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- Reduced chemical usage for cost and environmental benefits
- Flexible loading options for different production needs
- User-friendly interfaces for easy operations and accessibility



Manoj Engineering is a leading Manufacturer of HT/HP Package Dyeing Machines up to 2000 KG certified with ISO 9001:2015. with over 30 years of experience and with a commitment to quality, sustainability and customer satisfaction. We are also engaged in manufacturing and supplying of Hydro Extractor, Hot Air Dryer, Beaker Dyeing, Pneumatic Press Trolley Auto Claves Heating Machines, Winding Machines and SS Springs and Tubes.



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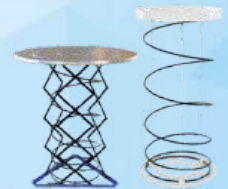
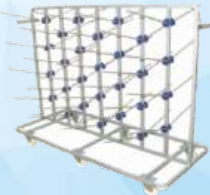
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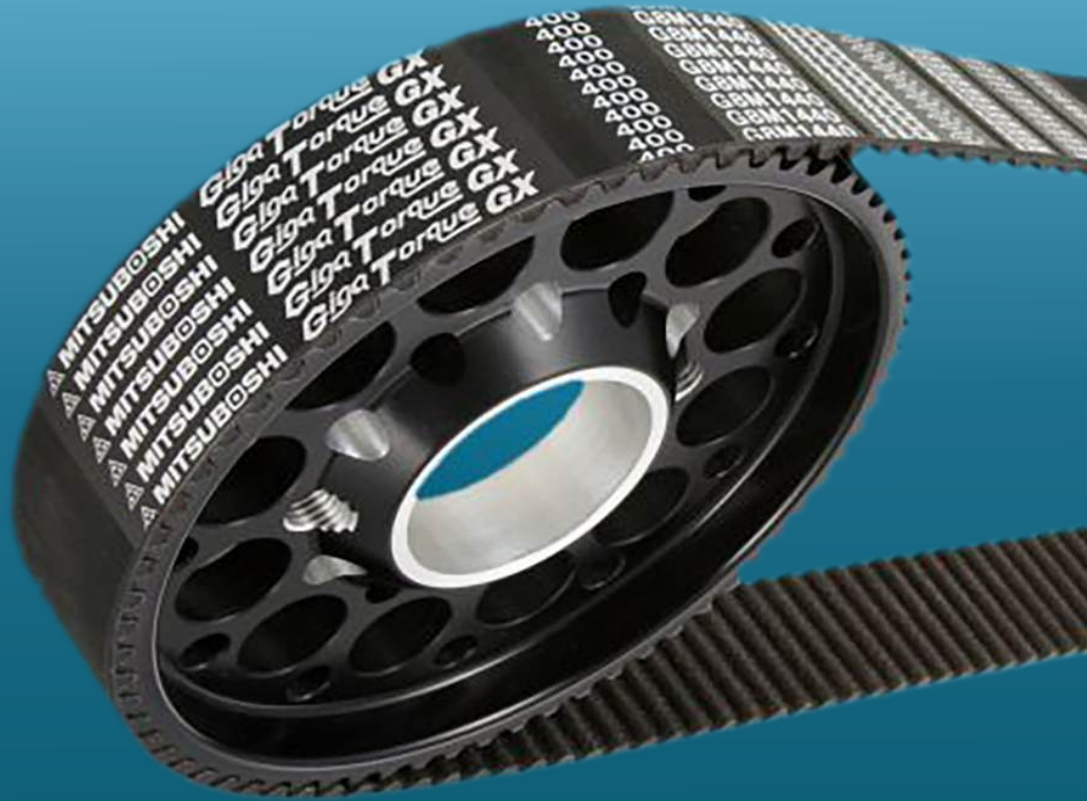
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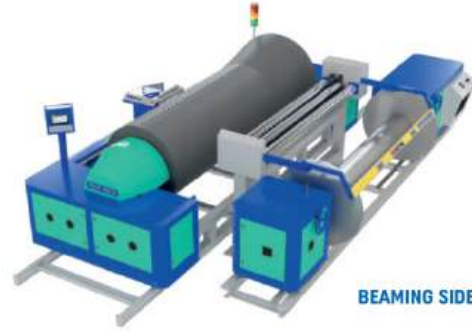
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ACTUAL VIDEO



CATALOGUE



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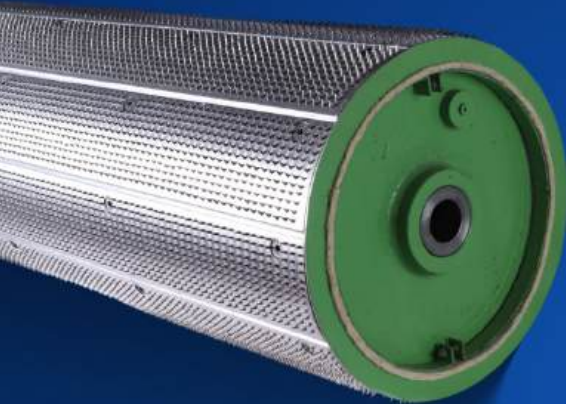
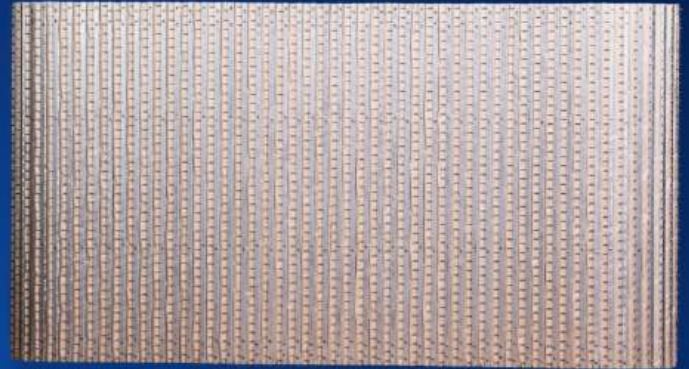


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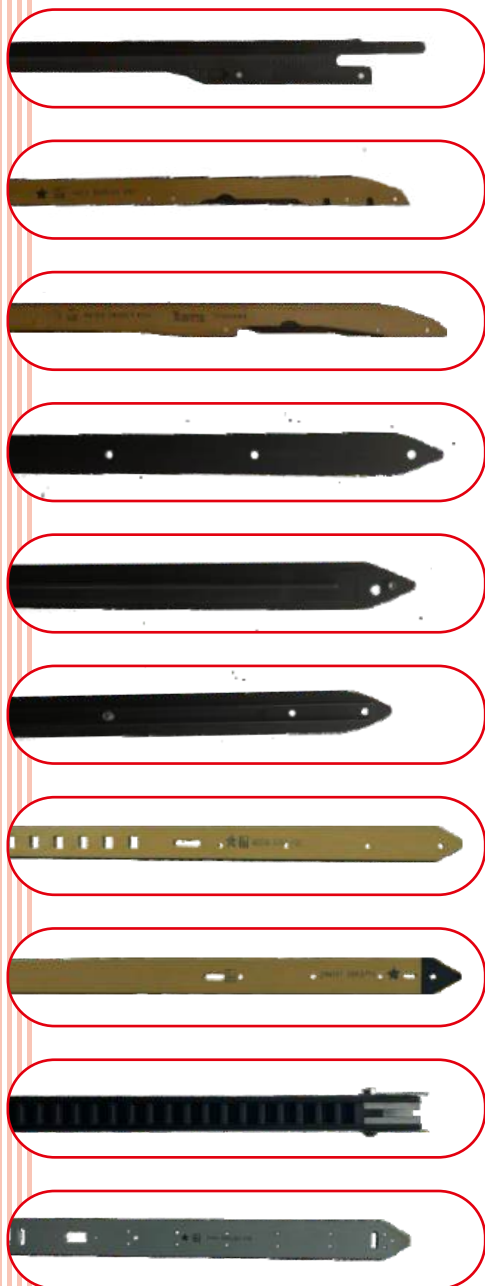
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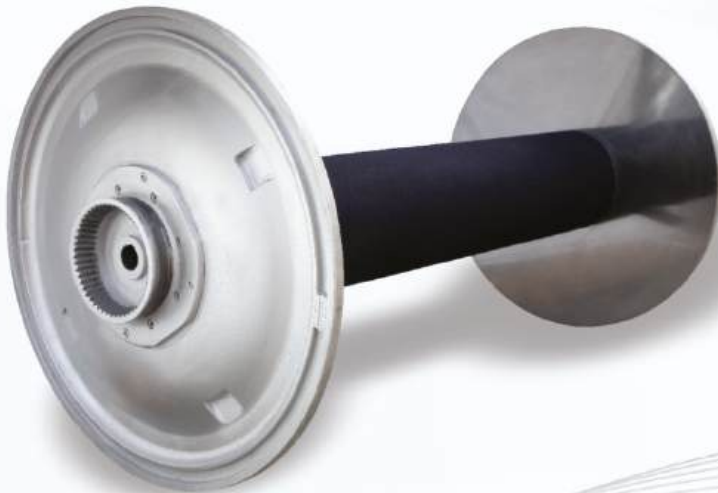
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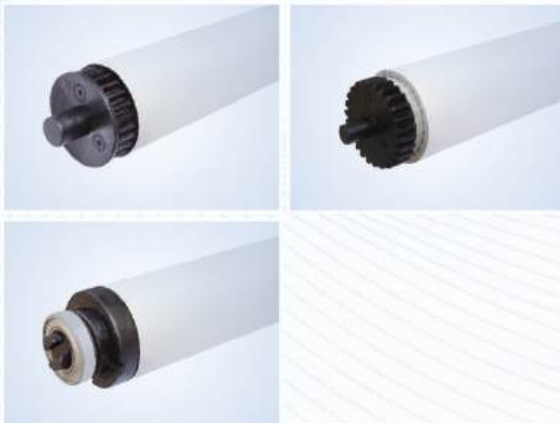
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Grease: Periodic lubrication is recommended for extended life of the bearings. Sakthi End bushes are packed with high speed grease during delivery.

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

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DEVELOPED FOLLOWINGS TO IMPROVE YARN QUALITY BY MINIMUM 20% IN IPI & CLASSIMAT

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AGMA 40.6mm L.R P3-1 Top Arm	Normal Melange, Slub,	Lycra, Eli Twist Compact	100% Cotton, 100% Viscose P/C, P/V & Other Blend Upto 40mm cut length
AGMA 40.6mm SKF/TEX PARTS, PK 2025	Normal Melange, Slub,	Lycra, Eli Twist Compact	100% Cotton, 100% Viscose P/C, P/V & Other Blend Upto 40mm cut length
AGMA 40.6mm SUSSEN HP- A	Normal Melange, Slub,	Lycra, Eli Twist Compact	100% Cotton, 100% Viscose P/C, P/V & Other Blend Upto 40mm cut length
AGMA 40.6mm SUSSEN HP- GX	Normal Melange, Slub,	Lycra, Eli Twist Compact	100% Cotton, 100% Viscose P/C, P/V & Other Blend Upto 40mm cut length
AGMA 50mm SKF/TEX PARTS, PK 2025 Medium cradle	Normal Melange, Slub,	Lycra, Eli Twist Compact	100% Cotton, 100% Viscose P/C, P/V & Other Blend Upto 51mm cut length
AGMA 50mm L.R P3-1 Medium cradle	Normal Melange, Slub,	Lycra, Eli Twist Compact	100% Cotton, 100% Viscose P/C, P/V & Other Blend Upto 51mm cut length

AGMA Saddle setting Gauge for Rieter / LMW P3-1 Top Arm with Sussen Compact

Bottom Roll setting Gauge for all Roving & Ring Frames

Single spacers
P3-1 from 2.5mm to 6.00mm

Twin Spacers - P3-1
From 2.50/2.75mm to 4.00/4.25 P3-1

AGMA CRADLE

Improves YARN QUALITY (From existing yarn quality) (or) Improves YARN REALISATION % (From existing yarn quality) (or) Improves SPG PRODUCTIVITY (From existing yarn quality)

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- ◆ Improves YARN QUALITY minimum 20% in IPI & Classimat fault against 36mm cradle. (For Cotton, Viscose, PV, PC...& compact, slub yarn, siro...etc)
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- ◆ Increases YARN REALISATION with existing Quality and CSP/RKm.
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 - b) By reducing COMBER NOIL % in combed count.
- ◆ Can increase CARDING M/C PRODUCTION with existing yarn quality.
- ◆ Can increase RING FRAME PRODUCTION, 5-10% with existing yarn quality.

NOTE :

- ◆ No quality improvement in 100% Polyester can be expected

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Trends in textile industry to persist

Globally technical textile is growing in robust manner due to rising demand of its products. There is a global interest of companies including the UK, Germany and India showing enormous interest in developing technical textile industry. The governments irrespective of developing and developed world are fostering all round development of technical textile. In European alone, the technical textile industry shares around 30% of the total turnover in textiles, accounting for a growing share of 27% of total textile production.

Energy harvesting is a phenomenon of modern textile industry. Textiles are gaining momentum due to rising demand for efficient portable energy storage solutions, driven by increasing research and interest in Piezo, tribo and photovoltaic technologies. To meet this rising demand, researchers have successfully developed a ground breaking fabric that converts energy from body movements into electrical power. This revolutionary invention will bring big changes in garment industry.

According to the EU, out of the 1900 chemicals used in clothing production 165 have been classified as hazardous to health or the environment, consequently rising demand persists to explore alternatives to conventional dyeing methods. One such innovative method is Air Dye, which utilizes dispersed dyes spread on a recyclable paper base, transferring vibrant colours to textiles through a process driven by heat. This revolutionary technique brilliantly reduces water and energy consumption. With worldwide governments are responding with stricter regulations on waste management, companies are being directed to explore more efficient textile recycling methods.

The usage of medical textiles is witnessing exponential especially in post pandemic times. The extent of growth of medical textiles drives the constant improvement and innovations in textile technology. As the demand for personalized, sustainable, technologically advanced textiles grows, manufacturers, designers and consumers are embracing these trends to shape a more sustainable and innovative future for the textile industry.

The textile industry in 2025 will focus on sustainability, traceable supply chains, circular fashion and advanced technology. Artificial intelligence, automation and wellness fabrics will drive innovation, while trade policies and microfinance will re-shape global supply chains and sourcing.

⇒ Tariffs and trade wars undermine world economic order: Xi

Chinese President Xi Jinping said recently that tariff and trade wars undermine the legitimate rights and interests of all countries, hurt the multilateral trading system and impact the world economic order, the official Xinhua news agency reported. Xi made the comments in Beijing during a meeting with Azerbaijan President Ilham Aliyev, who was on a state visit to China from April 22-24. Xi said that China is willing to work with Azerbaijan to safeguard the international system and carry out “in-depth” law enforcement and security cooperation with the Azerbaijan side. “China is ready to work with the Azerbaijan side to uphold the international system with the United Nations at its core...and safeguard international fairness and justice,” Xinhua said. The two leaders announced “the establishment of a comprehensive strategic partnership between China and Azerbaijan”. It included the signing of 20 cooperation documents as part of China’s Belt and Road Initiative (BRI), in areas including legal, green development, digital economy, intellectual property rights, and aerospace. Bordering Iran, Russia, Georgia and Armenia, Azerbaijan was one of the first countries to support China’s BRI initiative. It was launched in 2013 by Xi as a way to extend China’s geopolitical and economic influence through a global infrastructure development push. China and Azerbaijan signed a mutual visa exemption for citizens holding ordinary passports and will promote exchanges and cooperation between the two countries in various fields, Xinhua said. □

⇒ Economy may slow if key rates not reduced: Trump

President Donald Trump warned the US economy may slow if the Federal Reserve does not move to immediately reduce interest rates, in his latest broadside against Fed Chair Jerome Powell. Trump said in a social media post recently that “there is virtually No Inflation,” pointing to lower energy and food prices. “But there can be a SLOWING of the economy unless Mr. Too Late, a major

loser, lowest interest rates, NOW,” Trump said, referring to Powell. Economists widely expect Trump’s tariffs to boost inflation and slow growth, even if just temporarily. While inflation has cooled notably in recent years, price growth remains elevated. Powell, along with several of his colleagues, has underscored the central bank must ensure new levies don’t lead to a more persistent bout of inflation. Trump has rattled Wall Street by repeatedly criticising Powell and suggesting he had the ability to remove the Fed Chair before the end of his term. US equities sank recently as traders weighed the chances Powell gets axed, with the S&P 500 Index falling 2.2%. Trump has privately asked his advisers about the possibility of removing Powell, while some administration officials have warned him against doing so, according to people familiar with the matter. □

⇒ WTO forecasts global merchandise trade to decline 0.2% amid tariff tensions

The World Trade Organization (WTO) recently revised sharply its global merchandise trade volume growth forecast for 2025 — from a continued expansion it had expected when the year dawned — to a decline by 0.2%, amid fears over the U.S. tariff developments. The volume of world merchandise trade is expected to decline by 0.2% under current conditions, which would be nearly three percentage points lower than what would have been expected under a low tariff baseline scenario, it said. Trade could shrink even further to 1.5% in 2025, if the situation deteriorates, it said in the Global Trade Outlook and Statistics report. This will be in sharp contrast to 2024 when the volume grew by 2.9%. Risks to the merchandise trade forecast persist, WTO said. If the U.S. goes ahead with the reciprocal tariffs, it expects the move would reduce global merchandise trade volume growth by 0.6 percentage points this year. Additionally, the spreading trade policy uncertainty could shave off another 0.8 percentage points. Together, reciprocal tariffs and spreading trade policy uncertainty would lead to a 1.5% decline in world merchandise trade in 2025, WTO said.

