashion value chain through a demand-led approach that prioritises speed, innovation, and responsible growth.

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id8 media solutions

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LinkedIn- <https://www.linkedin.com/company/virgio/> □

id8 media solutions emboldens its Luxury Marketing Legacy with Off-White™'s India Launch Strategy

Bengaluru, India, XX: India's luxury and fashion landscape is entering a new era. As global brands deepen their presence in the country, younger consumers are reshaping the meaning of luxury through streetwear, music, creator culture, design, and global fashion conversations.

Against this backdrop, id8 media solutions played a strategic role in supporting the India launch narrative for global luxury streetwear brand Off-White™, in association with Brand Concepts Ltd.

With over 25 years of experience across luxury, fashion, lifestyle, and consumer communications, id8 worked on shaping a launch strategy that went beyond traditional luxury marketing. The focus was on building cultural relevance for Off-White™ in India through community-first storytelling, pop culture alignment, creator-led amplification, and tastemaker engagement — while staying true to the brand's global identity.

The agency recently announced its involvement in the launch on LinkedIn and will soon publish a detailed case study on the campaign. The case study will offer an industry-facing perspective on how global luxury and streetwear brands can approach India through a culture-led framework — one that balances international brand identity with local consumer insight, community engagement, and market relevance.

Rather than positioning the launch purely through exclusivity, the strategy focused on familiarity, aspiration, and cultural resonance. The objective was to connect Off-White™ with a younger, globally aware Indian audience that already engages with streetwear, fashion drops, music culture, and international style movements.

Commenting on the evolving luxury market in India, Tanya Swetta, Founder and CEO, id8 media solutions, said:

"Over the last 25 years, we have seen India's luxury market evolve dramatically — not only in terms of global brands entering the country, but also in how Indian consumers engage with luxury. Today's younger audiences are far more culturally aware, globally connected, and expressive in the way they discover and adopt brands.

CORPORATE NEWS

The launch of Off-White™ in India was particularly exciting because it allowed us to work at the intersection of luxury, streetwear, youth culture, and community. Our role was to help shape a launch narrative that remained authentic to Off-White™'s global identity while making it relevant to India's evolving luxury consumer."

id8's approach centred on building perception from the outset. The agency worked to seed the brand within India's growing luxury and streetwear ecosystem by leveraging cultural tastemakers, opinion leaders, creators, and pop culture-led amplification. This helped create a launch narrative that felt contemporary, credible, and connected to the way younger Indian consumers engage with fashion today.

As India continues to witness strong momentum across luxury retail, fashion, and lifestyle, id8 media solutions remains focused on helping global brands navigate the market through integrated storytelling, strategic communications, digital amplification, influencer engagement, and culture-led brand building.

About id8 media solutions

id8 media solutions is a global integrated marketing consultancy known for bringing together business strategy, brand thinking, communications, digital marketing, and creative execution under one unified growth model.

Co-founded by Tanya Swetta and Aman Swetta, id8 has evolved from a PR and marketing firm into a strategic integrated agency with capabilities across public relations, brand strategy, visual thinking and design, digital and performance marketing, influencer marketing, experiential marketing, content, intellectual property creation, and execution.

With over two decades of experience, id8 works with leading Indian and global brands across luxury, lifestyle, fashion, retail, hospitality, beauty, wellness, finance, education, technology, entertainment, logistics, consumer, and corporate sectors. The agency helps brands strengthen reputation, sharpen go-to-market strategy, build cultural relevance, and create measurable business value through integrated marketing and communications.

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id8 media solutions



Mongolia: Workshop dedicated to Italian Textile Technologies was held in Ulaanbaatar

The workshop dedicated to Italian textile technologies in Ulaanbaatar from 21 to 23 June 2026. Focused on the most advanced innovative solutions for the textile industry, the initiative will bring together 13 Italian textile machinery manufacturers, confirming the growing interest in strengthening industrial cooperation between the two countries and highlighting Mongolia's strategic importance for Italian textile machinery producers.

The Italian textile machinery industry is internationally recognized as a leading benchmark for technology, innovation, and quality. Italian companies in the sector stand out for their ability to provide flexible, versatile, and customized solutions, capable of responding rapidly to customer needs and creating high value-added market niches. During the workshop, particular emphasis will be placed on supporting the Mongolian textile industry in its transition toward efficient, premium-quality production. Italian technology can make a tangible contribution to the country's industrial modernization and sustainability efforts.

The technological partnership between Italy and Mongolia is rooted in Italy's excellence in cashmere and wool processing, two raw materials of strategic importance to the Mongolian economy. According to data compiled by ACIMIT, the Mongolian market has demonstrated significant dynamism in recent years, with the overall trend pointing to a steady expansion of trade cooperation between the two countries. The technologies most in demand among Mongolian operators are primarily those related to spinning, which accounts for 35% of total Italian exports to the country, followed by laundry machinery (21%), accessories (19%), finishing equipment (14%), and weaving machinery (11%).

"Mongolia represents a highly promising market for our industry," said Marco Salvadè, President of ACIMIT. "The participation of Italian companies in the Ulaanbaatar workshop demonstrates a strong commitment to consolidating a long-term technological partnership. Our highly specialized and flexible technologies are ready to support local operators in upgrading their production processes and increasing the added value of their textile exports. The workshop in Mongolia is also part of a broader program of initiatives aimed at promoting the Italian presence at ITMA Hannover 2027, the world's leading exhibition for textile and garment technologies, where Italian companies will once again showcase the very best of textile machinery innovation."

The initiative, promoted by the Italian Trade Agency and ACIMIT, with the valuable support of the Embassy of Italy in Mongolia, will feature the participation of the following Italian companies: Biancalani, Bianco, Color Service, Cormatex, Fadis, Lawer, Mesdan, Cosmatex, Pinter Caipo Italia, Proxima, Stalam, Tecnomeccanica Biellese, Ugolini. ACIMIT (Association of Italian Textile Machinery Manufacturers) was founded in 1945 with the primary objective of promoting the Italian textile machinery industry by supporting its activities both in Italy and abroad. A non-profit organization, it currently brings together approximately 200 textile machinery manufacturers representing 85% of the sector's turnover in Italy, for a total value of about 2.1 billion euros, of which approximately 86% is exported to 130 countries worldwide. The technologies produced are divided into various reference categories: spinning, weaving, knitting, finishing, and other machinery. Creativity, sustainable technology, reliability, and quality are the characteristics that have made Italian textile machinery a world leader.

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Bluesign launches the 2026 editions of its three core chemical list

Bluesign has released the 2026 editions of its three core chemical reference lists: BSSL Version 17.0, BSBL Version 8.0, and bluesign RSL Version 17.0. Updated annually, these reference lists reflect the latest toxicological and ecological research, evolving global regulations, new analytical methods, and recommendations from the bluesign Chemical Expert Group - a panel of product stewardship experts from bluesign System Partner companies who evaluate substances and establish chemical limits across the bluesign System.

Understanding the Three Lists

Each reference list serves a distinct purpose within the manufacturing process:

- ▶ bluesign System Black Limits (BSBL): Establishes threshold limits for substances contained in chemical formulations used during manufacturing, including dyes and auxiliaries.
- ▶ bluesign System Substances List (BSSL): Defines consumer safety limits for substances present in finished textile products.
- ▶ bluesign Restricted Substances List (RSL): Serves as the consumer safety reference used by brands and retailers for purchasing specifications and product testing.

Each publication includes a detailed change log outlining newly added substances, revised limits, and other technical updates.

The most significant revision this year focuses on PFAS. Updates include:

- ▶ Expansion of the PFAS phase-out chapter.
- ▶ Revisions to recommended testing methodologies.
- ▶ Introduction of a new section distinguishing fluorinated non-PFAS dyestuffs from PFAS compounds.

With these revisions, bluesign PFAS limits are now aligned with the values established under the French PFAS restriction, as well as the limits proposed under Sweden's national restriction and the broader EU PFAS restriction proposal.

Additional updates across the lists include:

- ▶ New restricted flame retardants, including Dechlorane Plus.
- ▶ New colorant restrictions, including Basic Green 4 (Malachite Green).
- ▶ New or tightened limits for selected amines, arylamines, isocyanates, biocides, and metals including mercury, nickel, antimony, and chromium.
- ▶ A new chapter establishing substance limits for jewelry, aligned with the AFIRM RSL.
- ▶ Newly identified Substances of Very High Concern (SVHCs).
- ▶ Updated analytical testing recommendations to improve accuracy and consistency.

Implementation Timeline

Unless otherwise specified, the revised requirements will be implemented on a phased schedule:

- ▶ BSBL (chemical inputs): Effective no later than July 1, 2027.
- ▶ BSSL and RSL (finished products and purchasing): Effective no later than July 1, 2028.