WORLD ECONOMY AND TRADE TRENDS

Earlier the United Nations Conference on Trade and Development said it expected 2.3% in 2025. This will mark a shift toward a recessionary path. Subdued demand, trade policy shocks, financial turbulence and systemic uncertainty are bound to intensify pressures, particularly for developing countries. □

||| Britain to extend financing support for exporters by \$26 bn

Britain recently said it would expand financing support for exporters by 20 billion pounds (\$26 billion), including those affected by US tariffs, in an effort to give them stability and certainly in what it described as a new era of global trade. The tariffs, introduced by US President Donald Trump, have deepened uncertainty for UK businesses about their exposure to the new trade regime. The United States has put tariffs of 25 per cent on imports of steel, aluminium and cars, and a baseline tariffs of 10 per cent on most other imports from countries like Britain. The government said the increase raises UK Export Finance's (JKEF) lending capacity to 80 billion pounds, with up to 10 billion pounds set aside to support those most affected by the tariffs in the short term. "The world is changing, which is why it is more important than ever to back our world-leading businesses and support them to navigate the challenges ahead," finance minister Rachel Reeves said. "Today's announcement will do that just, with thousands of businesses right across the country set to benefit." □

||| China's US ambassador urges end to tariff war

China's ambassador to the United States, Xie Feng, has urged Washington to seek common ground with Beijing and pursue peaceful coexistence while warning that China stood ready to retaliate in the escalating trade war. Speaking at a public event in Washington of late, details of which were posted on the Chinese embassy's website, Xie said tariffs would devastate the global economy and drew a parallel between the Great Depression and tariffs imposed by the US in 1930. Referring to concepts in traditional

Chinese medicine like the need to balance the opposing forces of yin and yang, Xie said harmony should guide relations between the world's two largest economies. "A good traditional Chinese medicine recipe usually combines many different ingredients which reinforce one another and creates the best medical effect," he said. "Likewise, the earth is big enough to accommodate both China and the US," he said. "We should pursue peaceful coexistence rather than collide head-on, and help each other succeed rather than get caught in a lose-lose scenario." The trade war has all but frozen the mammoth trade between the world's two largest economies with tariffs over 100% in each direction and a suite of trade, investment and cultural restrictions. China's top shipbuilding association recently attacked a US plan to apply port fees on China-linked ships. While Japan, Taiwan and others are already in talks or preparing to negotiate with Washington over President Donald Trump's "Liberation Day" tariffs, there is currently no high-level dialogue planned with China. □

||| Move actively to Resolve Trade Tensions, IMF Chief Urges Nations

The head of the IMF recently urged countries to move "swiftly" to resolve trade dispute that threaten global economic growth. International Monetary Fund managing director Kristalina Georgieva said the unpredictability arising from President Donald Trump's aggressive campaign of taxes on foreign imports is causing companies to delay investments and consumers to hold off on spending. "Uncertainty is bad for business," she told reporters in a briefing during the spring meetings of the IMF and its sister agency, the World Bank. Georgieva's comments came two days after the IMF downgraded the outlook for world economic growth this year. The 191-country lending organization, which seeks to promote global growth, financial stability and to reduce poverty, also sharply lowered its forecast for the United States. It said the chances that the world's biggest economy would fall into recession have risen from 25%, to about 40%. Georgieva warned the economic fallout from trade conflict

would fall most heavily on poor countries, which don't have the money to offset the damage. Since returning to the White House in January, Trump has aggressively imposed tariffs on American trading partners. But he has repeatedly changed US policy — suddenly suspending or altering the tariffs — and left companies bewildered about what he is trying to accomplish and what his end game might be. Trump's tariffs — a sharp reversal of decades of US policy in favor of free trade — and the resulting uncertainty around them have caused a weeklong rout in financial markets. However, stocks rallied recently after the Trump administration signaled that it is open to reducing the massive tariffs on China. "There is an opportunity for a big deal here," US treasury secretary Scott Bessent said recently. □

IMF slashes global growth over Trump tariffs, policy uncertainty

The International Monetary Fund (IMF) has cut its growth projections across the board, in response to the higher tariffs and policy uncertainty that are the outcome of U.S. President Donald Trump's April 2 near-universal import tariff policy. World output in 2025 is projected to grow at 2.8%, half a percentage point less than the January projection. It is expected to be 3% in 2026, 0.1 percentage points less than the January forecast. The numbers were released in the April 2025 *World Economic Outlook: A Critical Juncture amid Policy Shifts*, to mark the launch of the World Bank IMF Spring Meetings in Washington, DC recently. For India, growth is forecast to be 6.2% in the current fiscal year (i.e., year ending March 31, 2026), supported by private consumption especially in rural areas, but it is at 0.3 percentage points lower than in the January 2025 forecast due to global uncertainty and trade tensions the IMF said. India's economic growth for the next fiscal year is projected to be 6.3%. Consumer price changes for India are projected to be 4.2% and 4.1% in the current and next fiscal years respectively. "We are entering a new era as the global economic system that has operated for the last eighty years is being reset," IMF Chief Economist Pierre-Olivier Gourinchas said at a briefing of late, as he pointed to

U.S. effective tariff rates being at their highest levels in more than 100 years as well as the higher tariff rates on the U.S. "Beyond the abrupt increase in tariffs, the surge in policy uncertainty is a major driver of the economic outlook," Mr. Gourinchas said. The IMF released a range of growth forecasts given the unusual levels of policy uncertainty, with the reference forecasts above based on the tariff and counter-tariff measures announced as of April 4. While the IMF was not predicting a global downturn, the risks it may happen this year have increased "substantially" from 17% to 30%, Mr. Gourinchas said. While global growth remained well above recession levels, all regions would be negatively impacted this year and next, Mr. Gourinchas said, adding that the disinflation process had been impeded, with inflation being revised up by 0.1 percentage points. □

Beijing slashes US commodities purchases

China sharply reduced imports of many US commodities in March, in some cases to zero, as the trade war between the world's two biggest economies intensified. Among the worst affected were purchases of liquefied natural gas and wheat, which both fell to nothing in March, according to Chinese customs data released recently. The US accounted for 17 per cent of China's wheat imports last year, and 5 per cent of its LNG. China imposed retaliatory duties of 10 per cent to 15 per cent on US energy products in February, and at a similar level on agricultural goods in March. China's purchases are likely to dwindle even further after the trade war kicked into higher gear in early April, when both sides launched blanket tariffs of more than 100 per cent on each other's goods. Other farm products saw steep declines in March. American cotton imports plunged 90 per cent from the same month last year to just over 14,000 tonnes. Corn imports fell to less than 800 tonnes, the lowest level since February 2020. Elsewhere, purchases of US liquefied petroleum as, a petrochemical feedstock, slumped 36 per cent to 1.02 million tonnes, while shipments of coal for steelmaking dropped 62 per cent to 208,000 tonnes. ■

INDIAN ECONOMY AND TRADE TRENDS

▣▣▣ Core sector output surges 3.8% in March

Growth in the output of eight key infrastructure industries — commonly known as the core sector — expanded 3.8% in March on the back of improved performance by electricity, steel and cement sectors which neutralised the impact of a contraction in the petroleum sector. A year ago, in March 2024, core sector output expanded by 6.3%. With summer setting in the electricity output increased 6.2% on year in March, up from 3.6% in February. The cement sector that has been the direct beneficiary of pick up in government spending on infrastructure saw its output go up by 11.6% in March from 10.8% in February. The cement sector growth has been in double digits since November last year. Steel sector output was up 7.1% from 6.9%. “Private sector investment announcements increased sharply in Q4 which also supports this growth in demand for steel,” chief economist at Bank of Baroda Madan Sabnavis said. The core sector roughly accounts for two-fifths of industrial production. Since November 2024, core sector growth has been on a declining path. According to Aditi Nayar, chief economist at Icra, in disaggregated terms, the sequential trend was quite mixed, with fertilisers, coal, natural gas and refinery products reporting a moderation in their YoY growth in March 2025 relative to the previous month. “Based on the expansion in the core sector, ICRA expects the IIP growth to print at 3.0-3.5% in March 2025”, she wrote. The output of the refinery sector — which has the highest weight of 28.04% in the Index of Eight Core Industries (ICI) — was up just 0.2% as against 0.8% in February. Natural gas output was down 12.7% in March while crude oil output contracted 1.9%. Fertiliser sector expanded 8.8% and coal 1.6%. For the full 2024-25, the combined index was up 4.4% as against 7.6% in 2023-24. The core sector index has a 40.27% weight in the broader Index of Industrial Production (IIP). Based on the performance of the core sector, for March IIP growth may be expected to range between 4-4.5%, Sabnavis said. The release of ICI, which is compiled by the department for promotion of industry and internal trade (DPIIT), has

been advanced by almost two weeks. Earlier it used to be released on the last working day of every month. This change has been done to accommodate the advance in release date of IIP. Going forward, the IIP data will be released on 28th of every month and will disseminate data of industrial performance of previous month. If 28th is a public holiday, the figures will be released the next day. □

▣▣▣ Beijing-New Delhi trade gap closes to \$100-bn mark

During the April-January period of 2024-25, for which product-wise import data is available, mechanical and electrical machinery and parts accounted for approximately \$53.2 billion of shipments. In the same period, imports of organic and other chemicals stood at \$10.9 billion, while plastics imports were \$5.3 billion. Similar, imports of steel, aluminium, copper and nickel were \$6.33 billion. India’s exports to China comprise machinery (\$1.6 billion), ores (\$1.5 billion), and marine and animal products. “Imports from China are driven by rising demand for electronics, EV batteries, solar cells, and key industrial inputs —sectors where China dominates India’s supply chains. China is India’s top supplier in all eight major industrial product categories. The PLI schemes are fuelling import growth due to their heavy reliance on imported components,” founder of Global Trade Research Initiative (GTRI) Ajay Srivastava said. What’s more alarming is that India’s exports to China fell 14.5%, dipping to \$14.2 billion, lower than they were in FY14, when the rupee was significantly stronger. “This signals more than a trade issue, it’s a competitiveness crisis. These numbers are a wake-up call: India needs to fix its internal manufacturing gaps and invest in deep industrial capabilities. Without that, the deficit will only grow — and so will our dependency,” Srivastava added. In FY25 too, the US remained the biggest trade partner and market for Indian exports with shipments growing at 11.6% to \$86.51 billion while imports grew 7.4% to \$45.3 billion. After the US, the United Arab Emirates (UAE) is the second biggest export destination with shipments growing at 2.8% to \$36.6 billion.

The imports from UAE — a major FTA partner — grew 32% on year to \$63.4 billion. Russia was the second biggest import source, growing at 4.3% to \$63.8 billion. The major item of import from Russia is crude oil, and a decline in their international prices muted the growth in 2024-25. The third biggest market for India in the last financial year was the Netherlands, with exports growing at 1.7% to \$22.76 billion, followed by the UK with a growth of 12% and sales of \$14.5 billion. The Netherlands takes in large volumes of refined petroleum products and smartphones. □

India faces global hindrances despite economic resilience

While the Indian economy and the financial markets have demonstrated remarkable resilience, they are not immune to the vagaries of an uncertain and volatile global environment, according to RBI Governor Sanjay Malhotra. He said GDP growth is much below what India aspires for. “As I mentioned in my statement post the recent monetary policy announcement (on April 9th), our domestic growth-inflation balance has improved significantly. “There has been a decisive improvement in headline inflation which is projected to remain aligned to the target of 4 per cent in FY26. Global uncertainties and weather disturbances, however, pose risks to the inflation outlook,” Malhotra said in his keynote address at the 24th FIMMDAPDAI Annual conference in Bali. The Governor emphasised that even though RBI has projected a lower real GDP growth for FY26 at 6.5 per cent, India is still the fastest growing economy. Malhotra observed that liquidity continues to be concentrated in a few securities, thinning out for longer maturities. Further, secondary market trading is dominated by banks and primary dealers, with many large institutional investors remaining “buy-and-hold” investors. Of the 3,000 plus institutional investors in G-Secs, the top 10 participants contributed a third of the overall turnover during 2024. The Government emphasised that one continuing endeavour of the RBI has been to increase retail participation in the G-Sec market, with the launch of the ‘RBI Retail Direct’ facility

in November 2021 being one initiative in this direction. A mobile app for Retail Direct was recently introduced. RBI also recently permitted retail clients of SEBI-registered non-bank stockbrokers to access NDS-OM. “All of this makes it imperative to ensure that sufficient secondary market liquidity is available to such investors to participate in the market at reasonable prices. “Liquidity and pricing also need to improve for participants like cooperative banks, pension and provident funds with smaller deal sizes. Banks and primary dealers may need to play a much more active role to this end,” he said. □

India to slow but has capability to lead world: IMF

The International Monetary Fund (IMF) pared India’s FY26 growth forecast to 6.2%, a cut of 30 basis points from its January projection, and slashed that for the global economy in the calendar year by 50 basis points to 2.8%, citing trade tensions and enhanced uncertainty due to US tariffs. India will remain the fastest growing among emerging and advanced economies, as per the IMF’s projections. “This (new tariff measures by the US and counter measures by trading partners) on its own is a major negative shock to (global) growth,” it said in the latest edition of the World Economic Outlook, the first since Donald Trump unveiled his tariff plan, currently paused for a 90-day period. India’s growth outlook for 2025 remains “relatively more stable”, buoyed by private consumption, especially in rural areas, according to the World Economic Outlook. The projection, however, is lower than the Reserve Bank’s 6.5% for FY26. The IMF’s growth projection for FY27 has also been lowered to 6.3% from 6.5%. India’s inflation is expected to fall to 4.2% in FY26 and further to 4.1% in FY27. Trump had announced the US reciprocal tariff plan on April 2, imposing a 26% levy on imports from India. He subsequently announced a 90-day pause until July 9, although the new baseline tariff of 10% remained in place. In a scenario marked by global divergence and trade conflict, the IMF predicts that tariffs could reduce world GDP by 0.6% by 2027 and 1% in the long term. ■

Tiruppur finds its fortunes in shifting global weave

The rhythmic sounds of spinning and weaving, often dismissed as 'textile noise', are music to the ears in Tiruppur. What outsiders might find unpleasant — the chemical odours from dyeing, printing, and finishing processes — are, for locals, the scent of an economy that has thrived for millennia. Nearby Kodumanal, for instance, is believed to have clothed ancient Rome 2,500 years ago.

When the Donald Trump administration announced fresh tariffs earlier the month of April, many feared it would be the final blow for an industry still climbing out of the pandemic slump. Instead, Tiruppur's streets have grown livelier over the first two weeks of April. Buying agents are seeing a sharp rise in queries and orders, and most manufacturers are gearing up to expand to meet the new wave of demand.

The reason? Orders are shifting from countries facing steeper tariffs, such as China, Vietnam, and Bangladesh, towards trusted suppliers in Tiruppur. Sources say 10-15 per cent of orders from China alone have already been redirected here, with many US clients seeking deliveries within 90 days. If this trend holds, the city could notch another 20 per cent jump in exports this year.

Tiruppur is India's largest textile cluster, accounting for 90 per cent of the country's cotton knitwear exports and 55 per cent of overall knitwear exports. Nearly every house in the city hosts a micro, small, or medium enterprise unit. This spike in global buyer interest comes just as the hub recorded its highest-ever export revenue of ₹40,000 crore in 2024-25, helped by political turbulence in Bangladesh.

"Buyers who earlier sourced from Bangladesh, China, and Vietnam are now coming to India. They are pushing for discounts, but we are seeing a huge rush over the past two and a half weeks. This is the strongest market and demand we've seen in years," said M Muthurathina, president of the Tiruppur Exporters and Manufacturers Association, whose members are mostly small enterprises with turnover below ₹10 crore.

During the latter part of 2023-24, he had warned about the closure of around 500 units under his association post-pandemic.

"The 90-day deferment of the tariffs worked in our favour — buyers are clearing old orders, and the new diversions are breathing fresh life into the industry. Everyone is in expansion mode, investing in new units and upgrading existing ones. We expect a 15 per cent rise in exports a 15 per cent rise in exports this financial year," said K M

Subramanian, president of the Tiruppur Exporters' Association.

"If Trump's tariffs on competing countries stay at these levels, India will be the more cost-effective option for US buyers. Buying agents are saying they can't keep up with the flow of orders," he added.

Last year, Tiruppur's clients included global names like Primark, Tesco, Next, Marks & Spencer, Walmart, Tommy Hilfiger, Waner Bros. Discovery Global Consumer Products, Gap, Carter's, DUNS Sweden, Target, and Woolworths. Most of these brands have now placed additional orders.

"Existing US buyers are rerouting their order enquiries from China to Tiruppur. Cotton garments have already started shifting here as we remain competitive. The only hurdle is that Chinese prices are around 15 per cent lower, mainly due to cheaper raw material costs like polyester. Buyers are also pushing for deliveries within the 90-day tariff window. For Tiruppur, the outlook is bright; much depends on how much of the diverted orders we can hold on to once the pause ends," said Elangovan Viswanathan, president of the Buying Agents Association and managing director of SNQS Internationals.

Tiruppur's exports touched a record ₹40,000 crore in 2024-25 after falling 11 per cent to ₹30,690 crore the previous year due to the Ukraine conflict and supply chain disruptions. The US accounts for about 35 per cent of India's knitwear exports, followed by the European Union with 29 per cent, of a total of ₹56,000 crore in 2023-24. In the US, 97 per cent of garments sold are imported. According to Sanjay K Jain, chairman of the ICC National Textile Committee, India has a strong opening in categories like made-up articles, jerseys, and blankets, where China still leads. Tiruppur's rebound comes at a time when Bangladesh's textile hub, Chattogram, is seeing widespread closures, with only 350 of 611 registered units still operating and over 54 units shutting down in the past six months. Analysts caution, however, that Tiruppur's exporters should tread carefully despite the upbeat mood.

"These first 90 days will shape the new global value chain. We must move swiftly to make the most of this window," said trade policy analyst S Chandrasekaran. He warned that, given US access to raw cotton and the growing use of automation, American plays could soon turn to robotic or sewbot stitching in the future, leveraging artificial intelligence.

For now, textile, tariff, Trump, and Tiruppur are in lockstep, rekindling the old glory of India's knitwear capital. ■

Cotton likely to lose ground to maize in Central India this kharif season

Cotton stakeholders see the natural fibre crop losing ground in Central India, the largest producing region, to competing crops such as maize in the upcoming kharif season. The area under cotton is seen to be lower by about a tenth in the season ahead as declining yields over the years have hit realisations.

Atul Ganatra, President, Cotton Association of India (CAI) — the apex trade body for the fibre crop — said a decline in the acreage will likely be seen in Maharashtra and Gujarat. Farmers in Gujarat will shift from cotton to groundnut and in Maharashtra from cotton to maize, he said.

“The main reason for shifting is the low yield and high expense. Due to lower yield of an average of 435 kg lint, the cost of production is very high. Farmers cannot reap profits by growing cotton,” Ganatra said.

Subdued Price

Cotton prices have largely remained subdued and ruled below the minimum support price for most part of the ongoing 2024-25 season. The main reason was the muted demand from spinning mills and also a bearish trend in global prices.

The planting for the kharif 2025-26 has begun in the northern parts of the country and also in the extra long staple growing belt of Karnataka.

Soya, Corn take over

Bhagirath Chaudhary, Founder-Director, South Asia Biotechnology Centre in Jodhpur, said the area in the northern region will increase slightly this season. “While the area in Punjab will go down, in Haryana and Rajasthan definitely the area will increase. Overall in Central and southern India, there will be a significant decrease because cotton area would be taken over by corn and other crops.”

Chaudhary said the farmers have lost confidence in cotton production.

“They are not confident that cotton can be a remunerative crop for them. Soyabean prices were also significantly down this year. Most of the shift will be in favour of corn, which will be the biggest gainer, because the prices are good,” he added.

Divya Kumar Gulati, President CLEFMA of India, said the maize area may increase in the upcoming kharif by anywhere between 5 and 10 per cent.

Ramanuj Das Boob, a sourcing agent in Raichur, said the area under cotton is unlikely to see a decline as cotton has better realisation than any other crop. “This year, due to some initiative by CAI and other agencies, better yield expectations are likely,” he said. ■

Sportswear brand ASICS plans to expand retail business by adding 30 stores in CY25

Japanese sportswear brand ASICS is planning to expand its retail footprints by adding 30 stores across India in CY25.

It opened seven outlets between January and March and aims to add three new stores every month.

Over 50 per cent of the upcoming stores are to come up in tier-2 and tier-3 cities.

Currently, ASICS operates 122 stores in India; it added around 15 mono-brand stores last year. “More than 50 per cent of those were opened in tier-2 and tier-3 cities,” said Rajat Khurana, Managing Director, ASICS India and South Asia.

The India arm of the conglomerate has posted a revenue of ₹430 crore for CY24, recording a growth of more than nearly 27 per cent. The company projects to grow by more than 35 per cent over last year, noted Khurana.

Elaborating on India’s importance to the group, Khurana told reporters that India is one of ASICS’ fastest-growing markets globally and holds a prominent position outside of its key markets such as the US, Europe, Japan, and China. “Our investment in India reflects this importance,” he said.

“With ongoing efforts in product innovation, retail expansion, localised offerings, and an emphasis on community engagement through running events and marathon sponsorships, we will sustain this momentum in the coming years.

All ASICS outlets in India are partner-run mono-brand stores. The company achieved 30 per cent local sourcing last year and is targeting 40 per cent in the next three to four years.

Unknotting Kashmir's Carpet troubles

Tourist season has kicked off in Kashmir, and Srinagar's tulip garden is in full bloom. Already in the first three months this year, 5 lakh tourists visited the Valley. But that's not the only thing turning heads. A quieter, more intricate revival is underway. In ateliers and village homes, hand-knotted Kashmiri silk carpets called Kal Baffi — which were brought by Persian and Central Asian artisans to the region under Sultan Zain-ul-Abidin in the 15th century — are making a subtle, yet striking, comeback.

That is, until US President Donald Trump stormed in and slapped a 27% tariff on Indian exports. The tariff has since been paused, but the threat looms. On April 9, a section of carpet and handicraft exporters met Union Minister of Commerce and Industry Piyush Goyal and demanded Gol's intervention to shield them from tariff impact. India is the largest exporter of handmade carpets. In FY25 (until December), US imported carpets worth \$808 million, almost 70% of India's total carpet exports. In that period, India exported \$31 million worth of silk carpets.

US is a key market for Kashmir's premium, hand-knotted silk carpets (earlier made from a blend of wool and silk, unlike market-leading Iranian and Turkish wool carpets). Before the Trump tariff, the industry has been reeling from the Ukraine war and the turmoil in West Asia, which have affected Russian and West Asian markets. Inflation and a dip in luxury spending have also played spoilers.

This comes just as the sector was beginning to recover after years of decline caused by the rise of wooden floors and machine-made carpets, often mis-sold by merchants as authentic, handmade Kashmiri silk, over the past two decades.

Several factors are fuelling the revival:

Surge in Indian buyers: Rising disposable incomes and a growing appetite for rooted luxury are reshaping demand. Where Kashmiri carpets were once made exclusively for export, they now grace Indian drawing rooms, galleries and corporate foyers. A top Kashmiri carpet house recently sold a handwoven piece inspired by the Dal Lake's ecosystem to one of India's leading business families. Featuring kingfishers, lotuses and other aquatic flora, it was more than décor — it was narrative art.

Energised by a growing market, private players are experimenting with bold colours, contemporary motifs and cutting-edge designs. This shift is both a creative awakening and a survival strategy.

High Knottage : While traditional carpet-weaving centres like Rajasthan and Mirzapur-Bhodohi in Uttar Pradesh cap out at 300 knots per square inch (KPSI), artisans in Kashmir begin at 324 KPSI, going up to 576 KPSI. But they rarely produce ultra-high-knottage pieces seen in the Qom silk rugs from Iran. The more the knots in any given area of a carpet, the finer the detailing, much like pixels on a laptop or a mobile phone screen.

The knots are now going up in Kashmir. "Our 'Aladdin's Dream' is a 6x9 ft silk carpet with over 1.8 crore knots at 2,304 KPSI, completed by a single artisan over six and a half years," says Aditya Kitroo, MD of Srinagar-based Jos & Fine, which specialises in hand-made Kashmiri carpets.

For a standard 6x4 ft silk carpet with a typical KPSI of 324, prices can range from ₹95,000 to ₹1.4 lakh, according to industry representatives. A museum or auction grade carpet of the same size, with over 2,400 KPSI, can cost ₹18-20 lakh.

Pictorial Carpet: This has traditionally been the forte of carpet weavers in Iran, but now Kashmiri craft houses have started making carpets that present real-life scenes, such as moments in history and portraiture. Design and weave are so accurate that the carpet looks like a hyper-real painting; it is only when you look at it closely can you make out it is woven textile.

GI Tag: In February, the GI registry granted a new logo for the hand-knotted Kashmir carpet. QR code-based GI tagging captures details about the manufacturers, artisans, KPSI and materials used. "This, along with a tamper-proof label embossed on duly tested/certified carpets, is done to ensure authenticity," says Zubair Ahmed, director, Indian Institute of Carpet Technology, Srinagar.

Creative Zone: Srinagar's designation as both a Unesco Creative City for Crafts and Folk Arts and a World Craft City has brought Kashmiri artistry into the global spotlight.

Experience Centres : Retail is being reimaged. Experience centres like Artisane allow buyers to witness the entire process — from spinning silk to knotting threads — bridging the gap between product and provenance.

Still, tariffs are not the only serious hurdle. Iranian carpet-makers rarely produce on speculation. Their global networks ensure that carpets are commissioned before weaving begins. Kashmiri weavers, by contrast, often produce on hope, an unsustainable model in today's economy.

The sector needs the government's support to create the right ecosystem. "That means everything from raw material banks for silk and wool to coordinated access to international expos, high-end retailers and institutional buyers," says Mehboob Iqbal Shah, founder of Art & Culture Collectibles, a gallery for fine art and collectibles online and in Bengaluru.

This isn't just a trade issue, but also a livelihood crisis. Over 4.2 lakh artisans depend on Kashmir's handicraft sector. If master craftspersons don't find steady employment, they will be forced to leave the trade. And getting them back won't be easy.

Hope can't be a business model. Not when a 60-year-old legacy is on the line. ■

Punjab farmers may reduce cotton acreage

There has been some reduction in the cases of pest attacks following the launch of a pilot project last season to monitor and control pink bollworm (PBW) infestation in the cotton crop in Punjab.

But the reaction from the farmers is mixed, as some of them have complained that it did not help manage PBW. As a result, they incurred losses. However, there is unanimity among them to reduce the area under cotton, partly due to PBW and primarily due to the non-availability of water.

“Though the machine helped us get the alert in time, the PBW is unmanageable even after sprays,” said Beant Singh, a farmer in Sri Muktsar Sahib district.

He said he would reduce the area under cotton this year to 5-6 acres from 15-16 acres earlier, mainly due to PBW, as well as the water issue. He said the yield had dropped considerably, reducing his profit since he is farming on leased land.

On the other hand, Roop Singh of Faridkot district said he plans to cut cotton area to 6-7 acres from 15 last year due to water inavailability but praised the pilot project of the government, which helped manage PBW and also lowered his expenditure on pesticides.

The area under cotton in Punjab has significantly declined over the last few years — from 2.68 lakh hectares (lh) in 2018-19 to 0.97 lh in 2024-25, resulting in production also coming down from 12.22 lakh bales (of 170 kg each) to 2.72 lakh bales. The primary reason for the surge in PBW, a highly destructive pest of cotton, is attributed to the stacking of cotton crop residue near fields.

This increases infestation levels, especially when cotton stalks, unopened bolls and lint residues are stacked near the agricultural fields, allowing the larvae to survive through diapause and emerge in large numbers during the subsequent cropping season.

As per the result assessment of the project, the implementation helped significantly improve pest detection, management efficiency

and cost-effectiveness compared to traditional methods — 38.6 per cent reduction in pesticide use while keeping PBW damage under control and 18.54 per cent increase in yield over conventional methods, highlighting the potential of AI traps to enhance cotton productivity while reducing chemical dependency.

AI-based Tech

The Nagpur-based ICAR-Central Institute for Cotton Research (CICR) last year implemented the project in 18 villages of three key cotton-growing districts of Punjab, funded by the Union Agriculture Ministry in collaboration with the Punjab Agriculture University (PAU) and the State government.

The CICR deployed its own AI-based smart pheromone trap technology to overcome the limitations of conventional traps. The smart trap system comprises a single-board computer, a camera module, a weather sensor and a GSM transmitter, all powered by a solar panel with a rechargeable battery. A control unit triggers the camera module, fixed on the land, at hourly intervals to capture images of trapped insects, according to Prashant Kumar Dash, Assistant Director General of ICAR.

Forewarning System

The system optimises and transmits the combined data (trap catch images and corresponding weather parameters) via a 4G GSM/Wi-Fi module to a remote server. An AI-driven machine learning algorithm (YOLO) then processes the images, counts the trapped insects, and delivers the analysed data to end users via mobile or PC applications, along with relevant weather information.

By correlating real-time trap catches with weather data, the pest dynamics over a wide area can be better understood. This, in turn, facilitates the development of a reliable pest forewarning system and improved pest management practices in cotton cultivation, according to the assessment report of the pilot project. ■

Indian designers are fashioning Jackets and Quilts from cutting waste and yardage rags

It takes a village, and then some, to craft Tilla's Kabira and Rosa jackets. The one-of-a-kind pieces feature thread and metallic embroidery, reversible designs, and multiple colourways. The patchworked base is a highlight, stitched by women from Pindharada village near Gandhinagar, using leftover fabrics and off-cuts from the Ahmedabad-based label's archives.

"As a clothing design studio, we generate a lot of cutting waste," says Aratrik Dev Varman, designer and founder of Tilla. "I have, over the years, very consciously collected every bit of scrap hoping that we could make something of it." A conversation with Jaai Kakani, who runs the NGO Soach, on upskilling rural women, led to a project where Dev Varman and his team created a training module for sewing. The collaboration has culminated in the label's 'Recycle' collection, comprising jackets and dresses. Dev Varman continues to work in Pindharada, and plans to extend to quilts and textile art.

As conscious craft and zero waste goals take over design thinking, fashion labels are becoming more mindful of waste. A decade ago, the number of garments produced in the world exceeded 100 billion, and a 2017 Global Fashion Agenda report estimated an annual figure of 92 million tonnes of textile waste globally. These numbers are still cited, though the volume of both production and waste has likely increased since then. India is among the world's top regions for sourcing apparel and textiles, and according to a 2022 report by Fashion for Good, it accounts for 8.5% of global textile waste — with approximately 7,793 kilo-tonne generated every year.

Designers and upcycled patchwork

The process of making garments yields plenty of leftovers, from fabrics to trimmings. A number of homegrown labels — both big and small — are repurposing this production waste using methods that range from traditional techniques to material experiments. Take for instance, the House of Anita Dongre, which generates 2,000 kg of textile waste every month (as per estimates on its website). The company, known for its mindful designs and sustainability initiatives, works with organisations such as Goonj, an NGO that undertakes disaster relief and humanitarian aid, and NEPRA (National Electric Power Regulatory Authority), and its own

tailoring unit to create *godharis* (quilts), bags and other items.

Designers such as Amit Aggarwal, Urvashi Kaur and Bodice by Ruchika Sachdeva have collaborated with Paiwand Studio to make capsule collections from their production excesses. At the Noida-headquartered studio, upcycling waste is a multi-layered operation. Textile scraps sourced from the industry and craft clusters are handwoven into new fabrics and made into garments.

Recently, Aggarwal showcased his ANTEVORTA collection at the Hyundai India Couture Week, conflating polymers with handlooms. Couturier Varun Bahl has developed a patchwork signature from his archival pieces, incorporated in *lehengas*, *sherwanis*, jackets, and saris. "We use the same embroideries to create upcycled fashion, as well as older threads and buttons," says Bahl. "This year it [upcycled patchwork] has become 30% of our collection and very soon it will be 50%."

Quilts for the win

Production leftovers are inevitable, even in conscious studios. "There is little wastage in the way we design garments," says Chinar Farooqui, founder of the clothing label Injiri. "What is left over is yardage, which usually comes in 11-metre lengths from handloom weavers. After a garment is constructed, the last 10 to 20 inches tend to remain."

An Injiri's Jaipur headquarters, the team upcycles leftovers for up to a year following a collection. "Quilts and mattresses are the best application because they consume a lot of textiles — a quilt requires 9-10 metres of textiles, and mattresses can take up 5-6 metres," she says. "We also add value to the designs, with cutworks and applique." The label's recycled quilts stand out for their eclectic mashups — one quilt is colour-blocked with fabrics in over a dozen shades while applied botanical shapes in dark colours offset an ivory base on another.

Injiri's choice to make quilts and mattresses is rooted in tradition. Communities across India, from Gujarat to Bengal, recycle old clothes and stray patches into household items. And the singularity of such textiles is both a selling point and a challenge. "We have to consider logistics

Indian designers are fashioning Jackets and Quilts from cutting waste and yardage rags

such as space and organisation of fabrics," says Farooqui. "Since no two pieces are alike, it takes energy and time to conceive of products that work." Injiri patches new yardages from these leftovers too, and has recently created a line of jackets.

Working with leftovers

Designers also integrate leftovers into new apparel. For Harshna Kandhari and Mannat Sethi, co-founders of Delhi-based emerging label Graine, the key lies in introducing subtle details and modular elements such as detachable layers. "There's a satisfaction we feel, being able to pick waste from the brand and reimagine them," says Sethi. One of Graine's signatures is the River jacket, which the label introduced two years ago, stitching together organza leftovers to create textured patterns. Most recently, in their Spring/Summer 2024 collection's Sublime Jacket Dress, "we also made pockets with waste fabrics to which we have added *chikankari*", says Sethi, who is now reusing metal parts and waste embellishments.

Jebin Johny, founder of the label Jebisparr, draws attention to another kind of production waste: defective printed fabrics. "I once received a batch of saris that couldn't be used because of printing issues," he recalls. These included the label's signature St. Thomas prints from their 'Nasrani' collection and motifs from the

'Kathakabuki' line, among others. Johny has gradually incorporated elements from those saris as statement motifs using applique techniques on dresses and separates as part of the 'Kintsugi' collection, which are now among Jebisparr's bestsellers. "I am also working on a new collection using all our scraps and leftovers," he says.

Labour intensive

Setting up upcycling infrastructure requires time and resources. Paiwand Studio aims to serve this need, consulting designers, brands, and export houses on waste management and creating upcycled textiles and capsule collections using their waste. Founder and creative director Ashita Singhal notes that developing new textiles can be an expensive process for brands; in her studio, the process involves cleaning and sorting waste based on colour and raw materials, creating strips and bobbins which are then handwoven or embroidered to create new raw materials for garments.

Additional man-hours and intensive production raises manufacturing cost to as much as producing a regular collection; this in turn affects retail pricing. "But if everyone uses and upcycles their scraps, it will drastically change material consumption patterns," she says. "It can save costs, generate employment, and impact the environment positively. Small efforts bring big changes." ■

Cotton panel recommends cut of 11% import duty

The Committee on Cotton Production and Consumption (COCP), headed by the Union Textile Commissioner, has recommended to the Centre to remove the 11 per cent import duty on cotton.

The COCP, which comprises stakeholders in the cotton industry, made the recommendation at its meeting held in Mumbai recently, said K. Venkatachalam, Chief Advisor, Tamil Nadu Spinning Mills Association (TASMA). He was part of the stakeholders meeting.

"If the Centre is unable to remove the 11 per cent duty fully, then the COCP recommended that it could freeze the customs duty for the next months," he told reporters.

Textile mills importing cotton have to be alert on the development scenario, though any change in the import duty structure will have to be notified by the Ministry of Finance, he said.

Positive signal to US

Venkatachalam said the move will send a positive signal to the Trump administration in the US that India has made the import duty on cotton zero. "This will likely reflect positive on Indian textile exports to the US," he said.

The development follows the estimate of Indian cotton production at lower than 300 lakh bales by COCP and industry bodies such as the Cotton Association of India. ■

Stories of Indian trade textiles in Sri Lanka

There's a culture of fraternity at textile exhibitions across India. Perhaps I am sensitive to this as someone with a voracious appetite for learning through historical textiles. Nevertheless, I head to *Chay Reds, Ferrous Black: The Untold Stories of Indian Trade Textiles in Sri Lanka* at MAP (Museum of Art & Photography) in Bengaluru. The exhibition is curated by textile designer and researcher Yash Sanhotra, who fleetingly spent time at The Registry of Sarees. So, here's a disclaimer: I had every season to love the exhibition even before I stepped foot into it.

With its palampores (hand-painted bed covers and panels) and textile fragments dating back to the 18th and 19th centuries, it is divided into four sections. The first sets the context by tracing trade in Sri Lanka. A model of the *Avondster* (Swarup Bhattacharya, wood, 2024), a Dutch East India Company cargo ship used for transporting areca nuts, brings focus to the timeline and maritime trade in particular. And Renuka Reddy's acclaimed technical dissections of the chintz process inform the materiality of the show.

Prints and myths

A children's version runs parallel to the main narrative. It is tempting to play the game of finding motifs and clues, but a reproduction of Portuguese artist André Reinoso's *Printed Clothing in Seventeenth Century Ceylon* (1619) catches the eye. In the painting, the chief of the Paravars, a maritime community, is surrounded by common folk wearing printed textiles — perhaps produced in India — indicating aesthetic and cultural ties between the two countries.

The *somana tuppotiya*, a traditional wrap-around garment, is the main feature of the Costume section. The pleated rectangular cloth, which is draped around the waist much like a *veshti* from Tamil Nadu, captures overlapping influences.

Palampores form the heart of the exhibition. Chay (red) and ferrous (black) are used to

showcase mythical motifs such as the *makara* (vehicle of goddess Ganga) and Garuda, as well as everyday images of cashews, horses, elephants and peacocks. The section on Sri Lankan Workshop highlights the Dutch's focus on producing fine chintz in Jaffna, and how the industry was influenced by textile models from Pulicat in India. The mention of South Indian weavers and dyers migrating to Kandy due to drought, and their involvement in textile production, adds an important layer to the narrative.

The exhibition finishes with Sacred Textiles, inferring that the rich red hues are generated due to calcium rich water present within the geography of the land. Motifs and their meanings are used to explain Buddhism, Hinduism, and indigenous Vedda traditions. But can an amalgamation of different practices and histories really be explained away by colour?

Lacking textile investigation

The magnificent textiles and objects contribute to an eloquent design language, meant to provoke "further scholarship". However, very little actual quantitative textile investigation — in terms of the base material, chemistry of dyes, techniques in application, migration of people, regional expertise, and competition with other regions of production — receives mention.