If you have any questions about the revisions or want to speak with a bluesign expert, please don't hesitate to reach out to me at ken@chapter2agency.com.

About bluesign

For more than 25 years, bluesign has partnered with brands, manufacturers, textile mills, and chemical suppliers to advance responsible textile production. Through its science-based input stream management system, bluesign helps facilities improve chemical management, strengthen worker health and safety, reduce environmental impacts, and support more sustainable manufacturing across global supply chains. www.bluesign.com

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Textile Recycling moves into its next industrial phase

From Concept to Capacity – Textile Recycling Comes of Age

About ITMA

Textile-to-textile recycling is rapidly moving from pilot-scale experimentation to industrial-scale implementation. Across Europe and Asia, investments in sorting, fibre regeneration, automation and recycling infrastructure are accelerating as the textile industry works to establish scalable circular production systems.

By the time of the last ITMA exhibition in Milan in June 2023, textile-to-textile recycling had emerged as a major textile industry theme, especially in Europe, with the practical engineering problems of how to sort, open, shred, clean, re-spin, re-extrude and requalify fibres at industrial scale being actively addressed.

The transition is creating opportunities not only for textile machinery manufacturers, but also for companies specialising in sorting systems, AI and automation, environmental engineering and digital traceability. As textile recycling moves towards industrial-scale implementation, the ecosystem increasingly depends on interconnected technologies spanning collection, sorting, fibre processing, spinning and material traceability.

Many of these technologies first gained broader international visibility at ITMA 2023 in Milan.

Progress has been rapid in the subsequent three years, with Andritz perhaps the most visible ITMA exhibitor in supplying solutions for mechanical recycling.

In a partnership with three French companies, Andritz has now established an industrial-scale business combining automated sorting and fibre recycling technology.

At its new plant in Amplepuis near Lyon, Nouvelles Fibres Textiles is now processing post-consumer textile waste into recycled fibres engineered for the spinning, nonwovens and composites industries.

Andritz has also installed several new recycling lines in other European countries recently, including those at Aitex, one of the Europe's largest textile research and development centres, and for Swedish company Ekolution, while working to establish new technologies for NextGen fibre developers such as Circ and Metsä Group.

These developments reflect a broader shift across the industry, where recycling technologies

are increasingly moving from isolated pilot systems towards integrated industrial production systems.

Industrial capacity moves from pilot to scale

Perhaps the most significant is the progress of RE&UP's operations in Gaziantep, Turkey.

RE&UP first entered a partnership with Andritz back in 2021, and has subsequently installed multiple recycling lines for both polyester and cotton, to build to an annual capacity of 200,000 tons. And its ambition doesn't stop there. The RE&UP goal is to reach one million annual tons by 2030.

Tackling recycling's sorting bottleneck

This year, Andritz is releasing the AI-based teXscan predictive sorting unit which evaluates fabric quality prior to recycling. It provides non-destructive quality measurements with the target of improving process speed, objectivity and fit-for-purpose outputs.

In a second, the teXscan generates 'the teXscore' scoring system which is paired with recommended processing options for ring-spinning, open-end spinning, nonwovens production or chemical recycling.

This output enables operators to make decisions without human inaccuracy, aligning material quality with the suitable process.

Sorting has been identified as a key bottleneck in establishing fully automated recycling systems, and alongside Andritz, Belgium-based Valvan is also supplying dedicated solutions.

Reliable feedstock preparation and automated material identification are increasingly recognised as foundational requirements for textile-to-textile recycling at industrial scale.

Valvan's Fibersort predicts the concentration of fibres in bales based on near infrared spectroscopy (NIRS) scans. It can also sort textiles based on colour using an RGB camera and the waste textiles can then be fed into the Trimclean unit which leverages AI and computer vision to extract zippers, buttons and labels from the sorted textile materials.

From manual sorting to fully automated lines

Also at ITMA 2023, Spain's Picvisa introduced its Ecosort AI-based optical sorting technology and this year has announced its eighth installation to date.

It is currently collaborating with fellow Spanish company Girbau – a specialist in laundry and automation solutions – on a new plant in Northern Europe integrating Girbau's feeding and separation system with the Ecosort as a single continuous and fully automated line.

Picvisa's Ecosort technology identifies and classifies used garments by textile composition, colour and type, generating homogeneous, higher value-added fractions for both the second-hand market and textile recycling companies. The integration of Ecosort with an automated feeding system enhances process stability, increases line productivity and enables more precise and consistent sorting while reducing reliance on manual labour.

Mechanical recycling gains commercial traction

Germany's Trützschler also introduced its TRUECYCLED mechanical recycling system designed to convert pre and post-consumer textile waste into high-quality spinnable fibres at ITMA 2023.

TRUECYCLED combines opening, cleaning and blending technologies to process cotton-rich waste while preserving fibre length as far as possible. The system integrates seamlessly into existing spinning preparation lines, enabling the production of yarns with significant recycled content.

This machine combination has gone on to find wide acceptance, with ten lines installed in India alone since its debut at the Milan exhibition.

Spinning systems adapt to recycled fibres

Leading staple spinning technology suppliers Rieter and Saurer have also continued to fine-tune systems for successfully processing recycled fibres into yarns.

Spinning recycled staple fibres presents several technical difficulties. The raw material often exhibits high variability in fibre length, strength and fineness due to prior processing and mechanical degradation. This inconsistency disrupts drafting, leading to uneven yarn structure and increased end breakage. Contamination from foreign particles or blends further complicates carding and cleaning, reducing efficiency and quality.

For textile manufacturers, these developments signal that recycling technologies are increasingly being integrated into mainstream spinning and production systems rather than remaining standalone pilot operations.

In addition, shortened fibres limit cohesion requiring higher twist which compromises softness and productivity.

At ITMA ASIA + CITME, Singapore 2025, Rieter presented its fully automated spinning mill concept, including ring and compact yarn production with recycling capability, suggesting recycling is no longer a niche add-on but being bundled into complete new mill projects.

Rieter also continues to push its Com4recycling spinning system, which enables up to 40% recycled fibre in ring/compact yarns and is now part of the Com4 branded yarn ecosystem and linked to licensing with GRS-certified mills.

Even higher recycled content is being achieved on Rieter rotor spinning machines as the company moves to standardise recycled yarn production.

High-volume recycled yarn production takes off

Saurer introduced its Autocoro 11 Recycling Xtreme designed to spin very short mechanically recycled fibres at ITMA 2023 and this debut was followed by the immediate sales of multiple lines which are now operational, especially in Turkey.

The BD 8 semi-automatic rotor system is meanwhile aimed at cost-focused recycling spinning, and here Saurer has secured one of its largest orders to date.

At the end of 2023, Chinese customer Hengbang Zhifang placed an order for ten BD 8 machines, representing 6,000 spinning positions, along with blowroom equipment and carding units.

Within a year, Hengbang Zhifang placed an order for further machines to rapidly build up its current annual capacity to around 120,000 tons.

Circularity requires technology, infrastructure and collaboration

All of these developments show ITMA exhibitors to be at a stage of full technological readiness, yet despite this evident maturity, the transition to true fibre-to-fibre recycling at scale is still constrained by a combination of structural and economic barriers.

The collection, sorting and processing of post-consumer textiles is inherently more complex than working with virgin raw materials, and the absence of globally aligned economies of scale continues to keep recycled fibres at a price disadvantage in many applications. This is further compounded by the capital intensity of new recycling installations and the need for continuous feedstock streams of consistent quality, which are not yet reliably available in most regions.

At the same time, legislation, while increasingly supportive in principle, remains fragmented in practice. Extended Producer Responsibility (EPR) schemes are being introduced across Europe, but differences in implementation, timelines and enforcement create uncertainty for investors.

Equally critical is the lack of established, efficient collection infrastructures capable of delivering sorted, traceable textile waste at the volumes required for

TEXTILE EVENTS

industrial recycling. Without harmonised systems linking consumers, collectors, sorters and processors, even the most advanced recycling technologies risk operating below capacity.

From recycling readiness to collective action

As a result, the industry now finds itself at a pivotal juncture, where engineering solutions are largely in place, but the scaling of fibre-to-fibre recycling will ultimately depend on aligning economics, policy and logistics into a coherent and dependable ecosystem.

As the industry works to overcome these barriers, ITMA 2027 offers a timely platform for technology providers, manufacturers, recyclers, brands and policymakers to align around the practical requirements for scalable textile recycling. Beyond showcasing individual innovations, it is where the industry can collaborate to build the interconnected systems needed to advance circular textile production at industrial scale.

For further information, please contact:
ITMA 2027 <info@itma.com>



HanoiTex 2026

Vietnam Hanoi Textile & Garment Industry Expo 2026
October 21 - 23, 2026, ICE, Hanoi, Vietnam

Organisers pleased to invite you to participate in HanoiTex 2026, Vietnam's premier exhibition dedicated to textile and garment machinery, equipment, parts and accessories.