Sri Lanka and India have a history of glorious peace but also devastating conflicts. We share a culture birthed on custodianship of faith and language, music, art and architecture. I have always believed that textiles that survive centuries carry within them the poignant currency of this loss and change. If exhibitions are meant to be spectacles, then this is a success. But perhaps it is time for audiences to also nudge the cultural fraternity clique beyond formulaic exhibitions around motifs and colour, in the guise of reflecting deeper meaning on our identities. ■

Textile Industry set revive in this financial on stable cotton price, better RMG export

The textile industry is expected to recover this financial year after two years of contraction, driven by stable cotton prices, improving exports of readymade garments (RMG) and steady domestic demand. Revival of RMG exports augurs well for the small and medium enterprises (SMEs), which account for 80 per cent of the textile value chain.

In FY24, the SMEs were hit hard as a 25 per cent drop in cotton prices and weak RMG exports pulled down the industry revenue despite steady domestic demand.

This financial year, while domestic demand for cotton yarn is expected to be a tad slower than last financial year, stable prices will support revenue growth. Export of cotton yarn, meanwhile, will decline as Chinese demand normalises.

The major traction for the industry will come from RMG exports, which is expected to grow 10-12 per cent this financial year, driven by restocking by western retailers and resilient discretionary demand in the US and EU. Domestic demand for RMG on the other hand is expected to hold steady and grow at 3-4 per cent, aided by recovery in the second half.

However, on the pricing front muted growth is expected as domestic garment prices are likely to remain flat or rise marginally by 1 per cent.

On the supply side, domestic cotton prices are witnessing marginal upward pressure owing to a decline in production, stable consumption and increase in minimum support price. International prices, on the other hand are seeing downward pressure because of an increase in global production. Hence, domestic cotton prices are trading at a slight premium to international prices, even though compared to last financial year they are relatively rangebound.

Export-oriented RMG clusters such as Tirupur, Bengaluru and Gurugram are likely to see sharper revenue growth, given revival of RMG exports.

In contrast, clusters that cater to domestic markets, such as Kolkata, Kanchipuram and Ludhiana, are likely to experience slower growth.

Profitability of textile players is also expected to rebound this fiscal driven by stable cotton prices.

In the medium term, RMG sector is poised to grow, supported by free trade agreements with key markets such as Australia and the UAE, establishment of PM Mega Integrated Textile Regions and Apparel Parks and incentive schemes such as Production Linked Incentive and Rebate of State and Central Taxes and Levies, which will enhance domestic manufacturing and exports. ■

Textiles Cos cautious of incentives by other nations to beat tariffs

Textiles export companies said India has the advantage in textile exports compared with other exporting countries post Trump's tariff declaration but feared they may come up with incentives to absorb the rise in tariff to lower their cost of production and retain market share in the US.

India now attracts 27% tariff from the US, while the levy on Vietnam is 46%, Bangladesh 37%, Cambodia 49% and Pakistan 30%.

"We have to see what incentives they (other countries) offer to the textile and apparel sectors. For instance, Bangladesh, whose most of the GDP comes from the textile and apparel sector, may come up with incentives to absorb the cost increase. The next 7-10 days are crucial as all the nations will try to negotiate and renegotiate to keep their export volumes intact. It has to be seen how the consumers react to the rising prices," said B. K. Goenka, chairman of the Welspun Group, which is also a textile exporter to the US.

Textile exporters expect the US's short-term buying to slow down as Washington would use up the pipeline inventory in anticipation of relief as countries renegotiate tariffs with it. However, India will be the preferred destination to source textiles and clothing as other major textile exporting countries are subject to higher rates except the EU.

Given the uncertainty surrounding tariff structures, Indian exporters also need to explore alternative global markets to sustain and enhance trade volumes. Strategic engagement with the USA remains critical, but a parallel focus on expanding into new destinations is also important, textile trade executives said.

Poorna S, director of Shahi Exports, one of the largest apparel manufacturers and exporters said that there will be a consumer backlash as prices of garments will go up in the US. "There will be further negotiations and renegotiations. Everybody will be in a wait-and-watch mode now. But definitely India is a better position compared to other textile and garment producing nations." ■

REVIEW ON DEVELOPMENT AND ANALYSIS OF WOVEN BLENDED FABRICS UTILIZING RECYCLED PLASTIC BOTTLES IN DIVERSE RATIOS

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ABSTRACT

The disposal of plastic bottles is one major problem in the environment today [4]. Recycling plastic waste remains a very efficient approach toward sustainability. Hence, this research explores an option of recycling plastic bottles to useful textile products—a sustainable solution to plastic bottle reduction and eco-friendly product production. This process begins with the collection of waste plastic bottles [6]. Color-wise segregation then goes on to uniformity. The segregated bottles undergo crushing into small chip and those chips undergo change by applying centrifugal forces; thereafter, plastic fibres with cotton are produced of mixtures of varying combinations at 70-30% and 60-40% and at a level of 50%. Finally, it results in production with the desired values like elasticity and strength along with a green material produced. The fabric produced is sturdy and versatile enough to use for various textile applications. Within this research, the end product is used in an application to create sustainable eco-friendly bags, illustrating that this recycling process can work [11]. The approach using recycled plastic fibers with natural cotton reduces demand on virgin material and helps drive a circular economy within the textile industry. Furthermore, this offers a very realistic answer to the plastic waste issue, thereby reducing landfill wastes and reliance on nonrenewable resources. Through this study, it indicated that textile recycling could therefore become a potential contributor in terms of environmental sustainability with the development of innovative environmentally conscious products.

Keywords: geotextile, flood control, riverbank stabilization, concrete bags filled, and split test.

INTRODUCTION

The increasing stack of plastic waste, and particularly the single-use bottles, poses a significant environment problem. [13]. This project comes in to address this kind of problem by exploring its sustainable solution recycling waste plastic bottles into functional textile products. First, plastic bottles are collected and sorted according to color, then converted to small chips. The plastic chips that have been produced are then spun into

fibers by centrifugal spinning, thereby laying a foundation for fabric production. Plastic fibers are mixed with cotton in different percentages such as 70/30, 60/40, and 50/50 to produce strong and flexible fabrics. The final fabric is then made into environment-friendly bags, hence creatively and practically using recycled plastic in the textile industry [5]. By turning waste into value, this project not only reduces plastic pollution but also supports a circular economy, integrating recycled materials into everyday products and advancing sustainability in the textile sector.

PROPERTIES

RECYCLED PET FIBERS PROPERTIES

Table 1. Particulars and value of recycled PET fibers

S.No	Property	Method	Value
1	Tensile strength (MPa)	ATSM C1557	192.4
2	Stiffness (N/m)	ATSM C1557	27693
3	Young's modulus(MPa)	ATSM C1557	3924.2
4	Elongation at break (%)	ATSM C1557	34.2
5	Water absorption (%)	ATSM D570	0.2
6	Specific gravity (g/cm ³)	ATSM D792	1.356

Fabric Properties

Table 2. Properties of cotton and PET blended fabric

S.No	Description	Properties
1	Structure	Plain weave
2	EPI	60-80
3	PPI	60-80
4	Thickness	0.6-1.5 mm
5	Warp count(Ne)	18-30 Ne
6	Weft count(Ne)	18-30 Ne

Methodology

Collect waste plastic bottles and sort them by color

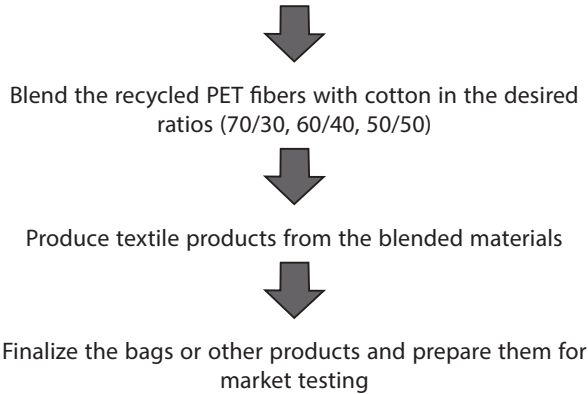


Convert the sorted plastic bottles into chips



Use centrifugal force to convert plastic chips into PET fibers

REVIEW ON DEVELOPMENT AND ANALYSIS OF WOVEN BLENDED FABRICS UTILIZING RECYCLED PLASTIC BOTTLES IN DIVERSE RATIOS



TENSILE STRENGTH TEST

Tensile testing, also known as tension testing [1] is a fundamental materials science and engineering test in which a sample is subjected to a controlled tension until failure. Properties that are directly measured via a tensile test are ultimate tensile strength, breaking strength, maximum elongation and reduction in area [2]. From these measurements the following properties can also be determined: Young's modulus, Poisson's ratio, yield strength, and strain hardening characteristics [3]. Uniaxial tensile testing is the most commonly used for obtaining the mechanical characteristics of isotropic materials [12]. Some materials use biaxial tensile testing. The test process involves placing the test specimen in the testing machine and slowly extending it until it fractures. During this process, the elongation of the gauge section is recorded against the applied force. The data is manipulated so that it is not specific to the geometry of the test sample. The elongation measurement is used to calculate the engineering strain, ϵ .



Figure 1. Tensile Strength Test

TEAR STRENGTH TEST

Tear resistance (or tear strength) is a measure of how well a material can withstand the effects of tearing [1]. It is a useful engineering measurement for a wide variety of materials by many different test methods. For example with rubber, tear resistance measure show the test specimen resists the growth of any cuts when under tension, it is usually measured in kN/m [2]. Tear resistance can be measured by the ASTM D412 method (the same used to measure tensile strength, modulus and elongation). ASTM D624 can be used to measure the resistance to the formation of a tear (tear initiation) and the resistance to the expansion of a tear (tear propagation). Regardless of which of these two is being measured, the sample is held between two holders and a uniform pulling force applied until the aforementioned deformation occurs. Tear resistance is then calculated by dividing the force applied by the thickness of the material [2]. Materials with low tear resistance sometimes have poor resistance to abrasion and when damaged will quickly fail (this includes hard materials, since hardness is not related to tear resistance).

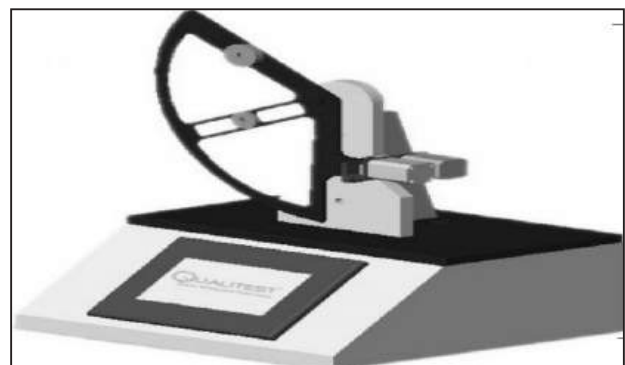


Figure 2. Tear Strength Tester

WATER ABSORPTION TEST

Water absorption is used to determine the amount of water absorbed at specific conditions. Factors affecting water absorption include type of plastic, additives used, temperature and length of exposure. The data shed slight on the performance of the materials in water or humid environments.

REVIEW ON DEVELOPMENT AND ANALYSIS OF WOVEN BLENDED FABRICS UTILIZING RECYCLED PLASTIC BOTTLES IN DIVERSE RATIOS

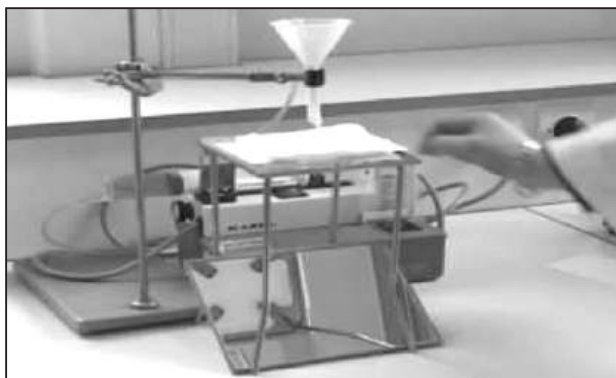


Figure 3. Experimental set up for Split Test Specimen

CONCLUSION AND FUTURE WORK

After the first cycle of production, customer feedback is collected and areas of improvement are noted. The feedback will help in future changes in the process, materials, or design of the product in subsequent production cycles. The project should expand, scale, and continuously innovate to increase its impact on waste reduction and sustainability in the textile industry. These steps transform waste plastic bottles into eco-friendly bags while furthering the cause of a circular economy and reduction in environmental harm caused by plastic waste.

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ECO-FRIENDLY TEXTILE DYEING: HENNA AND FENUGREEK AS SUSTAINABLE MORDANTS FOR SILK AND COTTON

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ABSTRACT

The research examines the use of henna (*Lawsonia inermis* L.) as a natural dye for silk and cotton textiles, utilizing fenugreek as a sustainable mordant to support the dyeing process. Given the rising interest in non-toxic natural dyes, this study responds to the growing need for alternatives to synthetic colorants, which can have harmful effects on human health.

Henna, known for its reddish-brown dye due to the compound lawsone, is a substantive dye well-suited for textiles. In this project, henna was extracted from the leaves and applied to both cotton and silk fabrics using various common mordant. The dyed fabrics were evaluated for colorfastness to light, washing, rubbing, and ironing to determine the effectiveness of the dyeing process.

The findings indicate that henna provides a sustainable and practical option for textile dyeing, encouraging eco-friendly practices within the industry and supporting the use of safe, natural colorants. This research contributes to the expanding knowledge of natural dyes and their possible applications in environmentally conscious textile production.

KEYWORDS : *Lawsonia inermis* L, Mordant & Eco-friendly practices.

1. INTRODUCTION

Textile materials, both natural and synthetic, have historically been colored to enhance their value, appearance, and customer appeal. In ancient times, this was achieved using natural dyes. However, in recent years, synthetic dyes have become widely popular due to their lower cost, a broader spectrum of vibrant shades, and superior colorfastness compared to natural dyes.

Despite their advantages, synthetic dyes, derived from petrochemical sources through hazardous chemical processes, pose significant risks to both the environment and human health. As a result, there has been a growing interest in natural dyes, which are environmentally friendly and sourced from plants, insects, minerals, and fungi. Some natural dyes not only produce unique and elegant colors but also offer additional benefits, such as

antibacterial and ultraviolet protective properties. The rising environmental concerns have further driven the demand for natural dyes.

This study focuses on optimizing the extraction conditions of the coloring component from henna (*Lawsonia inermis* L.) and purifying its primary dye component, lawsone. Henna, a shrub or small tree commonly grown in countries such as India, Pakistan, Iran, Afghanistan, Yemen, Egypt, and Sudan, is widely known for its powdered leaves, traditionally used as a cosmetic for staining hands and hair. Its dyeing properties and UV absorption capabilities are attributed to the presence of lawsone (2-hydroxy-1,4-naphthoquinone) in its leaves.

2. MATERIALS

2.1 HENNA LEAVES

The henna plant (*Lawsonia inermis*) is used for natural dyeing of fabrics due to its unique chemical properties and long-lasting pigmentation. Henna leaves contain a natural pigment called lawsone, which adheres effectively to proteins in fibers such as wool and silk, as well as to certain plant-based fabrics like cotton and linen.

2.2 FENUGREEK

Fenugreek, an annual plant in the Fabaceae family, has leaves made up of three small obovate to oblong leaflets and is cultivated worldwide as a semiarid crop. Its seeds and leaves are popular in Indian subcontinent cuisine, where it is known as *methi*. While fenugreek is also used in traditional medicine, it may pose risks of serious side effects; however, its use in cooking is generally considered safe. Fenugreek is not approved or recommended for clinical use by any government health agency. In Ayurveda, fenugreek is categorized as a "hot food." To maximize its benefits and reduce its heat, the seeds are often soaked in water overnight or consumed as sprouts.

2.3 COTTON

In this project the 100% scoured and bleached cotton fabrics and degum silk were used for dyeing process. The dye from prickly pear plant were used for dyeing the cotton fabrics. Fenugreek seeds are used as a mordant to enhance the color of dyes on cotton fabrics. Then the dyeing process is carrying

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under the normal natural dyeing conditions. Cotton is a fibre that grows from the surface of seeds on the pods or boills. It is composed basically of a woody substance called "CELLULULOSE".

2.4 SILK

Silk is a fine, strong, and soft lustrous fiber produced by silkworms when creating their cocoons, which is then harvested to produce thread and fabric. It is also spun by certain insect larvae and most spiders.



Figure 1 (2.1): Henna plant



Figure 2 (2.2): Fenugreek



Figure 3 (2.3): Cotton



Figure 4 (2.4): Silk

3. METHODS

3.1 HENNA DYE EXTRACTION

A specific quantity of henna powder was extracted in an appropriate amount of water and boiled for one hour. After cooling to room temperature, the extract was filtered to remove insoluble residues, yielding a filtrate that served as a stock dye solution (1% extract) for subsequent dyeing experiments. Henna (*Lawsonia inermis L.*) is used to obtain lawsone, the reddish-brown dye component, which is derived from the leaves of the henna plant.

3.2 FABRIC USED FOR DYING

Cotton and silk fabrics used in this study were sourced from a local textile shop. The cotton fabric was scoured and bleached, while the silk fabric underwent degumming prior to dyeing.

3.3 EXTRACTION OF DYING

3.3.1 SOLVANT BASED EXTRACTION OF DYE FROM HENNA POWDER

Plant tissues are challenging to extract due to the presence of active lipases, which rapidly hydrolyze

phospholipids and glycolipids, increasing the concentration of free fatty acids in the extract. To prevent this, solvent extraction is preferred, as it inhibits these enzymes.

Fresh henna leaves are first washed with distilled water, then dried under sunlight for one day, followed by an additional hour of drying at 80°C in a hot air oven. The dried leaves are ground into a fine powder to ensure effective extraction. Ten grams of henna powder are placed in a thimble and inserted into a Soxhlet apparatus, with 200 mL of solvent added for every 10 grams of sample. The extraction is carried out for three hours, based on the boiling point of the solvent. After extraction, the brown-colored extract is cooled, filtered, and concentrated through evaporation. The result is a crude, dried extract with a brown hue. Dye is then extracted from henna using different solvents, each selected based on its boiling point, and the yield is calculated. Finally, the color strength percentage of the extracted dye is compared to determine the optimal extraction method.

3.3.2 DYE EXTRACTION UNDER ALKALINE CONDITIONS

A 100 g sample of dried leaf powder was added to water containing NaCO and left for 24 hours at a pH of 8.5–9.2 at room temperature. The solution turned reddish-orange, which was then filtered using fine nylon cloth. This reddish-orange color developed due to the alkaline conditions.

3.4 MORDANTS USED

3.4.1 WITHOUT MORDANT

In this method, the sample is dyed without using any mordant.

3.4.2 PRE MORDANTING

This process involves treating the sample with a mordant prior to dyeing.

3.4.3 POST MORDANTING

In this approach, the sample is treated with a mordant after the dyeing process.

3.4.4 SIMULTANEOUS MORDANTING

Here, the mordant and dye are combined in a single bath, and the sample is treated within this mixture.