Key Incentives of Hanoi:

- **Cost Advantages:** Land rents are 20% lower, and labor costs are 15% lower compared to southern provinces.
- **Strategic Location:** Proximity to China with robust railway and road connections enhances logistics for accessories.
- **Tax Benefits:** Enjoy up to a 70% land-tax waiver for five years and a corporate tax holiday for high-tech textile projects.
- **Infrastructure Development:** Significant government investment in Northern Vietnam strengthens its appeal for production facilities.

Market Opportunities in Vietnam:

- Vietnam's textile industry is transitioning towards high-value, technologically advanced production, targeting key markets like the United States, Europe, Korea Japan
- The government is investing heavily in infrastructure, supporting a shift to more advanced machinery and technology.

Secure Your Participation:

Exhibition space is limited and in high demand. Please register ASAP to secure your participation and to avoid being wait-listed! For details and registration, please visit www.vhanoitex.com or contact Mr Jason Chow in Hong Kong (Tel: +852 25117427, Fax: +852 25119692, Email: jason@cpexh.com, cpexh@yahoo.com, Wechat: cpexhibition) or our representative in your region.

Other events in Vietnam:

SaigonTex 2027 —

Vietnam Saigon Textile & Garment Industry Expo
April 7 - 10, 2027, SECC, Ho Chi Minh City, Vietnam

For further information, please contact:
jason@cpexh.com



Delhi edition of Gartex Texprocess India incorporating the Denim Show is set to drive business opportunities for the garment and textile manufacturing value chain

India's garment, textile and denim manufacturing industries are strengthening their manufacturing capabilities through technology adoption, modern production systems and process optimisation to remain globally competitive. Reflecting these developments, Gartex Texprocess India incorporating the Denim Show will return to Bharat Mandapam from 6 – 8 August 2026. The exhibition will bring together 185+ exhibitors and 700+ brands and will display over 1,200 products across 14,850 gross sqm. Featuring a dedicated zone for The Denim Show, supported by the Denim Manufacturers Association, the expo will showcase the complete denim value chain. The exhibition will bring together leading technology providers, manufacturers, brands, and buyers to showcase innovations.

Having established itself as a key fixture in the textile industry's annual business calendar, the exhibition continues to provide a constant platform where the industry stakeholders reconnect to exchange ideas, launch innovations, evaluate investments and build long-term business relationships. The expo as a focused B2B platform, manufacturers of textile technologies, garment and textile machinery, accessories, fabrics, and allied solutions with garment and apparel manufacturers, bulk buyers, textile factory owners, textile designers, and other stakeholders from across the industry. Complementing the exhibition, Denim Show, supported by Denim Manufacturers Association will

spotlight the complete denim value chain, featuring Denim Mills & Fabrics, Accessories & Trims, Denim Finishing & Washing Technology, Denim Garment & Apparel Machinery, and Dyes & Chemicals.

The 2026 edition will witness expanded participation across sewing machinery, spare parts, digital textile printing, embroidery technologies, laundry and finishing systems, denim manufacturing solutions and automation technologies. More than 70 companies will be participating for the first time, along with international representation from regions such as China, Japan, Singapore, Italy, Germany, Taiwan, Turkey and Hong Kong, which will further strengthen the exhibition's international profile.

Brands like Anand Furnisher, Apsom Technologies, Aura Technologies, Baba Textile Machines, DCC, Fabcare, HCA, MRA Sons, Mehala Machines, Saistar, Sunny & Co., Orange O Tec, along with several other prestigious brands. International brands such as Grozbeckert, Epson, INL, Kansai, Schmetz, Shangong, Jinzen and more will showcase their latest products.

Alongside Gartex Texprocess India, the Denim Show in with the support of the Denim Manufacturers Association of India, will showcase innovations in denim fabrics and dyes providing sourcing professionals with dedicated opportunities to explore new developments. Brands like Arvind, Ginni, Jindal, Lion Fabrics, Maruti Denim, Nandan, Raymond, Sudarshan Denim, Surya Lakshmi, TCM, Vinod Denim, among others, will be featuring their latest collections of denim fabrics and finishes.

Expressing her ideas, Ms Himani Gulati, Director, MEX Exhibitions Pvt Ltd, shared: "Each edition of Gartex Texprocess India is built around what the industry needs most – access to the right technologies, the right buyers and meaningful business opportunities. We endeavour to continuously strengthen the platform so that exhibitors achieve tangible business outcomes while visitors discover innovations that support their manufacturing, sourcing and investment goals. With the 2026 edition, we look forward to bringing the industry together once again to facilitate meaningful business connections, showcase transformative technologies and create new opportunities that will shape the future of the textile manufacturing."

Adding to this, Mr Raj Manek, Executive Director & Board Member, Messe Frankfurt Asia Holdings Ltd, remarked: "Gartex Texprocess India has grown into a trusted marketplace where technology, innovation and business converge, reflecting the evolving priorities of India's textile manufacturing sector. The Indian textile industry is entering a phase

where competitiveness will increasingly depend on technology adoption and manufacturing efficiency. Over the years, the show has evolved into an important annual business platform where serious buyers evaluate investments in technology and production capabilities, while exhibitors showcase innovations, strengthen partnerships and generate quality business opportunities."

Complementing the exhibition, the conference programme planned as Gartex Talks and Denim Talks will bring together subject-matter experts to discuss the opportunities and challenges shaping the future of textile production. The sessions will focus on practical industry focused area prioritising discussions around topics like: From Forecast to Factory: How AI and Consumer Signals Reshaping Apparel Manufacturing; The New Fashion Consumer: How Gen Z and Gen Alpha Are Reshaping the Denim Industry; Next-Generation Industrial Sewing Machines: Speed' Precision & Sustainability; Denim Reimagined in a World of Disruption, India's Denim Export Ambition-Can We Move from Volume to Value? and Automation in Embroidery: Mass Production Meets Customisation.

The exhibition comes at a significant time for the textile industry as India's recently concluded trade agreements with key global markets, including the United Kingdom and the European Free Trade Association (EFTA), are expected to strengthen export competitiveness and create fresh opportunities for Indian manufacturers. At the same time, continued policy support for domestic manufacturing and technology adoption is encouraging greater investment in modern production capabilities across the textile value chain.

The show is jointly organised by MEX Exhibitions Pvt Ltd and Messe Frankfurt Trade Fairs India Pvt Ltd. The exhibition will showcase the latest advancements in textile machinery and manufacturing technologies and denim innovations reflecting the industry's growing focus on productivity, circularity and global competitiveness.

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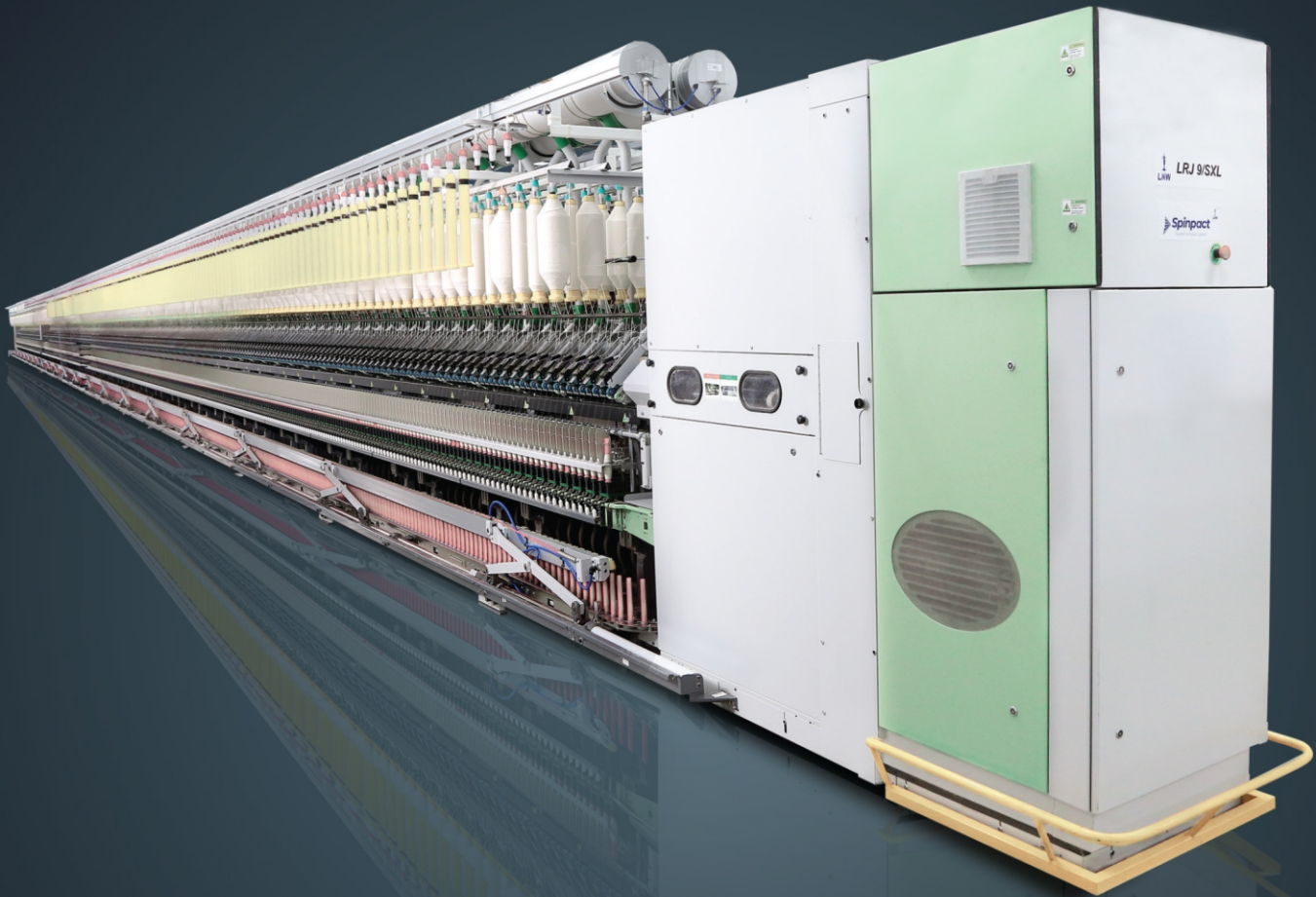
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Crafting Future Ready Spinning Mills — LMW's Innovation Hub in Surat Cluster

SURAT'S TRANSFORMATION – LMW'S VISION

Surat, Gujarat, is one of India's most dynamic and strategically important textile hubs. Known as the "Silk City" and the capital of synthetic textiles, Surat has built a highly integrated textile ecosystem spanning spinning, texturising, weaving, processing, embroidery, and large-scale trading. Over the years, the city has emerged as a major producer of polyester fabrics and man-made fibre (MMF) textiles, catering to domestic and global markets.



At the core of this ecosystem is the spinning industry, which converts raw fibres into yarn for downstream textile applications. Surat's spinning sector largely focuses on synthetic, MMF, and textured yarns, supporting thousands of weaving units while contributing significantly to employment and regional economic growth.

With global textile markets demanding greater flexibility, sustainability, traceability, and faster response cycles, Surat's spinning industry is rapidly transitioning towards smart and future-ready manufacturing. Modern spinning mills are now evaluated not only by production capacity, but also by their ability to deliver automation, consistent quality, energy efficiency, and agile manufacturing capabilities.

As the industry evolved, the need for advanced technology, productivity enhancement, quality improvement, and modernization of ageing infrastructure became increasingly critical. In

this transformation journey, LMW Limited has played a vital role in strengthening Surat's spinning segment. As one of India's leading textile machinery manufacturers, LMW has consistently delivered advanced spinning solutions that enable higher efficiency, superior yarn quality, and lower operational costs.



Through modern machinery, automation systems, and energy-efficient technologies, LMW has helped spinning units upgrade from conventional operations to technologically advanced manufacturing environments. Its solutions have enabled higher productivity, reduced waste, improved yarn uniformity, and enhanced competitiveness in both domestic and export markets. Beyond machinery supply, LMW's strong technical support, training initiatives, and responsive after-sales service have further strengthened operational excellence across the cluster.

LMW's advanced spinning technologies are enabling mills to adopt Industry 4.0 practices through automation, digital monitoring, optimized machine performance, and data-driven operational efficiency. The growing demand for man-made fibres, value-added yarns, and sustainable textile applications is further redefining the future of spinning, requiring technologically superior and flexible machinery solutions.



Crafting Future Ready Spinning Mills — LMW's Innovation Hub in Surat Cluster

In an era where precision, sustainability, and innovation define global competitiveness, technology-driven modernization has become essential. Through continuous innovation and customer-focused solutions, LMW has enabled Surat's spinning industry to align with evolving global standards while reinforcing the city's position as a leading textile manufacturing hub.



"Customer Voice"

"The growing confidence of Surat's spinning entrepreneurs in LMW's technology leadership is reflected in the success stories emerging across the cluster. From greenfield projects to modernization initiatives, spinning mills continue to rely on LMW for productivity enhancement, automation, energy optimization, and dependable lifecycle support. Intelligent automation solutions such as Auto Doffer systems, Compact Spinning, and smart monitoring technologies are steadily becoming the foundation of modern future-ready spinning mills."

KANSAL SPINNING PVT. LTD

"We are very much satisfied with LMW machines and their team. We are especially happy with the automation solutions including Auto Doffer Speed Frame. Their round-the-clock service and easily available spare parts keep our operations running smoothly."



Mr. Pramod Kansal, Director
Kansal Spinning Pvt. Ltd. (A-Z, LMW Project, 26,112 Spindles)

SUNIDHI SPINNING LLP

"Surat has been a textile hub for decades and is one of India's leading fabric manufacturing centers. We entered spinning in 2012 with Shri Muniveer Spinning Mills, starting with a 20,000-spindle A-Z LMW setup. With our latest

26,000-spindle expansion, A-Z LMW setup we are using Compact and SIRO Compact systems and producing yarns using man-made fibers (MMF), which are emerging as an innovative and effective alternative to conventional filaments. LMW has been our trusted partner since day one, and our association since 2012 has been consistently strong and supportive."



Mr. Mehul Patel & Mr. Badal Bharatia, Managing Directors,
Sunidhi Spinning LLP (A-Z LMW Project, 26,112 Spindles)

HAMI WEAVELON PVT. LTD

"From the very beginning, LMW team has been by our side, when we were new to spinning, they patiently explained every aspect of the process, guided us on how to move forward, and advised us on the right machines and configurations for our requirements. What truly sets LMW apart is their unwavering commitment even after installation; whenever we face a challenge, their support team is always just a call away and at our doorstep without delay. It has been a remarkable experience working with LMW."



Mr. Chirag Saharia, Director, HAMI Weavelon Pvt. Ltd
(A-Z LMW Project, 29,376 Spindles)

SHREE RAGHUVeer SPINNING PVT LTD

"LMW machines are very reliable and require very little maintenance. Breakdowns are rare, and routine servicing is simple and quick. This gives us peace of mind and allows our team to focus on production targets rather than troubleshooting issues. Hence, we went ahead and repeated A – Z LMW machinery for the expansion project without a second thought"



Mr. Mehul Dhanani, Director,
Shree Raghuveer Spinning Pvt. Ltd
(A-Z LMW Project, 33,888 Spindles)

INDOSPUN YARN PVT LTD

"From installation to regular operations, LMW has been a reliable partner for us. The machines deliver high output, excellent yarn quality, and run smoothly with minimal interruptions. This has improved our delivery timelines, boosted customer satisfaction, and strengthened our reputation in the market. After sales support team is quick in responding to our queries & resolving any technical issues reported by us, in very short time. This aspect gives us lot of comfort."



Mr. Amrut Bhai, Director,
Indospun Yarn
(A-Z LMW Project,
8640 Spindles)

MARUDHAR SPINNING PVT LTD

"We upgraded our machinery with the latest LMW Smart Technology, which has significantly transformed our operations-delivering higher productivity, superior quality, and reduced power costs. It has been a true game changer for our overall competitiveness. The after-sales support team is exceptionally responsive, ensuring smooth operations and preventing prolonged production stoppages."



Mr. Abhishek Birla, Director, Marudhar Spinning
(A-Z LMW Project, 19,308 Spindles)

As Surat further strengthens its position as a global hub for advanced synthetic and value-added textiles, the demand for intelligent, efficient, and sustainable spinning solutions will continue to grow. Backed by cutting-edge smart technology, automation expertise, and strong customer-centric support, LMW is playing a pivotal role in shaping the next generation of future-ready spinning mills. By enabling higher productivity, superior yarn quality, energy optimization, and smart manufacturing practices, LMW is helping textile entrepreneurs build globally competitive and environmentally responsible operations. The growing success of A-Z LMW installations across the Surat cluster reflects a shared vision between LMW and progressive mill owners to redefine the future of modern spinning.