4. DYING OF SILK AND COTTON

4.1 MATERIAL

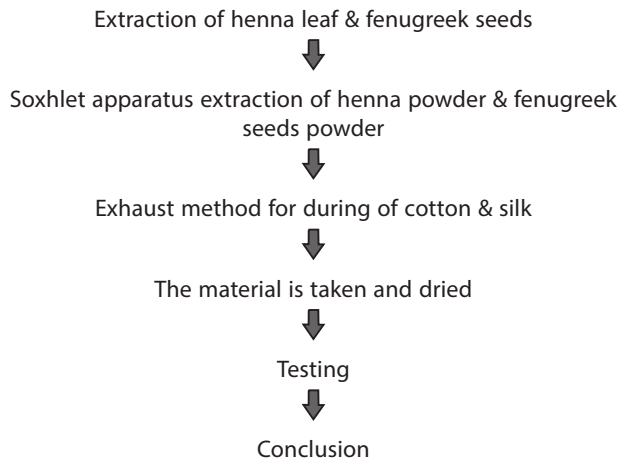
4.1.1 COTTON

Type of fabric	Women fabric
Count of fabric	40s*40s
Design of fabric	Plain
Colour of fabric	Grey white

4.1.2 SILK

Type of fabric	Women fabric
Dressing of fabric	Plain
Colour of fabric	Grey white

4.2 METHODOLOGY



4.2.1 SOLVENT EXTRACTION OF HENNA LEAF, FENUGREEK SEEDS

Fresh henna leaf and fenugreek seeds were selected and washed fresh water. They are dried under room temperature. Dried materials are crushed & powder using mortar and pestle. The powder is filtered to prevent it from during liberation. Finally filtered powder is stored in air tight container.

4.2.2 SOXHLET APPARATUS EXTRACTION PROCESS

Extraction was carried out by dissolved the powder in methanol. The powder & methanol is taken in 1:10 ratio. Methanol is poured from top by using a funnel. Heat is given to the round bottom flask. Regular water supply is given by using the condenser which prevents the machine from overheating. Due to vaporization collection of the final extract occurs in the round bottom flask. Total period of extraction is 8 hours. The final extract is collection & stored in a conical flask.

4.3 DYEING PROCESS

There is many parameter are affecting the dyeing process. They are Simultaneous mordant,

without mordant, pre mordant, post mordant. The parameters are analysed as following:

4.3.1 SIMULTANEOUS MORDANT

Recipe for cotton

- Dye - 2%
- Fenugreek seeds
- Powder (mordant) - 2gpl
- MLR ratio - 1:30
- Time - 45mins
- Temperature - 75C

Recipe for silk

- Dye - 3%
- Fenugreek seeds
- Powder (mordant) - 3gpl
- MLR - 1:30
- Time - 45mins
- Temperature. - 90C

Procedure

The wet cotton samples are placed into dye baths set to varying temperatures according to the requirements for cotton and silk fabrics, with the necessary amount of dye added.

After 10 minutes, the required amount of fenugreek seed powder is added to the dye bath.

The dyeing process is then conducted for 45 minutes at varying temperatures, depending on whether the fabric is silk or cotton.

The dyed samples are removed from the dye baths and rinsed first with hot water, followed by cold water. Finally, the rinsed samples are dried.

4.3.2 EFFECT OF WITHOUT MORDANT

Recipe for cotton:

- Dye - 2%
- MLR ratio - 1:30
- Time. - 45mins
- Temperature - 75C

Recipe for silk

- Dye - 3%
- MLR - 1:30
- Time - 45mins
- Temperature - 90C

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Procedure

The wet cotton samples are placed into dye baths at different temperatures, adjusted according to the requirements for cotton and silk fabrics, with the necessary amount of dye added.



The dyeing process is then performed for 45 minutes at varying temperatures, specific to silk and cotton fabrics.



The dyed samples are removed from the dye baths and rinsed first with hot water, then with cold water. Finally, the rinsed samples are dried.

4.3.3 EFFECT OF PRE MORDANT

Recipe for cotton

Dye	- 2%
Fenugreek seeds	
Powder (mordant)	- 2gpl
MLR ratio	- 1:30
Time	- 45mins
Temperature	- 75C

Recipe for silk

Dye	- 3%
Fenugreek seeds	
Powder (mordant)	- 3gpl
MLR	- 1:30
Time	- 45mins
Temperature	- 90C

Procedure

The wetted out cotton sample are entered into the dye baths containing different temperature based on cotton and silk fabrics with required amount of mordant.



After 10mins transfer the sample mordant both to dye bath.



The dyeing process is then conducted for 45 minutes at different temperatures, depending on whether the fabric is silk or cotton.

4.3.4 EFFECT OF POST MORDANT

Recipe for cotton

Dye	- 2%
Fenugreek seeds	
Powder (mordant)	- 2gpl
MLR ratio	- 1:30
Time	- 45mins
Temperature	- 75C

Recipe for silk

Dye	- 3%
Fenugreek seeds	
Powder (mordant)	- 3gpl
MLR	- 1:30
Time	- 45mins
Temperature	- 90C

Procedure

The wet cotton samples are immersed in dye baths at varying temperatures, tailored for cotton and silk fabrics, with the required amount of dye added.



After 10 minutes, the required amount of fenugreek seed powder is added to the dye bath.



The dyeing process is then conducted for 45 minutes at different temperatures, depending on whether the fabric is silk or cotton.



The dyed samples are removed from the dye baths and rinsed first with hot water, followed by cold water. Finally, the washed samples are dried.

5. TESTING

5.1. COMPUTERIZED COLOUR MATCHING

Achieving a perfect color match at minimal dye costs is a key priority for modern dye houses, which are now computerized. Computerized color matching prediction (CCMP) for textiles typically relies on the Kubelka-Munk equation, Park & Stern's algorithms, and Allen's matrix for recipe formulation. The use of computer-assisted color matching, supported by specialized software (which converts reflectance measurements into K/S values from dyed textile surfaces), has become widespread. The variability in coloration and color measurement is reduced through various selective modes, approximations, and simplifications, as traditional color matching often relied on trial and error, requiring the skill of the dye master with no records of past trials, making night shift matching nearly impossible. The dye strength and quality can also vary between batches, with quality checks recorded in the mill. By implementing a computerized color matching system, these issues are resolved, resulting in dye cost savings, improved and accurate color matches, and faster recipe generation.

Procedure

The sample shade analyses manually. Then get old synthetic mordant dyed sample Pantone number. In the other hand they can take help from the computer

colour matching system. Then fit the sample to the spectrophotometer which analyse the depth of the shade and it shows the result of the colour depth. Then we get values of ΔE in the display.

5.2 WASHING FASTNESS TEST

Washing fastness test is carried out on a launderometer.

5.2.1 SAMPLE PREPARATION FOR WASHING FASTNESS TEST

The sample is sand witched between two adjacent cotton fabrics.

5.2.2 STANDARD SOUP SOLUTION

A 5.1 solution oilate solution is used as a standard soap solution at 5% solution oilate was prepared which is used for washing fastness test.

Procedure

Preconditioning of main bath: Fill the main bath with water upto the over flow level. Set the temperature digital indicator of bath to test temperature. Time is set in the timer to 30 minutes. The jars are filled with required amount of standard soap solution to give the liquid to composite ratio 50:1. Once the temperature is attained the timer is again set 30mins. The jars are opened & the composite specimen with the test liquid is placed in it. Stainless steel balls are placed along with the specimen. The jars fitted with their respective position & the nuts are locked testing with the help of spanner. Then the timer is switch to on. After the time is reached the motor stops automatically. All the jars are removed and the composite specimen is taken out. Then the composite specimen rinse with twice cold water and twice in running tap water. Then the stitches are removed. The composite specimen is opened and dried. The change in color of the treated test specimen, compared to the untreated sample, is assessed using a scale, while the degree of staining on adjacent fabrics is evaluated using a grayscale. The washing fastness test is conducted using a Digiwash. After starting the tester the test continues for one minute & it stops automatically after one minutes. The fabrics sample are taken out from the hot plates and the degree of stirring is observed with the help of grey scale.

5.3 RUBBING FASTNESS TEST

The rubbing fastness test is performed using a crockmeter.

Procedure

The specimen is positioned on the base of the crockmeter, ensuring it lies flat on the abrasive cloth

with its longer dimension aligned in the direction of rubbing. A 5 cm square of white cotton and silk fabric is secured over the peg on the machine using spring clips. Gently the crocking finger is lowered on the test specimen. The handle of the crockmeter is rotated manually in a clock wise direction at a rate of one revolution per second. Then 10 complete rubbing cycle is given to the cloth by rotating the handle 10 times. Then the crocking cloth is removed from the finger and the degree of staining is evaluated grey scale.



Figure 4 (5.2) : WASHING FASTNESS TESTER



Figure 5 (5.3) : RUBBING FASTNESS TESTER

6. RESULT & DISCUSSION

The study shows that betalain dye extracted from henna leaves can be a promising natural colorant for dyeing cotton. As a water-soluble dye, it requires a mordant to fix the color and improve its fastness. The optimal dyeing conditions—70°C temperature, 60 minutes of dyeing time, and 15 gpl mordant concentration—were found to provide good washing and rubbing fastness, as well as favorable ΔE values for color matching.

6.1 RUBBING FASTNESS TEST

Dye used - Henna dye.

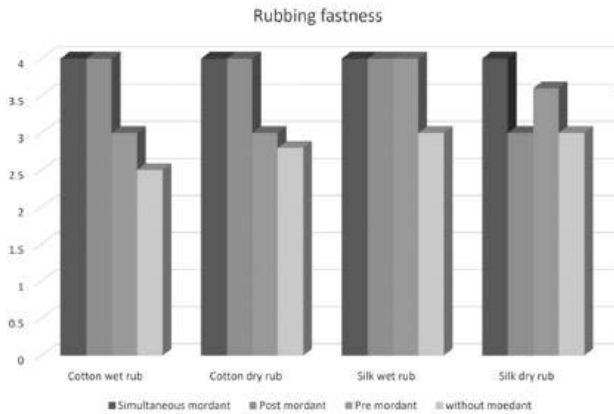
Mordant used - Fenugreek seeds powder.

Methods - Simultaneous mordent, post mordent, Pre mordent, without mordent.

TABLE : 1

HENNA DYE	RUBBING FASTNESS TEST			
	COTTON		SILK	
METHODS	WET RUB	DRY RUB	WET RUB	DRY RUB
SIMULTANEOUS MORDANT	4	4	4	4
POST MORDANT	4	4	4	3
PRE MORDANT	3	3	4	3.6
WITHOUT MORDANT	2.5	2.8	3	3

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6.2 WASHING FASTNESS TEST

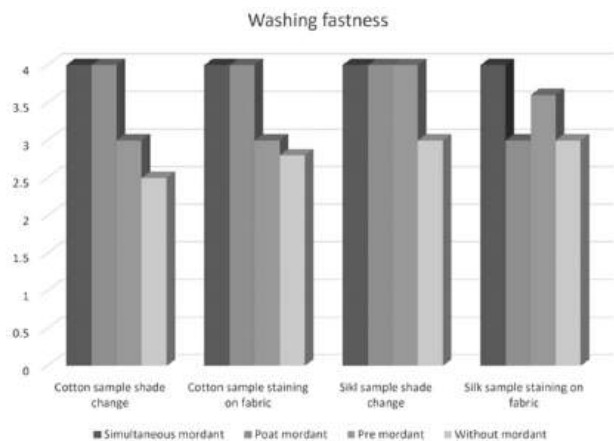
Dye used - Henna dye.

Mordant used - Fenugreek seeds powder.

Methods - Simultaneous mordant, post mordant, Pre mordant without mordant.

TABLE : 2

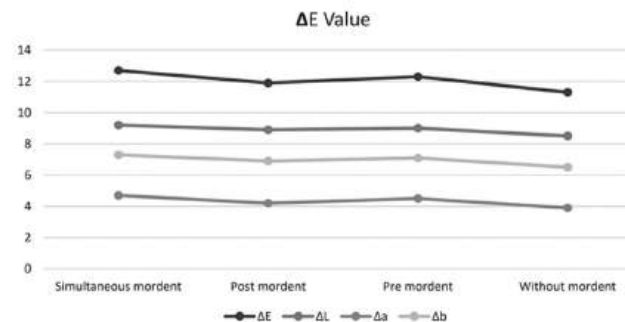
HENNA DYE	WASHING FASTNESS TEST			
	COTTON		SILK	
METHODS	CHANGE IN SHADE	STAINING ON FABRIC	CHANGE IN SHADE	STAINING ON FABRIC
SIMULTANEOUS MORDANT	4	4	4	4
POST MORDANT	4	4	4	3
PRE MORDANT	3	3	4	3.6
WITHOUT MORDANT	2.5	2.8	3	3



6.3 COMPUTER COLOUR MATCHING (ΔE) VALUE: COTTON

TABLE : 3

S. NO	DETERMINATION OF COLOUR DIFFERENT (ΔE) USING SPECTRO-PHOTOMETER	SIMULTANEOUS MORDANT	MORDANT	MORDANT	WITHOUT MORDANT
1	ΔE VALUE	12.7	11.9	12.3	10.5
2	ΔL VALUE	+9.2	+8.9	+9	+8.5
3	ΔA VALUE	-4.7	-4.2	-4.5	-3.9
4	ΔB VALUE	-7.3	-6.9	-7.1	-6.5

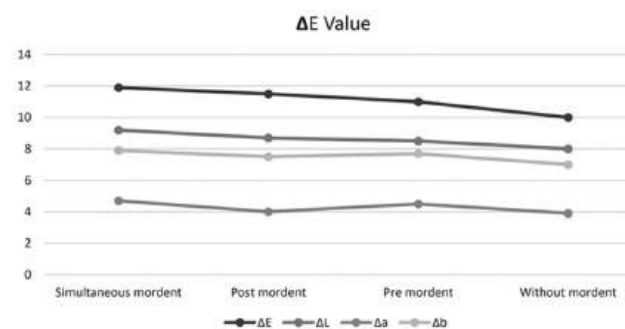


COMPUTER COLOUR MATCHING (ΔE) VALUE FOR COTTON

6.4 COMPUTER COLOUR MATCHING (ΔE) VALUE Silk

Table : 4

S. NO	DETERMINATION OF COLOUR DIFFERENT (ΔE) USING SPECTRO-PHOTOMETER	SIMULTANEOUS MORDANT	MORDANT	MORDANT	WITHOUT MORDANT
1	ΔE VALUE	11.9	11.5	11	10
2	ΔL VALUE	+9.2	+8.7	+8.5	+8
3	ΔA VALUE	-4.7	-4	-4.5	-3.9
4	ΔB VALUE	-7.9	-7.5	-7.7	-7



COMPUTER COLOUR MATCHING (ΔE) VALUE FOR SILK

7. CONCLUSION

The results and discussion reveal that henna powder can be utilized as a natural dye, demonstrating good fastness properties on both cotton and silk fabrics. Therefore, it can serve as an eco-friendly and safe alternative for dyeing cotton and silk.

The primary aim of this study was to extract and purify the lawsone dye from *Lawsonia inermis* L., which is then used to dye cotton and silk fabrics, allowing for a comparison of the properties of the dyed fabrics. The findings show that the color strength of silk-dyed fabrics is higher than that of cotton, despite both being dyed using the same method. Additionally, the dye exhaustion percentage for silk fabric is greater than that for cotton. It was also noted that mordants significantly enhance the color strength of the fabric, with different mordants having varying effects. Copper sulfate provided the best results among the mordants tested. Depending on the dyeing process and the mordant used, a range of colors can be produced using the same percentage of lawsone dye. Moreover, the dye processing cost and the cost of effluent treatment (ETP) are lower compared to synthetic dyes. As such, the extraction and application of natural dyes hold great promise for both commercial and domestic dyeing industries in the future.

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IMPACT OF DIFFERENT WEAVE STRUCTURES ON FABRIC PERFORMANCE AND APPLICATIONS

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ABSTRACT

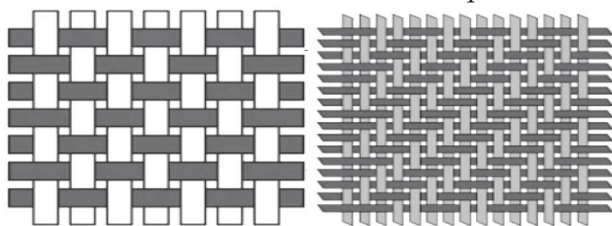
Weave structure is a fundamental aspect of fabric construction that directly affects the performance, appearance, and application of textile materials. Each weave type exhibits unique characteristics suited for specific end-uses. Understanding these differences is essential for selecting appropriate fabrics in sectors such as fashion, home textiles, industrial textiles, Composites and technical textiles. This paper highlights the significance of weave in fabric performance and its role in optimizing fabric functionality across diverse applications.

Keywords: Weave structures, mechanical properties, textile applications, advanced weaving, 3D weaving, technical textiles, composite materials.

1. INTRODUCTION

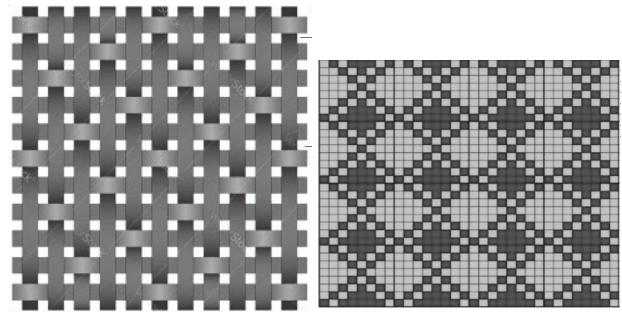
Fabric Weave: Fabric weave refers to the pattern in which warp and weft threads are interlaced to form a fabric. It plays a vital role in determining the texture, strength, flexibility, and appearance of the fabric. Different weave structures, such as plain, twill, and satin, offer unique characteristics that influence the fabric's end-use in various applications. Understanding fabric weave is essential in selecting the right material for specific functional and aesthetic requirements.

Significance of weave on characteristics and application of fabric: The weave structure of a fabric significantly influences its physical and mechanical properties, such as strength, flexibility, texture, breathability, and durability. Different types of weaves affect how a fabric performs in various conditions and applications. The choice of weave determines the fabric's suitability for specific uses, ranging from apparel and home furnishings to industrial and agrotextile products. Understanding the impact of weave helps in designing fabrics tailored to functional and aesthetic requirements.



Plain Weave

Twill Weave



Satin Weave

Honeycomb Weave

Fig. 1: Different Types of Textile Weave Structure

2. RESEARCH CARRIED OUT IN WEAVE STRUCTURES FOR ADVANCED TEXTILE APPLICATIONS

Research on the impact of different weave structures—such as elementary weave, advance design and 3D weaves—demonstrates their critical influence on fabric properties dictating their suitability for diverse applications in composites, protective textiles, and technical fabrics.”