**For further information, please contact
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Website: <http://www.lmwtmd.com/>



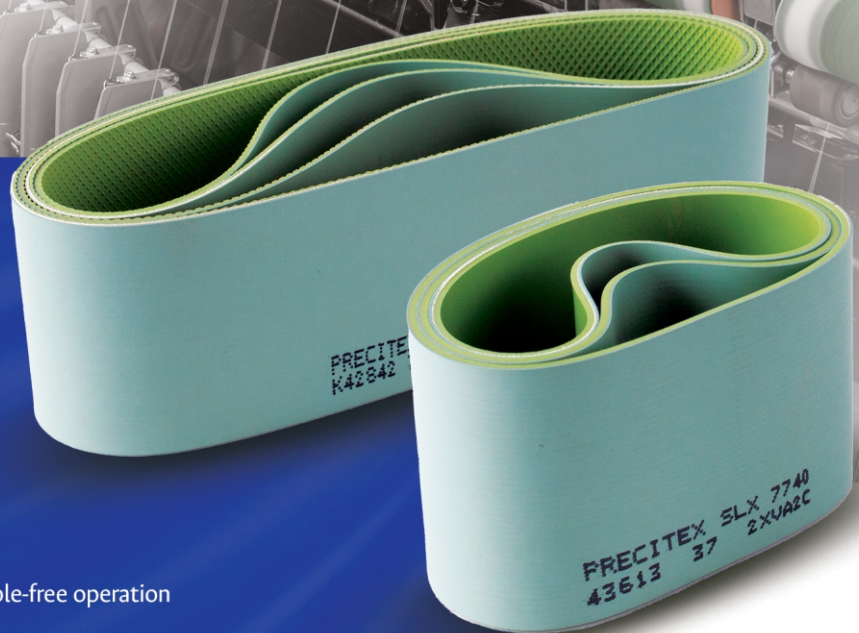
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Barmag

Barmag Original Parts ensure cost-effective production of high-quality yarns driving higher productivity

Specialist in fine counts: New type 2777 ceramic oiler

With the new Type 2777 ceramic oiler, Barmag has introduced a solution for fine titers and microfilaments to its portfolio of original parts.

The new design, based on the proven model 2888, is significantly slimmer and has been specifically optimized for fine titers and sensitive filament counts. While the type 2888, as an all-rounder, demonstrates its strengths in the high denier range and up to 288 filaments, the type 2777 offers the long-awaited solution for the lower fineness range. This is where standard oilers often reach their physical limits, leading to uneven deposits in the corners or instability in the yarn path when processing finer titers. Here, the narrower variant excels with maximum precision in the process.

Both oiler types are designed for reduced spray-off thanks to their special geometry. In the fine-titer range, the new design reduces spray-off by a further 50% compared to the use of standard oilers. Extremely easy to adjust, the oiler impresses with its tolerance for installation deviations of $\pm 2^\circ$. This largely prevents uneven oil application. The integrated ceramic shaft eliminates the typical errors that occur during the labor-intensive process of bonding metal shafts, thereby ensuring greater process stability.



Serving the market for fine titers below 100 denier: The new Barmag ceramic oiling device, type 2777.

Ceramic quality has a direct impact on yarn quality

The quality of yarn-guiding components in the spinning process is also a decisive factor for

downstream processing. Inferior ceramics have a negative impact on yarn quality, which manifests itself in the downstream processing. Initial market deployments of the new oiler confirm the yarn's improved downstream performance—a result shared by other ceramics from Barmag.

For yarn manufacturers, the ability to schedule the replacement of wear parts is particularly important: Thanks to consistently high manufacturing quality, components wear out in a controlled and synchronized manner—rather than unpredictably, as is the case with inferior components. This enables greater process stability and predictive maintenance.

Object Carpet tests production of rPET BCF yarn on Neumag BCF line displays

Neumag BCF technology demonstrates the potential for carpet-to-carpet recycling

In a joint project with Object Carpet GmbH, Denkendorf; the Institute for Textile Technology (ITA), Augsburg; and Next Generation Recyclingmaschinen GmbH (NGR), Feldkirchen, Austria, Barmag investigated the processing of recycled polyester for BCF yarn. The goal was to evaluate the fundamental suitability of 100% recycled carpet material for reuse in carpet yarn production to create a closed-loop system in carpet manufacturing. To date, commercial rPET BCF processes have been based solely on rPET from bottle pellets.

The tests were conducted on the Neumag BCF line at the R&D center in Neumünster. Thanks to its flexible process control and targeted parameterization, the line enables the processing of even challenging materials and is therefore well-suited for development and test runs.

As part of the investigations, recycled PET from 100% polyester NEOO carpet material supplied by Object Carpet was processed without the addition of virgin polymer. The trials, conducted on a practical production scale, demonstrated that it is possible to feed the material back into the spinning process. Dr. Kirsten Prehn, who is responsible for the Neumag BCF processes, summarizes: "During the trials, we observed that, as expected, material quality — particularly viscosity and purity — significantly influences process stability and yarn quality. Using the Neumag BCF system, we were able to adapt the process control specifically and flexibly to the particular requirements of the recycled polymer and thus produce BCF yarn."

Part of the recycled yarn was subsequently used to produce a carpet sample. The results show that a closed-loop system in the BCF sector is not merely a theoretical concept: a mono-material carpet product can deliver a genuine recycling loop in practice — without the addition of virgin polymer. Neumag BCF systems can play a key role in the evaluation and further development of recycling processes. At the same time, the trials have identified areas where approaches for stable industrial implementation and further optimizations in material design and process control are possible. The flexibility of process control on Neumag BCF systems is an essential prerequisite for this.



From carpet to carpet: Flexible process control on Neumag BCF systems enables the targeted processing of recycled polymers and lays the foundation for closed-loop material cycles in carpet production.

About Barmag

Since 2026, the Swiss Rieter Group has been operating its man-made fibers business as subsidiary under the traditional name Barmag. This includes the established product brands Barmag and Neumag. As a future-oriented company, the research and development of Barmag is driven by energy-efficiency and sustainable technologies (e-save).

Barmag is one of the leading providers of manmade fibers filament spinning systems,

texturing machines, BCF systems, staple fibers systems and solutions for the production of nonwovens. Together with its range of polycondensation and extrusion systems and their key components, Barmag caters to the entire manufacturing process – from the monomer all the way through to the textured yarn – and supports it with customer-oriented engineering services. The product portfolio is rounded off with automation and digital solutions. 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, Türkiye and the USA. Worldwide, Barmag – with round about 2,500 employees – has a presence in 120 countries with production, sales and distribution and service organizations. At the Research and Development centers in Remscheid, Neumünster (Germany), and Suzhou (China), highly qualified engineers, technologists and technicians develop innovative and technologically leading products for tomorrow's world.

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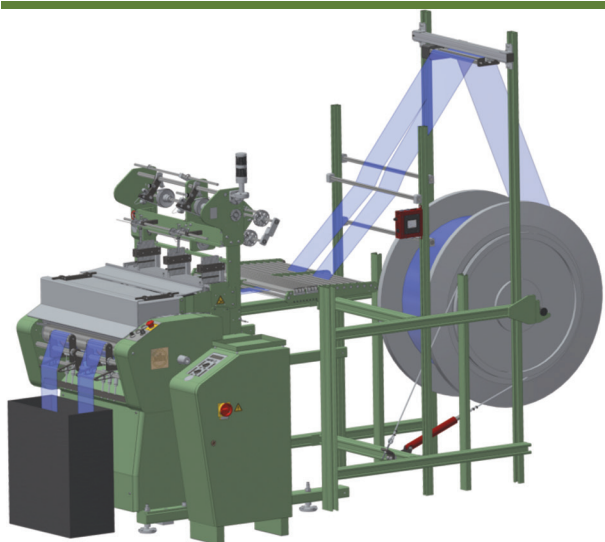
Special Solutions for Warp Yarn Feeding in Weaving and Warp Knitting Machines

More Performance. More Efficiency. More Future Security

Competitive pressure is increasing. Markets demand the highest quality, maximum productivity, and energy-efficient processes - while keeping investment costs predictable.

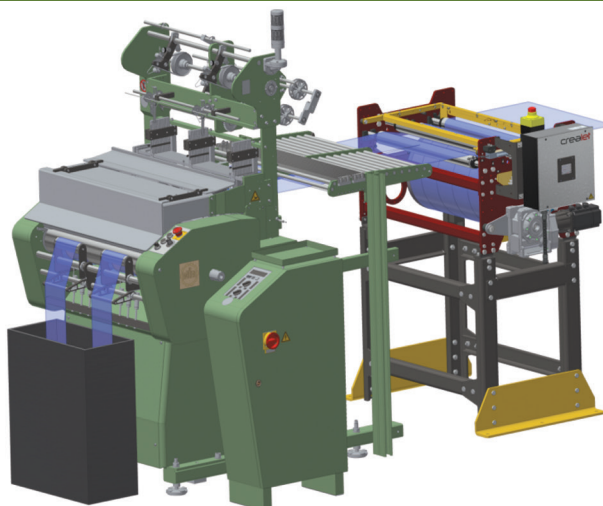
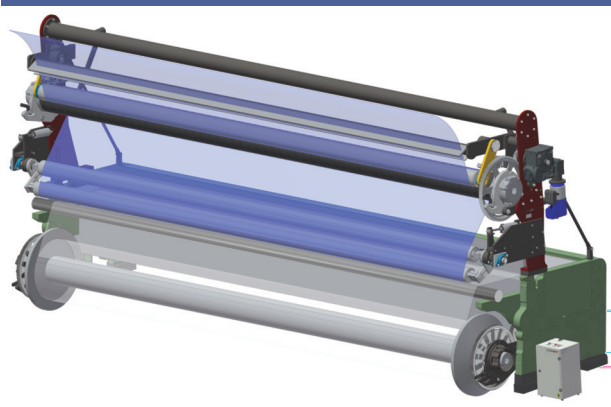
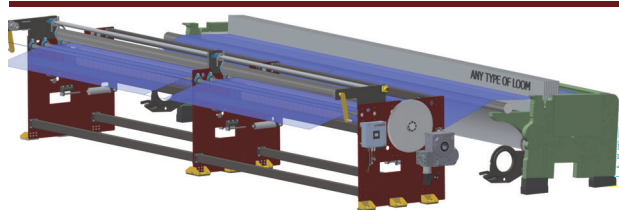
SCIENCE IN INDUSTRY

Those who want to achieve sustainable differentiation today need more than standard solutions. Proprietary ideas, innovative technology, and tailor-made systems provide the decisive competitive edge.

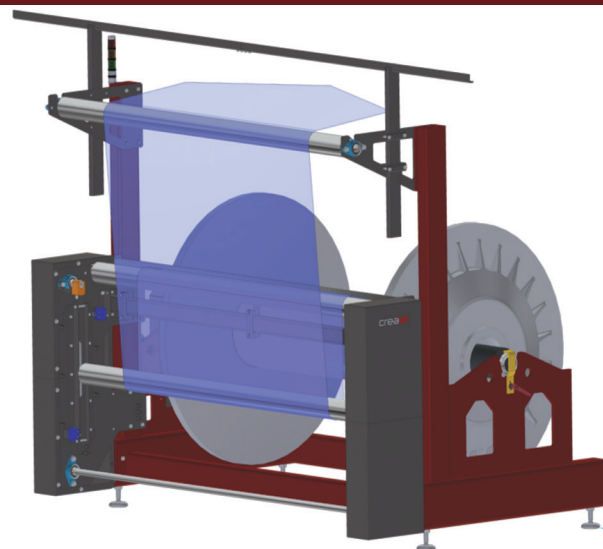


Customized Technology when standard is not enough

Especially in warp yarn feeding, standard solutions often reach their limits. Different material properties, special yarn qualities, high machine speeds, or limited installation space require individual concepts - precisely tailored to your process.



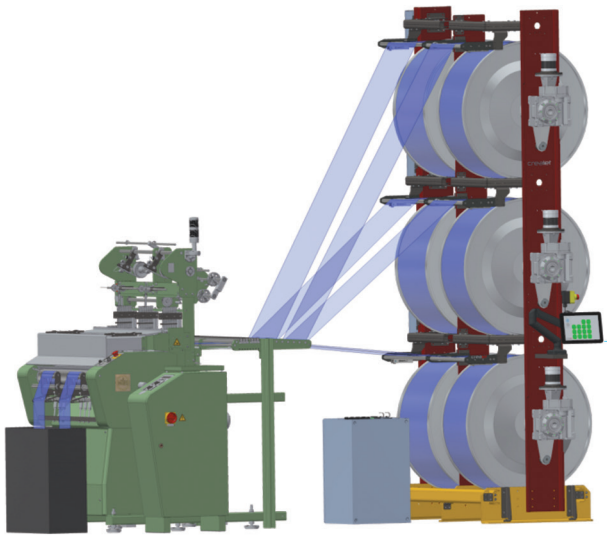
Our special solutions for weaving and warp knitting machines are used exactly where standard components reach their limits. We develop and implement customer-specific systems for weaving from creels, beam creels, or other yarn carriers such as selvage bobbins, etc.



Advantages:

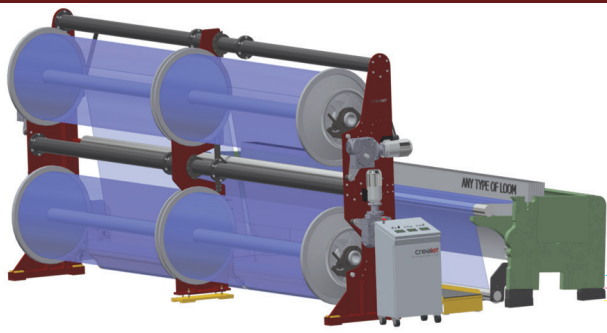
- Precisely tailored to your machine configuration and process requirements
- Constant and reproducible yarn tension - even with demanding yarns
- Maximum process stability and production reliability
- Seamless integration into existing systems
- Simplified operation, maintenance, and handling

Whether compact designs for limited installation space, special tension control concepts, or customized interface connections - we deliver solutions that perfectly match your application.



Innovation as a Competitive Advantage

Individually developed warp yarn feeding systems increase the performance of your machines while ensuring technological differentiation in the market.



The result:

- Higher product quality
- Reduced waste
- Improved energy efficiency
- Reduced labor requirements
- Sustainable production reliability

Choose technology that fits your process - not the other way around.

For further information, please contact:

Crealet AG

Hüeblistrasse 41 8636

Wald/ZH- Switzerland



Marzoli Textile Machinery Manufacturers Pvt. Ltd.

Marzoli Achievements

Upgrade Your Spinning Mill Without Replacing Your Machines

In today's competitive textile environment, staying ahead is not about replacing your machinery—it's about maximizing the value of what you already have.

With Marzoli Retrofitting Solutions, you can transform your existing spinning machines into high-performance, digitally connected assets—without heavy capital investment.



Why Retrofitting is the Smart Choice?

- Extend machine life while improving performance
- Increase productivity and operational efficiency
- Enable digital connectivity and real-time monitoring
- Reduce downtime and maintenance costs
- Protect your existing investment

A Smarter way to stay competitive in a cost-sensitive market

Our 3-Pillar Modernization Approach

1. Electrical & Connectivity Upgrades

- ❖ Advanced electrical systems for higher reliability
- ❖ Real-time machine monitoring
- ❖ Seamless integration with digital platforms

2. Mechanical Enhancements

- ❖ Targeted upgrades for improved automation
- ❖ Increased flexibility in operations
- ❖ Boost in productivity and machine performance

SCIENCE IN INDUSTRY

3. Digital Intelligence & Control

- » Smart monitoring and control systems
- » Process optimization through data insights
- » Foundation for AI -driven predictive maintenance

Together, these upgrades enhance efficiency, reliability, and digital readiness

Key Customer Benefits

- » Higher production with existing machines
- » Improved yarn quality and consistency
- » Reduced energy and maintenance costs
- » Faster decision -making with real -time data
- » Future-ready digital spinning operations

Don't replace. Upgrade intelligently.

Retrofitting is the fastest and most cost -effective way to modernize your spinning mill and unlock hidden productivity.

Call to Action

Let us assess your current installation and recommend a customized retrofitting roadmap to enhance your plant performance.

Refiber Technology – Giving Textile Waste a Second Life

In today's textile industry, sustainability is no longer optional; it is a business necessity. With Marzoli's innovative Refiber Technology, you can transform textile waste into high-quality, reusable fibers, creating a truly circular production model.



What is Refiber Technology?

Developed at Marzoli's Technology Accelerator Center (TAC), Refiber is a patented solution that regenerates textile fibers from:

- » Unsold garments
- » Production waste
- » Post-industrial textile materials

This process produces recycled fibers with superior length and quality, enabling efficient reuse in spinning applications.

From Waste to High-Performance Fiber

Unlike conventional recycling methods, Refiber ensures:

- » Improved fiber length and strength
- » Consistent quality for spinning processes
- » Applicability across multiple fiber types
 - » Cotton
 - » Wool
 - » Cashmere
 - » Synthetic blends

Result: From raw waste to finished garment – a complete circular journey

Key Value Proposition for Spinning Mills

1. Circular Economy Enablement

- » Convert waste into valuable raw material
- » Reduce dependency on virgin fibers

2. Cost Optimization

- » Lower raw material costs
- » Improve overall profitability



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skaushik@fancytex.com


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3. Process Compatibility

- » Seamless integration into existing spinning processes
- » Maintain yarn quality and performance

4. Sustainability & ESG Alignment

- » Reduce Environmental Footprint
- » Support compliance with global sustainability goals

Business Impact on Customers

- » New revenue opportunities from recycled fibers
- » Enhanced brand value through sustainable production
- » Alignment with global buyers' sustainability requirements
- » Competitive advantage in export markets

Turn your waste into value. Create sustainability with performance - Refiber Technology empowers spinning mills to move from linear production to circular manufacturing —without compromising quality.