Behera B K & Mishra Rajesh [1] have investigated 3D woven fabrics, their fabrication through modified weaving mechanisms, and their applications in construction, automotive, and marine industries. It highlights how 3D preforms enhance composite manufacturing by reducing labor time and improving mechanical properties. The research examines the impact of weave structures on fabric stiffness, strength, and durability, comparing them to traditional 2D fabrics. It also explores how advanced weaving techniques, including 3D and jacquard weaving, improve structural integrity and multifunctionality, emphasizing the need for continuous innovation to enhance performance, sustainability, and adaptability in textile applications.

Kotharia, V K et. al [2] proposed a mathematical model to predict the cutting behavior of textiles using a reciprocating knife, analyzing cut resistance in 100% cotton woven fabrics with varying weave patterns and pick densities, as well as in high-performance fiber fabrics. The research highlights that plain weave offers the highest cut resistance, while honeycomb weave has the lowest. Factors such as pick density, material composition, and monofilament fabrics significantly

influence resistance. These findings emphasize the importance of weave selection for protective textiles, automotive, and industrial fabrics, ensuring optimized performance and durability.

Eyupoglu Seyda [3] has examined the electrical conductivity of woven fabrics using stainless steel weft and polyester warp in plain and twill weaves of varying densities. It also evaluates the effect of Reduced Graphene Oxide (RGO) treatment on conductivity. The findings highlight that fabric density, weave structure, and material composition significantly impact conductivity, with high-density plain weaves treated with RGO achieving the highest conductivity (442.28 S/m). The research underscores the role of weave structure in optimizing fabric performance for applications in protective textiles, industrial fabrics, and smart textiles, balancing mechanical strength, durability, and electrical properties.

Krishnan A N Sai et. al [4] investigated the integration of Polymethyl methacrylate (PMMA) optical fibers into textiles, woven with cotton and polyester in different weave structures to evaluate light-emitting applications. It examines how weave geometry influences illumination, it was found that sateen weave provides better light emission due to its lower weft bending angle and longer floats. The research also highlights the impact of weave structures on fabric strength, flexibility, and durability, emphasizing their role in optimizing apparel, upholstery, and technical textiles for enhanced functionality and performance.

Talukdar M K [5] studied the impact of high noise levels in textile weaving environments, focusing on their effects on workers' health and productivity, including hearing loss and anxiety. It evaluates noise reduction measures and their effectiveness in protecting workers. Despite manufacturers' efforts, increased machine speed offsets noise control improvements. Implementing advanced computer-aided control systems is crucial for creating a safer and more sustainable textile production environment.

Jamshaid Hafsa et. al [6] examined the thermal properties of hybrid basalt-polypropylene (B/PP), basalt-polyester (B/PET), and basalt-jute (B/J) woven fabrics in different weave structures (plain, matt, and twill). It examines thermal conductivity, thermal resistance, and air permeability, using Alambeta, TCi, and an air permeability tester. The research finds that twill weave offers higher air

permeability and thermal resistance, while plain weave shows the highest thermal conductivity. Hybridizing basalt with polyester, jute, and polypropylene enhances insulation properties, making these fabrics suitable for thermal applications in protective and functional textiles.

Stepanović Jovan et. al [7] researched that deformation characteristics of plain weave cotton fabrics concerning relative thread density. They developed mathematical models to predict fabric breakage based on experimental and theoretical analyses. Findings reveal that higher thread density negatively impacts fabric strength, emphasizing the need for careful density selection in fabric design. The research aids in fabric optimization, contributing to energy and material savings in textile production.

Md. Ruhul Amin and Prof. Dr. Md. Mahbul Haque [8] observed that effect of weave structure on raw material consumption, crimp, and load elongation characteristics in woven fabrics, emphasizing its impact on fabric properties, efficiency, and cost estimation. It highlights that twill weave has higher crimp than satin weave due to increased interlacement, leading to higher yarn consumption and cost. Twill fabrics also exhibit greater strength and extensibility, positioning their properties between plain and satin weaves, making them suitable for both technical and fashion applications.

Wei Jiao et. al [9] reviewed that effect of different 3D layer-to-layer (LTL) interlock weaving structures on the geometry variations and mechanical properties of woven composites, particularly for aircraft engine blades. Using micro-CT imaging, it analyzes unit cell structures and evaluates tensile and compressive behavior. The research highlights how yarn waviness and stuffer yarns influence mechanical performance, strain distribution, crack initiation, and failure modes, demonstrating the structural impact of weaving designs. Stuffer yarns enhance warp direction properties, emphasizing the critical role of weave patterns in optimizing stability, strength, and failure morphology of composite materials.

Feyi Adekunle and Abdel-Fattah M. Seyam [10] have studied the impact of fabric weave design and adhesive type on the adhesion quality and mechanical properties of Kevlar woven Fabric-Reinforced Laminates (FRLs). It analyzes three adhesives (EVA, EVOH, TPU) and three weave

IMPACT OF DIFFERENT WEAVE STRUCTURES ON FABRIC PERFORMANCE AND APPLICATIONS

structures (plain, 2/2 twill, crowfoot) to determine their interactions and effects on adhesion strength, tear resistance, and tensile properties. Crowfoot weave with EVOH provides high adhesion but lower tear resistance, while twill offers the best balance. The findings highlight trade-offs between adhesion and flexibility, suggesting future research on durability, alternative adhesives, and high-performance fibers for optimized laminated fabric performance.

Conclusion:

The choice of weave structure significantly influences fabric performance, affecting mechanical properties, durability, and functionality. Plain, twill, and satin weaves offer distinct advantages in strength, drapability, and surface smoothness, catering to diverse applications in composites, textiles, and technical fabrics. Optimizing weave patterns enhances material performance, enabling tailored solutions for industries such as aerospace, automotive, and protective gear.

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Textile sector opts for solutions for yarn export to Bangladesh

With Bangladesh closing its land ports for yarn exported by India, textile mills in India are examining alternative modes of transport while also urging the government to take up the issue with Bangladesh.

Almost 30% of India's yarn, mainly dyed and special yarn, exported to Bangladesh was being transported via land ports.

At a recent meeting, the yarn exporters explored various alternative options such as shipping in containers, using inland water ways, etc. They also had meetings with buyers in Bangladesh.

"The problem in sending the goods in containers by sea is the lead time," said Siddhartha Rajagopal, executive director of the Cotton Textiles Export Promotion Council.

"Even now, 70% of the Indian yarn to Bangladesh goes by sea. Those who exported through land ports will also use the sea now. There are smaller ships that go from Kolkata.

"The possibility of sending in those ships needs to be explored," he said.

According to K. Selvaraju, secretary general of the Southern India Mills' Association, nearly 45% of India's yarn exports are to Bangladesh. India used to totally export over 100million kg of yarn a month. Now, it is just about 90 million kg.

China and Bangladesh were main markets for Indian yarn. In recent years, China's imports of Indian yarn reduced substantially.

If the 30% exports to Bangladesh are affected, the yarn will be supplied domestically, which could bring down its price. The domestic textile value chain will be impacted, added Mr. Selvaraju.

Currently, textile mills in the northern States are affected because of the closure of the land ports. However, if the situation does not improve, the entire textile spinning sector will be affected, he said. ■

EXPORT PROSPECTS AND MARKETS

Textile exporters have an edge over key competitors

US President Donald Trump's decision to impose universal reciprocal tariffs on imports has given India's textile industry—especially apparel exporters—an edge over competitors like Vietnam, Bangladesh, and China, which face even higher tariffs.

The Trump administration recently announced a flat 27% tariff on Indian goods with some exemptions. In comparison, India's main competitors - Vietnam (46% tariff), Bangladesh (37% tariff) and Sri Lanka (44% tariff) – face significantly higher tariffs under the new structure.

To be sure, Indian apparel exports to the US currently face a tariff of 12-14%, with the new 27% tariff applied on top of that. So far, apparel from Bangladesh and Vietnam has also carried a 12-14% tariff.

"There was no differentiation in tariff rates earlier. With these new tariffs, India now holds a clear advantage over Vietnam and Bangladesh," said Prabhu Dhamodharan, convenor of the Indian Textile Exporters Federation (ITF), a Coimbatore-based association.

China, the largest textile exporter to the US, will see its tariffs rise by 34% over existing duties. When combined with the 20% tariff imposed by the Trump administration earlier this year, China's effective tariff rate will reach 54%.

Dhamodharan added that the bigger question now is who will capture China's market share. With Chinese textile exporters facing a steep 54% tariff on exports to the US, they are at a significant disadvantage.

The US imported \$107.72 billion worth of textiles in 2024, up 3% year-on-year, with apparel accounting for \$80 billion. Of this, China holds the largest share at 21%, followed by Vietnam (19%), Bangladesh (9%), India (6%) and Sri Lanka (3%).

However, industry experts believe India's prospects will also depend on how other countries respond to the latest US tariffs. "Apparel exports drive Bangladesh's economy, so they may negotiate or reduce tariffs to stay competitive," said an industry expert.

"The 27% tariff on Indian footwear and garment exports to the US is a significant challenge, especially for businesses operating on thin margins," said

Apollo Fashion International President Shiraz Askari.

He added that the industry should focus on improving efficiency, and diversifying markets to reduce dependence on any one geography.

ITF's Dhamodharan noted that buyers are likely to take a wait-and-watch approach, which could impact demand in the near term. However, he added that India remains better placed in the medium to long term.

K Venkatachalam, chief advisor of the Tamil Nadu Spinning Mills Association, said India should respond by reducing the import duty on cotton from 11% to 0%, leveraging the latest tariff announcement and ongoing bilateral trade talks with the US. He pointed out the India relies on the US for contamination-free cotton and variants like extra-long staple (34 MM+) cotton.

China has already imposed retaliatory duties on US cotton. Compared to China, India now holds an advantage. While India currently imposes an 11% duty on cotton, it charges only 5.5% on imports from some African nations due to bilateral trade agreements. "We can extend the same benefits the US and, in return, seek preferential treatment for Indian apparel," Dhamodharan said. □

T. N. weaving clusters willing to have cheaper Chinese rayon yarn amid U.S. tariffs

At Palladam, located 40 km from Coimbatore, weavers who produce rayon fabrics are looking forward to yarn that costs ₹8 to ₹10 per kg less than what is available in the market now. Powerloom weavers in Erode district, who also produce rayon fabric, are similarly hopeful.

With U.S. President Donald Trump imposing a 145% tariff on Chinese goods, Chinese viscose is expected to be available at the weaving clusters in T.N. at prices lower than the yarn spun at textile mills.

Govindaraj of the Shuttleless Loom Cloth Manufacturers Association told the reporters that several traders have booked Chinese yarn, that weavers expect at ₹8 per kg lower than Indian yarn. However, the weavers will not receive a credit period for payment and must purchase large quantities. So, the price difference will be around ₹4 per kg less than Indian yarn. He noted this situation will impact vis-cose textile mills.

EXPORT PROSPECTS AND MARKETS

Velusamy, President of the Palladam Job Working Powerloom Unit Owners Association, said imported yarn is likely to arrive after a month, since traders have just begun placing orders. While small weavers may lack the resources to import directly, large weaving units are expected to take advantage of the price differential.

Landed cost of Chinese viscose yarn and dropped from ₹192.17 per kg on April 1 to \$185.06 on April 23, while yarn produced in India costs ₹197 per kg.

Viscose yarn producing textile mills have called for restrictions on Chinese yarn imports and demanded the removal of QCO on viscose fibre or levy of the QCO norms on yarn too. □

India aims to Capitalise on exports of 10 products where it has competitive advantage

India has identified at least 10 sectors such as apparel and clothing accessories, chemicals, plastics and rubber where the US' high tariffs give New Delhi a competitive advantage in the American market over other suppliers, said officials in the know.

The idea is to capitalise on the advantage in these sectors, which also include vehicles, other than railways, mineral fuel and pharmaceuticals, in the coming months to compensate for the loss in other categories impacted by high tariffs.

While India faces a 10% tariff after the US suspended the 26% additional duties for 90 days, the levy remains at 145% on China the biggest exporter to the US.

Providing support to these exports is crucial, as India's competitors such as Vietnam, Bangladesh and Cambodia are offering duty and other concessions to the US.

"Our internal assessment shows that out of 30 top imports into the US. India has competitive advantage on one-third, or roughly 10 products, and a higher scope to get more market share in the US," said an official. According to the analysis by Niti Aayog, China's share of apparel imports into the US is 25%, compared with India's 3.8%, leaving a huge opportunity for India with the high tariff differential. The US imports electronics worth \$900 billion. □

Garment, Toy Cos may reap benefit as US buyers look beyond China

Steep tariffs imposed by the US on Chinese imports are likely to provide opportunities to Indian garment and toy exporters to run their operations at near full capacity, as exporters get a raft of enquiries from American buyers looking to diversify their imports.

Indian textile and toy exporters are planning to ramp up their capacity utilisation to 90-95% from 70% currently to meet expected demand for additional orders, stemming from high Tariffs of up to 245% on Chinese imports. which make it unfeasible for US buyers to import from China.

"April-September is usually a lean period for micro, small and medium enterprises (MSME) apparel exporters as they are primarily summer garment manufacturers, but due to high tariffs on China, there's increasing possibility of some of the business from China shifting to India, keeping the exporters busy during the lean period," said Sundhir Shekhir, chairman, Apparel Export Promotion Council. "We are already getting enquiries from buyers in the US if Indian exporters can fill the supply chain gap with 245% tariffs on Chinese imports."

The challenge for Indian exporters is to match prices offered by Chinese suppliers prior to the tariffs levied by the US government. "Based on the current increase in orders, we have sufficient capacity. However, with more enquiries coming in from existing and new customers, our current capacities may soon be stretched," said KA Shabir. CEO, Funskool India.

"Setting up new factories requires significant investment, and given the uncertainty around tariffs, we will proceed cautiously," added Shabir.

"It is an evolving situation, and Chinese firms have been deeply entrenched in US led global supply chains, which offer opportunities for Indian MSMEs, but at the same time, we have serious capacity issues. It's time for reckoning reforms," said Anil Bhardwaj, secretary general, Federation of India Micro and Small & Medium Enterprises.

India is also better placed than its counterparts—toy exporters such as Vietnam and Indonesia - in expanding capacity. □

Cotton imports gather momentum to double to 33 lakh bales

Cotton imports for the 2024-25 season ending September are seen more than doubling to 33 lakh bales of 170 kg each on further shrinkage in the domestic crop. Last season, cotton imports stood at 15.20 lakh bales.

The Cotton Association of India (CAI), in its latest projections, revised upwards the import estimates to 33 lakh bales, up from the earlier projection of 30 lakh bales. Till March end, about 25 lakh bales are estimated to have arrived at Indian ports.

The upward revision is on expectations of a lower than estimated domestic production even as the consumption is seen flat.

Low Production

The trade body expects a shrinkage in the domestic crop further and has lowered its projections by 4 lakh bales to 291.30 lakh bales of 170 kg each.

Earlier, the trade body had projected an output of 295.30 lakh bales. This revised lower projection is based on inputs received from the State member associations as of March-end, Atul Ganatra, President, CAI, said in a statement.

The decline in projections is on account of lower output in Maharashtra, where the production is seen declining by 5 lakh bales compared to the earlier estimates, while in Telangana the output is seen higher by 1 lakh bales.

CAI has estimated the total cotton supply till the end of March, including imports, at 306.83 lakh bales. This includes the import of 25 lakh bales of 170 kg each and also the opening stocks of 30.19 lakh bales.

For the 2024-25 season, CAI has maintained the consumption at 315 lakh bales, same as estimated previously. Consumption till March end is estimated at 170 lakh bales. Exports till March 31 are estimated at 9 lakh bales.

Stocks at the end of March are estimated at 127.83 lakh bales, including 27 lakh bales held by mills, and the remaining 100.83 lakh bales with CCI, Maharashtra Federation and the trade.

Cotton exports for the 2024-25 season are pegged at 16 lakh bales, lower by 12-36 lakh bales over the previous year's 28.36 lakh bales, the tradebody said.

The closing stock for the 2024-25 season at the end of September 2025 is estimated lower at 23.49 lakh bales (30.19 lakh bales). □

US's 27% reciprocal tariff double blow to Kashmir carpet industry

The Valley's beleaguered carpet industry which has been struggling for orders following the Russia-Ukraine conflict, has now taken a further blow the US slapping a 27 per cent reciprocal tariff on Indian goods.

Javad Ahmad Tenga President of the Kashmir Chamber of Commerce and Industries, said the buyers in the US and other countries had held off shipments following the introduction of tariffs. "Given the current situation, we have decided to seek interest subvention from the government," he said.

Once a major destination for Kashmiri hand-knotted silk carpets, Russia and several European countries have scaled back imports.

According to Valley-based exporters, the carpet trade volume has plummeted by more than 70 per cent.

Demand declines

Sheikh Ashiq, a prominent carpet exporter and former president of the KCCI, told reporter that the carpet industry had taken a hit due to the Russia-Ukraine conflict.

"Russia is our identified market. High-value hand-knotted Kashmiri carpets have a strong presence there but ever since the war began, demand has dropped drastically. Buyers are holding back their orders," he said. Ashiq described 2024 as one of the most difficult years that the industry had faced.

A senior official at the Department of Handicrafts and Handloom said that the ongoing global conflicts in Europe and the Middle east have had a noticeable impact on the industry.

In 2017, Kashmir's handmade carpet industry was at its peak, with exports reaching ₹821.50 crore, making it the region's leading export sector.

Since then, the industry has seen a significant downturn. By financial year 2023-24, carpet exports had declined sharply to ₹317 crores.

As demand for silk carpets continues to fall, the number of exporters engaged in the trade has also significantly decreased. "There used to be 20 to 30 carpet exporters, Now that number has come down to just four or five," said Ashiq. □

EXPORT PROSPECTS AND MARKETS

India, Australian cotton trade bodies sign MoU for mutual collaboration

The Cotton Association of India and the Australian Cotton Shippers Association have signed a Memorandum of Understanding (MoU), envisaging mutual co-operation, exchange of ideas and information relating to cotton production, trade trends, global pricing and market outlook relevant to both countries.

The MoU was signed on April 5 by CAI President Atul S Ganatra and ACSA Chair Cliff White. An Australian trade delegation led by Cliff White and ACSA CEO Jules Willis is currently in India.

Strengthen Trade

The MoU is expected to help strengthen trade between the countries and improve market access and reciprocal support in assisting dialogue supporting the interests of their cotton industries.

Ganatra laid emphasis on the advantages of the Australia-India Economic Cooperation and Trade Agreement, allowing duty-free access to Australian cotton into India with a specific quota of 51,000 tonnes per year. He also exhorted the need for further strengthening of business relations between the cotton industries of both countries. □

T N ranks top textile exporting state in FY 25

Tamil Nadu remained the top textile exporting State in the country in 2024-25 and widened its lead over the second highest exporter – Gujarat.

In 2024-25, out of the total textile exports worth \$36.61 billion. Tamil Nadu's contribution was \$7.99 billion or 26.81 per cent.