Call to Action

Let us evaluate your current waste streams and design a customized Refiber -based recycling solution for your plant.

Textile India Market

Indian Textile Industry: Current Scenario - March 2026

Key Challenges

- » Cotton prices surged to ₹60K+/candy → margin pressure
- » Energy cost volatility (renewable curtailment impact)
- » Demand slowdown (domestic + exports)
- » Geopolitical risks impacting order visibility

Operating Reality

- » Mills in controlled production mode
- » Increasing working capital stress
- » Profitability under pressure despite stable capacity

Profitability today depends on efficiency, not expansion.

- » Maximize output from existing machines
- » Reduce waste & energy consumption
- » Enable real-time visibility & faster decisions

Industry = "High Cost + Uncertain Demand" environment

Policy Direction & Structural Shift - Government Push & Industry Transformation

Policy Momentum

- » PLI Scheme expansion (MMF & Technical Textiles)
- » Budget focus:
 - » National Fibre Scheme
 - » Tex-Eco (Sustainability)
 - » Samarth 2.0

Structural Shifts

- » Cotton → MMF / Technical textiles
- » Rise of circular economy (recycling)
- » Increasing digital adoption across mills



Budget 2026 – Government Push for Textile Sector

Integrated 5-Pillar Strategy - Key Initiatives

- » National Fibre Scheme → Fibre self-reliance (Cotton + MMF)
- » Textile Expansion Scheme → Technology & modernization support
- » Tex-Eco Initiative → Sustainability & ESG alignment
- » Samarth 2.0 → Skill development
- » Handloom & Handicraft Support → Inclusive growth

Strategic Impact

- » Strengthens Fibre → Fabric → Fashion value chain
- » Drives exports, employment & sustainability
- » Encourages technology adoption

SCIENCE IN INDUSTRY

Government is enabling transformation.

- Retrofitting & modernization
- Digital manufacturing solutions
- Sustainability & circular production readiness

Future-ready mills will be digital, flexible, and sustainable.

- MOM / MES / Health Monitoring solutions
- Multi-vendor machine integration capability
- Support for MMF & advanced spinning
- Enable circular manufacturing (Refiber readiness)

Shift to “Value-Added + Sustainable + Digital Textile Ecosystem”

Camozzi Group

Made in Italy is not just an origin: it is our way of thinking, designing, and innovating. As Camozzi Group, we bring this value to life by developing manufacturing solutions rooted in Italian know-how: a unique balance of expertise, quality, innovation, and attention to detail. Today, on National Made in Italy Day, we celebrate our Italian identity: the ability to transform knowledge into value and to envision—every day—the industry of tomorrow.

From Automation Supplier to Technology Solutions Leader

Key Developments

- Global Exhibitions (CONEXPO, JEC World, MD&M) - Expanding presence across construction, aerospace & medical sectors
- Advanced Manufacturing Focus - Large-format additive manufacturing (3D printing), Use of recycled materials (sustainability-driven innovation)
- Multi-Industry Expansion - Beyond industrial automation into high-growth sectors
- Digital & Mechatronics Integration - Combining pneumatics + electronics + digital intelligence

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Marzoli Textile Machinery Manufacturers
Pvt. Ltd

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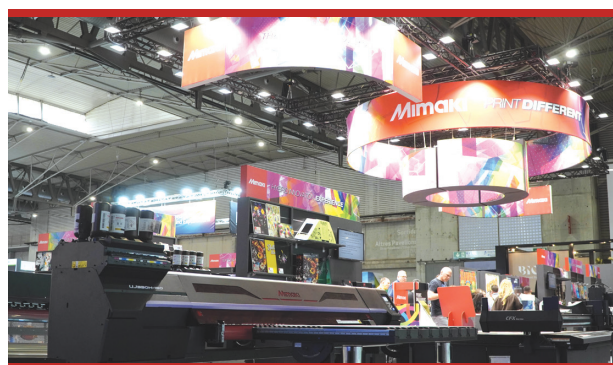


Mimaki Europe BV

Mimaki ‘Powers Possibilities’ with a Market-Diverse Application and Printer Line-Up showcased at FESPA 2026

- » Under the theme “Print Different - Powering Possibilities.”, Mimaki turned its FESPA booth into a dynamic showcase of real-life applications, print workflows and growth opportunities
- » The company demonstrated how its latest textile and sign graphics technologies – from DTF to hybrid - can help print businesses diversify, adapt to and unlock new markets

Mimaki Europe, a leading manufacturer of industrial inkjet printers and cutting plotters, brought its “Print Different - Powering Possibilities” theme to life at FESPA Global Print Expo 2026 demonstrating how digital printing technology can turn ideas into high-value applications and new business opportunities.



At this year’s show, Mimaki is conveying its customer-led innovation strategy through an application-focused stand concept (Hall 3, Booth D95), built around dedicated “Experience Areas” spanning hybrid UV, sign graphics, textile, personalisation and high-volume production. Each area offers live printing, finished samples and workflow demonstrations to show how Mimaki solutions can support application diversification, production flexibility and business growth across different segments and materials, while reflecting the company’s commitment to innovating with purpose.

“At FESPA 2026, we wanted to show customers not only what our technologies can do, but what they can make possible,” comments Danna Drion, General Manager Marketing and Product Management, Mimaki Europe. “Print service providers are looking

for tangible ways to expand their offering, improve efficiency and respond to new market demands. Our stand has been built around those needs, with live applications and workflows that mirror real production environments, so visitors got opportunity to see how Mimaki innovation can help them diversify with confidence."

Innovation in UV- Hybrid Flexibility to Accessible Roll-to-Roll Production

A key focus of Mimaki's presence at the show was the continued expansion of UV printing into new application areas. Showcased for the first time at an international show, the recently launched UJ330H-160 hybrid UV printer got featured on the booth's Hybrid Innovation Experience, demonstrating how one technology platform can support both roll-to-roll and rigid applications. Designed to help customers increase production versatility, without adding unnecessary complexity, the UJ330H-160 enables print businesses to explore applications and move seamlessly between signage, interior décor, display graphics, packaging and point-of-sale.

Early customer feedback on the UJ330H-160 has already highlighted the value of combining roll and rigid production in one system, particularly for businesses looking to reduce outsourcing, optimise production space and expanded into new application areas.

For Infront Nordic, a Swedish print service provider and the first UJ330H-160 customer in Sweden, supported by Mimaki dealer Color Systems, output quality and reliability were key factors in the company's investment decision. According to Johan Husak and Robin Jernström, Owners, Infront Nordic: "The print quality convinced us immediately. The 4pl output and the new UV inks deliver excellent results on rigid boards, with consistency we can rely on." For print businesses evaluating hybrid technology, the system is also helping to change perceptions. "I used to see hybrid machines as a compromise, but the UJ330H-160 proved me wrong. The output was clean and precise across roll, soft and rigid media. Mimaki solved hybrid printing properly," comments Volkan Başkozan, Owner at Turkish printing specialist DB Reklam.

This positive response has also been reflected across Mimaki's channel network. Following launch events for the new hybrid printer, the team at IGEPA Belux, Mimaki reseller in Belgium, said:

"The launch of the UJ330H created immediate enthusiasm. Print quality, white, varnish and 2.5D effects stood out clearly, while feedback from demos confirmed the machine's performance, flexibility and ease of use."

Another highlight is the UJV200 Series making its international tradeshow debut at FESPA. Developed to make high-quality UV roll-to-roll printing more accessible, the UJV200 Series supports a wide range of sign and graphics applications, combining Mimaki image quality with the creative possibilities of UV printing, including white and clear ink effects.



Mimaki UJ330H-160 hybrid UV printer

Arjen Evertse, Director Sales, Mimaki Europe, comments: "UV printing is becoming an increasingly important growth driver for print businesses, enabling them to work with a broader range of media, expand into new applications and respond faster to customer demands. With the UJ330H-160 and the UJV200 Series, we are showing two different ways Mimaki is supporting this evolution: one through hybrid versatility across roll and rigid production, the other through accessible, high-quality UV roll-to-roll printing."

Advancing the Next Era of DTF Printing

Mimaki is also continuing to evolve its DTF technology in line with the changing needs of the market, as customers look for more stable, scalable and production-ready workflows. At FESPA 2026, this ongoing development got reflected in a new DTF concept model – based on the company's 330 platform – demonstrated on the stand, offering a preview of Mimaki's direction for the next generation of DTF production.

"DTF printing is entering its next phase of maturity," adds Evertse. "Customers are no

SCIENCE IN INDUSTRY

longer looking only for an entry point into the technology; they want predictability, productivity and consistent colour as they scale up. Through our continued development in this area, we are focusing on the priorities that matter most to the print industry— creating DTF systems that are robust, repeatable and fit for the future.”