In comparison, in 2023-24, the State exported \$7.15 billion (20.78 per cent) out of India's total textile exports of \$34.43 billion, according to data available in the Centre's Niryat portal.

In 2024-25, Maharashtra was at a distant third with exports of \$3.83 billion (12.84 per cent), data show.

Out of the total exports of textile goods, readymade garments contributed to \$15.59 billion, followed by cotton yarn, fabrics, madeup and handloom products with \$12.06 billion, man-made

yarns, fabrics, madeups with \$4.87 billion and the balance split among handicrafts, carpet and jute manufacturing, the data show.

SK Sundararaman, Managing Director, Shiva Taxyarn Limited and Chairman of The Southern India Mills' Association, said that one of the reasons for the increase in textile exports from Tamil Nadu was the major contribution from the Tiruppur cluster. In Tiruppur, there are units for literally every component of a supply chain including printing and embellishments, and it gets the critical mass effect of global vendors keeping full inventory locally, he told reporters.

Apparel Export Promotion Council's Vice Chairman A Sakthival said the Tiruppur knitwear cluster played a pivotal role in the performance, with exports worth \$4.69 billion (₹40,000 crores) last year.

The Generalised Scheme of Preferences status for Bangladesh with the EU is set to end in 2027.

With prices of knitwear products in India, especially in Tiruppur comparable in a few categories and only slightly higher in others, many buyers are considering India as their next sourcing destination.

As a result, buyers have started to strengthen their sourcing base here, Sakthivel said.

Ajay Sahal, Director General & CEO, FIEO, told reporters that Tamil Nadu's impressive performance in textile exports during 2024-25 is a testament to the State's well-established ecosystem, policy support, and industry resilience.

Several factors have contributed to the growth in Tamil Nadu's textile industry.

The State boasts a robust value chain — from spinning and weaving to garmenting and exports — supported by a skilled workforce and strong infrastructure, particularly in textile clusters such as Tiruppur, Coimbatore and Erode, he said.

The rise in exports is also reflective of improved logistics, port infrastructure and the government's responsiveness to exporters' needs he said.

AEPC's Secretary General Mithileshwar Thakur said that Tamil Nadu witnessed a quantum jump in exports owing primarily due to the contribution from its Tiruppur cluster.

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There is growing demand of knitwear garments and ethically sourced products. There is also a shift of foreign buyers' focus to an alternative sourcing hub like Tirupur due to civil and political unrest in Bangladesh, he said. □

Engineering, textile and apparel exports in grew by more than 6% in FY25

Engineering, textile and apparel exports grew by more than 6% in 2024-2025 over the previous year, according to data shared by the Union Commerce Ministry.

Engineering goods shipments grew 6.74% year-on-year in 2024-25 over the previous year, touching \$116.67 billion in 2024-2025 compared with \$109.3 billion in 2023-2024. Textile and apparel exports registered 6.32% growth in FY 25 compared with FY24.

The increase was driven mainly by apparel exports, which grew by 10.03%.

However, the additional duties imposed by the U.S. on iron and steel and auto components are set to hit the engineering exports sector, according to EEPC India. There can be a potential annual drop of \$4-5 billion in engineering shipments to the U.S. Besides, there will be massive competition from China in other markets as it will push its products, chasing new regions to de-risk the U.S., said Pankaj Chadha, chairman of EEPC India.

The impact of the ongoing trade tariff war is already visible. In March 2024, the value of Indian engineering goods exports declined almost 4% year-on-year to \$10.82 billion in the same month last year, he said.

Chairman of the Confederation of Indian Textile Industry Rakesh Mehra said the industry was optimistic about maintaining this growth trajectory, especially in light of evolving global trade dynamics.

"The trade tensions between the U.S. and China present a strategic opportunity for India. With the U.S. actively seeking to diversify its sourcing base beyond China, India is well-positioned to emerge as a reliable and preferred partner," he said. □

Textile cos get an advantage over Asian rivals

The Trump tariff on textile and apparel imports into the US will open up fresh opportunities for India as the levy is the least compared with competing countries. In fact, the higher tariff on

competitors such as China (54 per cent), Vietnam (46 per cent), Bangladesh (37 per cent), Sri Lanka (44 per cent), Thailand (36 per cent), Cambodia (49 per cent) and Pakistan (29 per cent) will open up new avenues for India even with the 27 per cent levy.

Moreover, making Americans work in the low-paid textiles or garment sector will make clothing 20 per cent costlier in the US. However, Trump's tariff policy provides a tariff-based edge to Brazil, Turkey and apparel-exporting EU countries such as Italy, Germany and Spain.

From the period April 2024 to February 2025, out of the total \$33 billion exports of textiles from India, the US accounted for nearly \$10 billion, show government data. India is well-positioned to expand its market share in the US, driven by this tariff edge, said Prabhu Dhamodharan, Convenor of the Coimbatore-based Indian Textpreneurs Federation.

The ongoing trade negotiations may enhance India's position — if India offers zero-duty import of cotton in return for sector-specific benefits in apparel exports. This move could prove to be a game changer, he said.

Sammir Dattani, Director, Sanathan Textiles, said this presented a unique opportunity for the Indian textile industry to potentially capture a larger market share globally.

Siddhartha Rajagopal, Executive Director, Cotton Textile Export Promotion Council of India, said the government should negotiate with the US to maintain the levy at the current level of 10 per cent till a Bilateral Trade Agreement (BTA) is signed.

India needs to expedite the BTA negotiations emphasising the need to preserve and promote the commitment made to protect labour-intensive sectors such as garments, home textiles and leather, he said.

Some key factors to watch are the response of US consumers, including sentiment and consumption behaviour, which will play a crucial role in shaping short-term export trends. There will be some turbulence at the retail level, which can be expected if the tariffs are implemented in full, said Dhamodharan.

There will be short-term pain as all buying will slow down. The market is hoping for reversal of tariffs, feels K Sundararaman, Chairman, The Southern India Mills' Association, and MD of Shiva Texyarn, Coimbatore. If tariffs continue beyond four months, buying will pick up. ■

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Seminar on
“Developments in Weaving Industry and Technical Textiles
beneficial for Bhilwara Textile Industry”
on 27th March 2025
at Mewar Chamber of Commerce and Industry (MCCI) Hall,
Mewar Chamber Bhavan, Bhilwara, Rajasthan

The Seminar was started with a Welcome Speech by Mr. D P Mangal, President, MCCI



Lamp Lighting Ceremony- Mr. D P Mangal, President, MCCI & Mr N D Mhatre, Director General (Tech), ITAMMA

Thereafter Mr. N. D. Mhatre, Director General (Tech), ITAMMA while making his power point presentations mentioned about the opportunities on Looms for the manufacturing of Technical Textiles as below:



Welcoming Mr N D Mhatre, Director General (Tech), ITAMMA by a bouquet by Dr.R.C.Lodha, Sr.Vice President

Looms can weave a wide variety of technical textiles, including fabrics used in applications like construction, automotive, medical, and industrial sectors. Which include materials like glass, aramid, carbon fibers, and specialized weaves like Leno fabric, as well as fabrics for filtration, insulation, and composite reinforcement. Types of technical textiles that can be woven on looms are Construction Textiles (Buildtech), Geotextiles-Used for soil reinforcement, drainage, and erosion control. Reinforcing fabrics for composites, used in

construction materials like concrete and plastics. Automotive Textiles (Mobiltech)-

Durable and comfortable materials for car seats. Interior trim- Fabrics for dashboards, door panels, and other interior components. Medical Textiles (Meditech/Medtex) - Surgical textiles like Woven fabrics for bandages, sutures, and other medical applications, in the creation of medical implants.



Welcome Speech by Mr. D P Mangal, President, MCCI

Industrial Textiles (Indutech) - PP Filter Fabrics, Used in industrial filtration processes, Industrial belts and tapes-Used in conveyor systems and other industrial machinery. Protective clothing- Fabrics for fire protection, chemical protection, and other hazardous environments. Ceramic Insulation Fabrics, used for high-temperature applications. Agro-textiles- Fabrics for crop protection, weed control, and other agricultural applications.



Key Note Speechh by Dr.R.C.Lodha, Sr.Vice President

Leno fabrics, used for specialized applications like insect nets and filter fabrics. Glass, Aramid, and Carbon Fiber fabrics, used in High-strength materials for various applications.

Seminar on "Developments in Weaving Industry and Technical Textiles beneficial for Bhilwara Textile Industry"

A wide range of yarn types can be used in weaving technical textiles, including natural fibers, synthetic fibers, and high-performance fibers.



Mr N D Mhatre, Director General (Tech), ITAMMA delivering his presentations

For weaving technical textiles, looms require wider sheds, which can be achieved by modifying the loom's shedding mechanism to lift more warp threads simultaneously. Looms need to be able to hold the warp threads under higher tension, which can be achieved by improving the warp beam and tensioning mechanisms. Specialized Loom Components, like reed may need to be modified to accommodate wider or more complex fabric. And Heddle frames, need to be modified to handle the specific requirements of technical textiles.

Braid Mat Weaving Machine, weave braid mats while Paper Mill Clothing Weaving Machine, used for weaving paper mill clothing.

12 MTR Wide Tubular Fabrics Weaving Machine, used for weaving wide tubular fabrics. Needle Lines, used for producing needle-felted fabrics, while Thermo-Bonding Lines are used for bonding fabrics with heat.

Coating and Finishing Lines, used for applying coatings and finishes to fabrics. Mr Mhatre also explained about the utilization of Plasma Technology for repairing the grooved Rapier Heads, IIOT applications in Weaving machines, sturdy and high resolution encoders, sound proof guards, use of LED in exact location of warp break on loom, automatic loom inspection system, labelling system on grey fabric for piece tracking through all textile process, vibration sensors, ceramic cutters, electronically controlled cooling system on loom and motor, technology displayed at ITMA of producing garment on the loom, powder brakes, integrated lubrication system, 3D model of a wide loom using mixed-reality technology, encapsulated weaving machine for car upholstery fabric, needle-less tucking –in device, technology to minimize RHS selvedge waste, on-loom automatic fabric inspection system, etc.



Mr R K Jain, Hon Secretary, MCCI delivering Vote of Thanks

Some modifications on the loom itself in cloth take-up system for lamination/coating process and attachments of having heavy duty Creel for high specialized yarns, based on cutting-edge technologies were informed. There was a very good response from the stakeholder participants whereby many have come forward and shown interest to go for manufacturing of Technical Textiles very shortly, during the interactive session.

The Seminar concluded with the vote of thanks by Mr R K Jain, Hon' Secretary General, MCCI who informed that very shortly a One day Conference will be organized focussed on specific product/s of Technical Textiles which can be manufactured in the Bhilwara Textile Industry with the present set-up or some minor modifications/attachments.

Seminar on "Developments in Weaving Industry and Technical Textiles beneficial for Bhilwara Textile Industry"



8 Audience

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India may reap twin benefits as US, China wage trade war

In fact, the Indian government has facilitated some initial meetings for such deal-making.

Enquiries have come across sectors, including home textiles and engineering goods. Some of these buyers have individually been sourcing up to \$1 billion from China annually, director-general of Federation of Indian Export Organisations (FIEO) Ajay Sahai said.

Mithileshwar Thakur, secretary-general at Apparel Export Promotion Council (AEPCC) said: "While April-September is the lean period of exports to US, new orders are flowing in. Some of the new areas where India was not a player like pet clothing is now coming to India."

While meetings have been organised virtually by the Indian consulates in the US, some of the potential buyers have expressed the intention to also visit India. The initial enquiries from the US centred around the capacity of Indian suppliers to take on additional orders.

As China has been subjected to up to 145% import duties in the US against baseline additional tariff of 10% for others, the Chinese suppliers are also looking to supply their orders to the US through alternative routes. At the ongoing export-import Canton Fair in China - which is considered as the world's largest - some Indian visitors got queries from the Chinese to fulfill orders of their buyers in the US on commission basis.

"The order will be placed with the Indian suppliers by US companies which used to source from China. The Chinese units who will arrange Indian suppliers will get 3-5% commission. They seem to be doing this to retain their customers for the time when things become normal again," Sahai said.

However, other sources have discounted the trend. "Some informal queries have come but India does not have the capacity to fulfill all those. Apart

from that the doors for routing Chinese goods after minor processing in India are closed," Pankaj Chadha, chairman of Engineering Export Promotion Council (EEPC), said.

According to Thakur, some capacity issues can be addressed for incoming orders through enabling double shifts in apparel sector. He, however, noted that not every state allows women to work in night shifts.

"China will have a problem using India to route exports after small value addition here. India already scrutinises Chinese imports a lot. Even Asean shipments to the US will face additional scrutiny," Sahai said.

In some areas, where capacities exist or new capacities can be added quickly may see some shift facilitated by China. "Temporary opportunities would not lead to new capacities," Sahai added.

The exporters are using the 90-day window of suspension of reciprocal tariffs by President Donald Trump to quickly fulfil the orders from the US at hand because of the uncertainty beyond the deadline. Due to the earlier shipping of orders, an uptick is expected in exports to the US in May and June. As China has effectively been barred from its \$500-billion US market with abnormally high tariffs, the competition for Indian exporters will intensify in other markets like the European Union.

"The orders (for other markets) already in hand are being fulfilled. When exporters go for negotiation for new orders, the Chinese are expected to give India a tough time," said a trade source. In the meantime, the imports by Indian industry are benefiting from low prices from China, particularly in electronics components and parts. In raw materials, India has imposed safeguard duties on many key inputs from China. ■

CORPORATE NEWS

COLORJET hits manufacturing milestone with ZED Gold Certification under MSME's sustainability program

In a significant milestone on its journey toward manufacturing excellence, ColorJet, India's leading manufacturer of digital inkjet printers, announces its achievement of the prestigious ZED Gold (Zero Defect, Zero Effect) Certification under the Ministry of MSME's Sustainable Certification Scheme. This achievement strengthens ColorJet's position as a quality-first, sustainability-driven innovator in the global printing industry.

Setting a New Benchmark in Responsible Manufacturing

The ZED GOLD Certification is awarded to organizations that go beyond conventional standards—those that showcase unwavering commitment to quality, energy efficiency, waste reduction, and eco-friendly practices. ColorJet's success under this scheme reflects its steadfast alignment with the ZED GOLD philosophy: delivering defect-free products while ensuring zero negative impact on the environment.

"We are honored to receive the ZED GOLD Certification, which aligns perfectly with our long-standing mission of sustainable innovation and responsible manufacturing," said Mr. Madhu Sudan Dadu, Chairman, ColorJet Group. "This achievement is a testament to our continuous efforts in process excellence, employee engagement, and green production practices."



Supporting India's Vision of Self-Reliance and Sustainability

Beyond quality and process excellence, this recognition marks a bold stride in ColorJet's support for national missions like "Make in India" and "Atmanirbhar Bharat". It highlights how Indian manufacturers can lead on a global stage—not just through innovation, but through responsibility and resilience.

Leading the Change in Digital Printing

ColorJet has always believed that technology and sustainability go hand in hand. With its deep investment in research, innovation, and environmental stewardship, the company continues to lead the transformation of the digital printing landscape. Its solutions are designed not only for high performance and precision, but also for long-term environmental impact—ensuring that customers don't have to choose between productivity and planet-consciousness.

As the company steps forward into a new era of growth, its ZED GOLD Certification serves as both a milestone and a motivator—fueling ColorJet's mission to build a smarter, cleaner, and more sustainable future for the printing industry.

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Textile veteran Tricia Carey joins Avalo as a chief commercial officer to lead Commercialization

AI-powered crop-evolution company Avalo announces that textile-innovation veteran Tricia Carey joins as Chief Commercial Officer to bring their new Low-Input Cotton to market. Tricia Carey brings decades of experience in industry changing technologies. Over her career, she has helped move the textile/fashion world towards sustainability by introducing cutting-edge fibers like Tencel™, and fostered the march toward circularity during her time with Renewcell.



Tricia Carey

This exciting hire comes as Avalo is scaling up its cotton program in the Texas Panhandle. For the last 2 years, Avalo has been working closely with cotton growers (plagued by high fertilizer costs and decreasing water availability) to develop a regionally adapted cotton variety that requires no irrigation, and uses up to 30% less fertilizer. Not

only does low-input cotton represent a giant leap forward in textile sustainability – it also provides a much-needed lifeline for the Texas Cotton industry, and all the agricultural communities that depend on it. Starting this harvest season, Tricia will help Avalo scale this exciting new “high-quality, low-carbon footprint” cotton in order to help global brands address critical challenges like rising costs and scope 3 emissions.

From Avalo CEO Brendan Collins: “We’re so excited to have Tricia on board who has brought industry changing innovation to the textile world. That said, her experience as a strategist, supply-chain connector and coalition builder will help us bring similar innovation to other industries that desperately need it.” Avalo is already making plans to bring similar innovation to the sugarcane industry, where they recently announced a partnership with CocaCola Europacific Partners (CCEP). They have also made progress in rubber, rice and other essential commodities facing critical market challenges or environmental externalities. **Regarding her new role, Tricia Carey said** “I’m thrilled to join Avalo and be part of an exceptional team that’s pioneering innovative solutions at the intersection of agriculture, technology, and textiles. Avalo’s machine-learning platform accelerates plant evolution in a ground-breaking new way, enabling us to bring more sustainable and efficient products to market faster and cheaper than ever before – which allows us to better keep pace with the agricultural challenges we’re facing. And they do this while helping the folks who sit at the center of it all, the farmers. This is an exciting moment for Avalo, and I’m energized by the opportunity to contribute to the company’s vision of making our global agriculture more sustainable, resilient and equitable.”

About Avalo

Avalo Inc. is an AI-power crop evolution company based in Durham, North Carolina. Their novel Rapid Evolution Platform™ uses interpretable machine learning to commercialize impactful crop traits faster and more affordably than conventional breeding or GMO. Their mission is to create a more sustainable, efficient and equitable food system by creating resilient and productive crops that require less inputs. Avalo Inc. was founded in 2019.

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Durak Tekstil a leading manufacturer of industrial sewing and embroidery thread has become a well-known brand in the global market

Durak Tekstil successfully implements an export-oriented growth strategy, while constantly strengthening its position in target markets. The company with the solutions that meet the criteria of efficiency, functionality and sustainability in sewing and embroidery threads, integrates its brand with the innovation concept through R&D.



Durak Tekstil, one of the leading manufacturers of industrial sewing and embroidery threads, will present innovative solutions for the global furniture and interior decoration industry at Interzum 2025 in Hall 10.1, Booth No A024 B025 to be held in Cologne, Germany, on May 20-23. The company focuses on strengthening presence in target markets, reaching potential new markets and establishing new partnerships thanks to its technological, sustainable and efficient threads that appeal to several different application areas.