Connecting Applications, Technology and Expertise

Mimaki's stand also integrated its wider portfolio across sign graphics, textile, industrial applications and personalisation, showing how complementary hardware, software and workflow tools – including RasterLink and PICT – can combine to form complete, efficient production systems.

“For Mimaki, innovation is about enabling customers to do more – more creativity, more flexibility, more applications and more growth,” concludes Drion. “That’s the essence of Powering Possibilities, and it has exactly what we have demonstrated at FESPA 2026.”

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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Mylon Metallics Pvt. Ltd.

Mylon Metallics becomes a big player in manufacturing, design and marketing of Textile machines

A brief profile of Mylon

MYLON METALLICS incorporated in 2015 as an engineering company par excellence for manufacture of Textile machines and other engineering products.



The company is promoted by a team of entrepreneurs with an experience of over 35 years in manufacturing, design and marketing. Over 800 customers have patronized Mylon since inception.

Mylon is built as a modern PEB structure of 1200 Sq. ft with EOT cranes with a host of fabrication and assembly facilities. Manufacturing is augmented with shared facility of CNC metal cutting and forming facilities in the manufacturing hub of Coimbatore, India.

Textile Machines - Yarn Conditioning Plant

Yarn loses the moisture during a spinning process from blow room to winding. Conditioning of yarn with steam is as an established process with advent of conditioning machines for over 3 decades.

Merits of Yarn Conditioning

- Improves yarn elongation and strength
- Yarn unwinding performance at warping, weaving and knitting
- Reduced fly liberation
- Reduced snarling
- Optimum moisture gain
- A wide variety of yarn like cotton, Cotton blends with Rayon/Viscose, Cotton blends with Polyester can be conditioned.



Effect of Conditioning in a Yarn Conditioning Plant - YCP

Conditioning of yarn at atmospheric pressure takes several hours for the moisture to penetration the inner layers of cones/cheese.

Conditioning of yarn under controlled vacuum with saturated steam facilitates in

- ▶ Generation of steam at lower temperatures
- ▶ Economical generation of steam
- ▶ Better penetration of moisture across several layers of yarn homogeneously
- ▶ Shortened conditioning process
- ▶ Comparable results across batches

Mylon YCP Cylindrical



Mylon YCP Cubical



Spares and Services

Spares and Service for Yarn Conditioning Plant

Yarn Conditioning Machines supplied by several reputed suppliers in the past 20+ years are in operation in most of the spinning mills. These machines need spares and services from experts with vast experience in conditioning.

Mylon offers all the essential spares, PLC, Electrical and Mechanical upgrade kits for improving the performance of conditioning machines at an economical cost.

Yarn Conditioning Plants in a production range of 200 to 2000 kgs in 3 distinctive models:

1. MYLON YCP CYLINDRICAL WITH AUTOLOADING PLATFORM
2. MYLON YCP CUBICAL WITH AUTOLOADING PLATFORM
3. MYLON YCP CUBICAL FLOOR MOUNTED SERIES – NARROW, STANDARD AND WIDE FORMATS



Have an installation base of 100 machines in the last 5 years and a customer base of over 500 machines for spares and service support. MYLON machines are working at par or better than the existing machines in the market.



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Frugal Engineering: Mylon is practicing Frugal engineering offering solutions at fraction of the cost of other suppliers.

Some of the service / support provided to ALL MAKES & MODELS of Yarn Conditioning Machines in India and abroad.

1. Preventive Maintenance Programs

Schedule regular check-ups (monthly/quarterly) to ensure the plant runs smoothly.

Offer AMC (Annual Maintenance Contracts) with priority support and discounted spare parts.

Provide a maintenance checklist and train operators on routine care.

2. Responsive After-Sales Support

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Name	Page	Name	Page
Agma Products	*	OM Corporation	*
Associated Autotex Ancillaries Pvt. Ltd.	3		
Aspire Grand Excel Automation	*	Paras Healds & Reeds Pvt. Ltd.	*
Basant Fibertex Pvt. Ltd.	97	Peass Industrial Engineers Pvt. Ltd.	C-I
Bea Electronics	89	Precision Rubber Industries Pvt. Ltd.	83
Bharat Beams Pvt. Ltd.	10	Printer Fa Ni Asia Private Limited	*
Chiven Spinning	12	Rimtex Group	*
Cleentex	C-II		
		Sakthi Textile Engineers	63
Dhara Engineering Works	*	S. B. Dye Springs (India) Pvt. Ltd.	*
DH Textile Engineering	*	SB Corporation	6
		Sheeba Enterprise	*
Elgi Electrics Industries Ltd.	55	Shree Ram Textile	*
		ShreeTex Corporation	*
Gayatri Textile Machines	8	Shreenathji Warpex Pvt. Ltd.	*
GC Can	*	Simta Group of Companies	7
Jaytex Engineers	*	Skaat Machine Works India Pvt. Ltd.	*
		Spintex Exports	*
Indian Dye Springs Co.	C-III	Sri Kumaran Textile Systems	*
India ITME 2026	84	Sunrise Industries	*
ITMA ASIA+CITME 2026	14	Super Machine Works Private Limited	*
		Sumanlal J. Shah Sons (P) Ltd	*
Krsna Engineering Works	*	Sumanlal J. Shah & Co.	*
Kubershwar Machine Products	*		
		Tech Mech Engineers	*
Laxmi Precision Technologies Limited	61	Technocraft Texmach Pvt. Ltd.	*
Lakshmi Ring Travellers (CBE) Ltd.	*	Techno Electronics & Instruments	*
Laxmi Machine Works Ltd	79	Texlab Industries	*
		Tex-Tech Industries Pvt. Ltd.	98
Mag Solvics Private Limited	C-IV	Tirupati Technik	13
Mangal Singh Brothers Pvt. Ltd.	5	Trutzschler India Pvt. Ltd.	*
Manoj Engineers	*		
Mehra Wax	95	Varjilal Hirjibhai Trivedi & Sons	*
Mayur Reeds and Healds Pvt. Ltd.	*	Vetri Engineers	9
M.K. Spindle Manufacturers Pvt. Ltd	*	Vishwaa Engineering	*
Mylon Metalics Pvt. Ltd.	4		
New Make Industries	*		



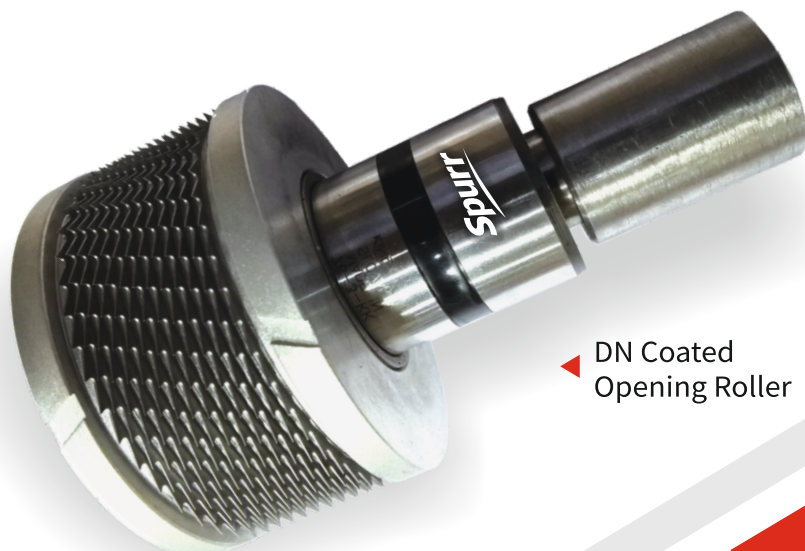
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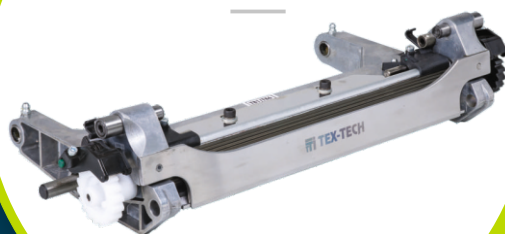
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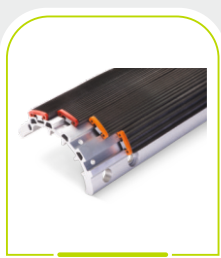
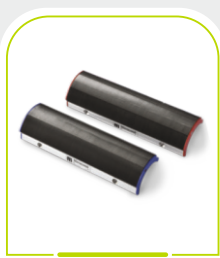
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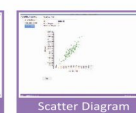
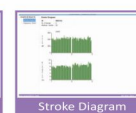
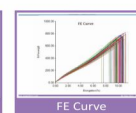
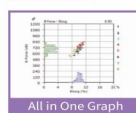
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