Durak Tekstil Vice Chairman of the Board of Directors Yiğit Durak stated that they continue their export-oriented growth strategy with strong steps, underlying that the Interzum is a significant event

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in its field worldwide. “We follow every edition of the Interzum closely as it is a strong platform where the global industry comes together and we have been participating for many years without a break,” Durak said and continued: “Our primary goal in the context of the event is to increase our brand awareness and sales in the European market and to introduce our products strongly with their functional features. Strengthening our relations with the industry and our stakeholders constitutes our fundamental point in the process of becoming a global brand.”



Reminding that they provide services to various industries from automotive to apparel, embroidery to outdoor products, Durak underlined that the mattress industry has a 25% share in their total business volume. “In terms of sewing and embroidery, the mattress, quilting and furniture industries are markets where we are very strong. Our sustainable, technical and efficient threads have become the products preferred by manufacturers in this segment and we continue to reach new markets. In the upcoming period, the mattress industry will continue to be one of our priority segments. We are closely following the transformations in this segment and focusing on offering the innovative threads they need. The Interzum will be very useful for us in terms of seeing new trends in the industry in this context,” he relayed.



Export markets respond faster to R&D products

Yiğit Durak stated that they have R&D and Design Departments established at the company headquarters and that continuous innovative studies are carried out there. Stating that they work in cooperation with the public, universities and industry stakeholders in the product development process, he explained that these products are offered to the global market by obtaining the necessary internationally valid certificates and documents. Durak stated: “The threads we have developed in recent years are designed not only for the Turkish textile industry but also based on the global market. These innovative products are being accepted and demanded more quickly, especially in markets that demand advanced and technical solutions. For example, the US and European mattress industries have great potential in terms of our flame-resistant aramid threads. Similarly, we are receiving very positive feedback from advanced mattress industries for our Bug Safe thread, which prevents the survival and reproduction of insects that feed on skin residues and blood in mattresses. We will bring a new breath to the industry with our new products that appeal to the mattress industry at the Interzum 2025”.



Durak stated that they want to establish potential collaborations with manufacturers from all over the world, especially Europe, at Interzum 2025, and noted that they will achieve strategic investments and growth in target markets with the power of being included in the Turquality Program. “By opening our Austria and Poland offices for the European market, we strengthened our hand in terms of logistics in continental Europe,” he indicated and also mentioned that a similar process is being experienced for the USA. Drawing attention to the fact that the USA is actually a continent-sized

market, he noted that the logistics company they established here will achieve successful results by serving a very wide area in the long term. He also emphasized that they have set targets for the African and Asian markets and that they are excited to meet with visitors from these regions at the Interzum.

Durak Tekstil will become a well-known brand in technology, art and sustainability

Drawing attention to the acceleration of market studies for brand awareness, Yiğit Durak shared that participating in Interzum 2025 with innovative products will contribute to this point. He said that Durak Tekstil has become a preferred partner for manufacturers with sustainable and efficiency-oriented threads as well as technical and functional solutions, emphasizing that they have a strong portfolio for design and art works. Stating that they aim to meet not only manufacturers but also universities, laboratories and sectoral media at the event, he announced that they are working to participate in the Interzum innovation awards in the upcoming period.



Yiğit Durak defined the difference between them and other manufacturers in the industry as 'going beyond expectations' and added that they stand out in terms of innovation, service, speed of problem solving, sustainability, the company's corporate culture and brand perception.

About Us

Founded in 1972 in Bursa, Durak Tekstil develops and produces sewing and embroidery threads and sells them domestically and internationally. Durak Tekstil has a production facility in Türkiye, as well as several sales offices and representatives abroad. The company, which cooperates with global brands from Türkiye and abroad, responds to the textile industry's growing demand for quality and qualified products.

The products developed and produced by Durak Tekstil are preferred in garment / apparel,

embroidery, denim, outdoor, automotive, bedding / quilting and similar application areas.

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TENCEL™ and Intimasia 2025: to be in first place in Sustainable Intimate Wear

TENCEL™, Lenzing's leading textile brand for lyocell and modal fibers, reaffirmed its commitment to sustainable innovation by partnering with Intimasia for its 7th edition. This collaboration sets new standards in textile technology, culminating in an impressive TENCEL™ showcase at Intimasia 2025, held in Mumbai.

During the three-day event Lenzing showcased cutting-edge TENCEL™ fiber innovations, including TENCEL™ Lyocell A100, TENCEL™ Lyocell LF, TENCEL™ Lyocell x Micro, TENCEL™ Lyocell Fill, and LENZING™ ECOVERO™ Black. These breakthroughs exemplify Lenzing's ongoing commitment to developing high-performance, eco-friendly materials that align with the industry's sustainability goals. Throughout the three-day event, attendees had the opportunity to explore these innovations firsthand through interactive product demonstrations, in-depth discussions, and exclusive collection unveilings, further strengthening industry collaboration and fostering future advancements.



During the the highly anticipated Lingerie Fashion Week, TENCEL™ collaborated with

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leading Direct-to-Consumer (D2C) and mainstream brands, including BUMMER, SELSIA, XYXX, and SHYAWAY, to unveil a range of intimate and loungewear collections that reflect modern design and sustainability principles. This dynamic presentation highlighted TENCEL™'s influence in shaping contemporary fashion.

Avinash Mane, Senior Commercial Director of Textile Business at Lenzing (TENCEL™) AMEA & NEA, stated: "Intimasia 2025 has been an outstanding platform for connecting with key stakeholders and showcasing our latest innovations in sustainable fibers. Through our renewed TENCEL™ brand philosophy—Nature. Future. Us.—we are reaffirming our dedication to driving responsible and sustainable textile solutions. This event has played a pivotal role in fostering collaborations that will shape the future of the industry and accelerate meaningful transformation."



Running alongside Intimasia, **Source NXT** continued to serve as a pivotal sourcing hub, uniting global manufacturers, suppliers, and buyers to explore innovative materials and technologies crucial for hosiery and knitwear production. TENCEL™'s involvement in this segment further showcased its versatility and its essential role in advancing sustainable fashion practices.

Overall, TENCEL™ Intimasia 2025 was an outstanding success, buzzing with energy, meaningful discussions, and fruitful collaborations. As the event concluded, it left attendees optimistic about an even more promising and innovative 2025, reinforcing TENCEL™'s position as a leader in sustainable textile solutions.

About the Lenzing Group

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

The Lenzing Group's business model extends far beyond that of a conventional fiber producer. Together with its customers and partners, Lenzing develops innovative products along the value chain, creating added value for consumers. The Lenzing Group strives for efficient utilization and processing of all raw materials used and offers solutions for the transformation of the textile industry from the current linear economic system to a circular economy. In order to reduce the rate of global warming and thereby also support the goals of the Paris Agreement and the EU Commission's Green Deal, Lenzing has a clear, science-based climate action plan that aims for a significant reduction in greenhouse gas emissions by 2030, and a net-zero target (Scopes 1, 2 and 3) by 2050.

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Aarti Vijay Gupta and Liva Reviva Redefine Sustainable Luxury at global stage of London Fashion Week FW'25 with 'Kalighat Stories'

Renowned designer Aarti Vijay Gupta once again pushed the boundaries of sustainable fashion at London Fashion Week, unveiling her latest collection, Kalighat Stories, for FW25 in collaboration with Liva's sustainable fabrics. Rooted in heritage

yet executed with a contemporary touch, the collection honored India's artistic traditions through Gupta's signature modern lens while embracing innovation in both design and fabric.

Crafted using Liva Reviva Fabrics, made from



up to 30% recycled textile waste blended with FSC-certified wood pulp, the collection championed eco-conscious luxury without compromising fluidity or versatility. The lightweight and breathable nature of the fabric allowed Gupta to bring intricate artistry to life, inspired by India's rich cultural heritage, all

while reinforcing the importance of responsible fashion.

For Kalighat Stories, Gupta worked closely with artisans from Kolkata's famed Kalighat and Patua traditions, transforming age-old storytelling into modern fashion. Midnapore's renowned scroll paintings were integrated alongside "Patua Feet" a vivid artistic depiction of music, mythology, and daily life. The designs merged tradition with contemporary aesthetics, showcasing a seamless blend of history and modernity.



The runway featured 35 distinct looks across menswear and womenswear, presenting a diverse range of styles. Flowing drapes and structured layering highlighted the versatility of Liva's sustainable fabrics while earthy hues and muted pastels formed the base for intricate prints with handcrafted details

adding depth to each piece.

Commenting on the collaboration, Mr. Sree Charan, VP Marketing, Global Head – Brands, Birla Cellulose, Aditya Birla Group, said, "We are proud to partner with Aarti Vijay Gupta in this journey towards sustainable fashion. Her ability to integrate traditional art forms with contemporary design using Liva's sustainable fabrics perfectly embodies our commitment to responsible fashion. Together, we continue to redefine luxury in a way that is both innovative and environmentally conscious."

Designer Aarti Vijay Gupta shared her vision for the collection, "Traditional artists are often overshadowed in the global fashion conversation, so bringing their work to an international stage is incredibly special to me. With this collection, I wanted to reframe the narrative around Indian art by using the old to create something new.



Working with Liva Reviva, a sustainable fabric, provided the perfect canvas to honour these traditions while embracing innovation. This is the future of fashion where heritage and sustainability come together with purpose."

Liva's collaboration with Aarti Vijay Gupta aligns with its mission to drive change in the fashion industry through conscious design and advanced fabrics that minimize waste. By supporting designers in merging artistry with sustainability, Liva continues to shape a future where fashion is both meaningful and responsible.

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CORPORATE NEWS

A Matter of Pride for bluesign: SAITEX MILL in Vietnam Joins bluesign® System Partner as Part of bluesign's Global Denim Initiative

bluesign® is proud to announce that SAITEX Mill has officially become a bluesign® System Partner. This collaboration marks a significant milestone in bluesign's Denim Initiative, furthering the mission to drive sustainability across the global denim industry. SAITEX Laundry, the first denim laundry globally to join bluesign as a system partner over a decade ago, has now been joined by SAITEX Mill, creating a powerful, end-to-end sustainable production solution under one roof.

Founded by Sanjeev Bahl, SAITEX is a global leader in sustainable garment manufacturing, known for its innovative approach to reducing the environmental impact of textile production. Founded in 2001, the company operates with a commitment to sustainability, circularity, and social responsibility. With facilities in Vietnam and Los Angeles, SAITEX employs cutting-edge technologies such as closed-loop water systems, energy-efficient processes, and clean chemistry to minimize waste and carbon emissions. The garment operation is bluesign®, Fair Trade, LEED, and B Corp certified, underscoring its dedication to ethical manufacturing practices.



SAITEX partners with leading global brands to create high-quality denim and apparel while continuously pushing the boundaries of responsible production, setting a benchmark for the future of fashion.

Now that both the SAITEX Mill and Laundry are bluesign® system partners, brands can label their denim garments as bluesign® DENIM, produced and processed entirely within SAITEX's facilities. The bluesign® DENIM label requires

that the denim fabric is bluesign® APPROVED from a system partner mill, and that the garment is processed in a system partner laundry, ensuring compliance with bluesign's strict environmental criteria. This allows brands to source bluesign® APPROVED denim fabrics directly from SAITEX Mill, have the garments processed at SAITEX Laundry, and achieve an end-to-end clean denim production process for consumers. With bluesign® APPROVED chemicals used in both fabric manufacturing and garment processing, brands can easily meet sustainability standards with SAITEX as their one-stop solution for clean denim.

This partnership aligns with bluesign's dedication to reducing the textile industry's environmental footprint by ensuring that textiles are made with responsible resource usage and worker safety. By becoming a bluesign® System Partner, SAITEX enhances its commitment to eco-friendly production practices, offering transparency and traceability throughout the garment life cycle.

Opened in 2022, SAITEX's cutting-edge fabric Mill near Ho Chi Minh City, Vietnam, represents the next generation of sustainable manufacturing. The mill integrates spinning, weaving, dyeing, and finishing processes under one roof, with a core focus on environmental responsibility. Leveraging advanced technologies, it reduces energy consumption, minimizes the use of harmful chemicals, and is on track to build a closed-loop water system to minimize freshwater intake, which will be completed by mid-2025. This state-of-the-art facility reflects SAITEX's commitment to setting new standards for responsible production and circularity in the global textile industry.

- » The mill features solar panels with a 3-4 MW capacity, reducing carbon emissions by 2,000+ tons annually.
- » The facility is designed with LEED Gold Certified specifications, ensuring minimal environmental impact through energy efficiency. LEED Gold certification is expected in November 2024.
- » The mill utilizes Smart-Indigo™ technology for hydrosulfite-free dyeing, resulting in 90% less CO2 emissions, 70% less energy use, and 30% less water consumption.
- » SAITEX aims to achieve carbon neutrality by 2030 through continued innovations in energy and resource efficiency.

- » The fully vertically integrated mill, from spinning to garment manufacturing, ensures lower environmental impact on both the fabric and laundry sides of the production process.



Sanjeev Bahl, CEO of SAITEX, said, "Becoming a bluesign® System Partner is another step in reinforcing our mission of sustainability, transparency, and responsibility. With bluesign®, we're not just setting a new standard for responsible denim manufacturing; we're driving a broader movement toward clean chemistry. This is about creating a system that's safe for people and the planet—putting the human side of manufacturing at the center of everything we do. It's our responsibility to ensure that our processes are as clean as they are efficient."



Daniel Rüfenacht, CEO of bluesign®, added, "We were proud to welcome SAITEX Laundry into bluesign over 10 years ago as the first system partner denim laundry in the world, and it is thrilling for us to now have SAITEX Mill join the system partnership as well. Brands can now source bluesign® APPROVED denim fabrics from SAITEX Mill for their collections, and with both the mill and laundry as system partners, they can label their denim garments as bluesign® DENIM, ensuring a

fully compliant and sustainable production process under one roof. Together, we are making significant strides toward reducing the global environmental impact of denim production."

This partnership strengthens **bluesign's Denim Initiative**, which brings together key players in the denim industry to create safer, more sustainable denim products. With SAITEX's vertical integration and advanced technology, the global denim market is one step closer to achieving environmental responsibility and social equity.

About bluesign®

The bluesign® SYSTEM is the solution for sustainable textile production. It eliminates harmful substances right from the start of the manufacturing process, and it sets and controls standards for environmentally friendly and safe production. This not only ensures that the final textile product meets very stringent consumer safety requirements worldwide but also gives the customer confidence in purchasing sustainable and safe-to-wear products. Since its founding in 2000, bluesign® has partnered with over 850 manufacturers, brands, and chemical suppliers worldwide, driving transformative change in the textile industry. Various well-known brands in the outdoor, sportswear and fashion industry partner with bluesign® and trust its extensive knowledge and services to collectively reduce the textile industry's impact on people and the planet. www.bluesign.com

- » Bluesign is part of the \$7-billion+ SGS family of companies.
- » SGS is the world's leading testing, inspection, and certification company.

About SAITEX

SAITEX is a leading sustainable denim manufacturer known for its innovative and eco-conscious approach. With operations in Vietnam and the USA, SAITEX focuses on reducing its environmental footprint while promoting social responsibility and transparency. Through its circular manufacturing processes and groundbreaking technology, SAITEX is revolutionizing the denim industry. www.sai-tex.com

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CORPORATE NEWS

Circulose and Tangshan Sanyou Chemical Fiber emphasize on strategic partnership to drive large-scale Textile Circularity

Ciculose, a global leader in recycled pulp production, has reached a strategic partnership agreement with Tangshan Sanyou Chemical Fiber, a frontrunner in the cellulose fiber industry. This collaboration marks a significant milestone in the commercialization and scaling of CIRCULOSE®, while also propelling Tangshan Sanyou's brand toward greater international recognition. The two companies will work together to ensure that ReVisco™ fibers, produced using CIRCULOSE® pulp, meet market demands in terms of quality, supply capacity, and pricing, thereby advancing both brands in the high-quality and innovative development of circular and renewable materials.

"We are thrilled to establish a strong strategic partnership with Tangshan Sanyou," said Jonatan Janmark, CEO of Circulose. "This represents a crucial step forward in our global expansion strategy, fostering closer, more in-depth collaborations with innovative fiber producers and like-minded brands. As the first major strategic partnership since the restructuring of Circulose, this collaboration will serve as a cornerstone of our success. Together with Tangshan Sanyou and our brand partners, we will ensure the scalable development of ReVisco™ fibers by using CIRCULOSE® pulp in a predictable and controlled manner. We highly value our long-term partnership with Tangshan Sanyou and look forward to achieving mutual success as we shape the future of the industry."

Recognized as a top-tier company in Canopy's authoritative Hot Button Report, Tangshan Sanyou has gained international acclaim for its achievements in sustainability and circular development. Since the founding of Re:newcell, Sanyou has been a key strategic partner of Circulose and remains the world's largest user of CIRCULOSE® pulp for fiber production. Now, with a renewed commitment to sustainability, Tangshan Sanyou is taking a leadership role in advancing large-scale textile circularity, setting a benchmark for both China and the global textile industry.

"Tangshan Sanyou has always believed in the strong potential of recycling cotton textile waste, which is essential for fostering a green and sustainable industry," said Zhang Dongbin, Executive Vice President of Tangshan Sanyou Chemical Fiber. "We have unwavering confidence in the market potential of CIRCULOSE® and its new strategic direction, and we are excited about our

future collaboration. With the long-term investment support of Altor Capital and the market-driven, brand-focused strategies led by Helena and Jonatan, we believe Circulose will bridge the gap between brands and suppliers, pioneering a new era for the circular textile industry."

This strategic partnership further strengthens both companies' shared commitment to scaling up the application of ReVisco™ innovative and circular materials, accelerating the transition of China's textile industry toward a more circular and renewable future. By combining Circulose's world-leading state of the art textile recycling technology with China's large-scale supply chain, Tangshan Sanyou's innovative ReVisco™ fiber will not only meet the growing market demand for sustainable textiles but also drive a transformative shift from raw materials to fabrics (T2T) on a global scale — ushering in a new era of circular economy in the textile industry.

About Circulose

Ciculose is a Swedish sustain-tech company that developed a patented process that enables the recycling of cellulosic textile waste, transforming it into a new material called CIRCULOSE®. Fast Company named Circulose (formerly Renewcell) one of the World's Most Innovative Companies in 2021 and was a winner of the 2023 World Changing Ideas Awards. CIRCULOSE® was also included on TIME Magazine's list of the 100 Best Inventions 2020. Founded by innovators from Stockholm's KTH Royal Institute of Technology in 2012, the award-winning company's vision is to make fashion circular.

About Tangshan Sanyou

Tangshan Sanyou Group Xingda Chemical Fibre Co., Ltd. is a large-scale cellulose fiber manufacturing enterprise integrating design, research and development, production, and sales. The company produces over 100 varieties of all three generations of cellulose fibers, including conventional viscose staple fiber, modal fiber, and lyocell fiber, with an annual production capacity of 830,000 tons. It has been awarded numerous honors, including the New Cellulose Fiber Product R&D Base, National High-Tech Enterprise, National Technology Innovation Demonstration Enterprise, National Circular Economy Pilot Unit, and National Green Factory.

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Hanover is ready to welcome ITMA participants after three decades

The city of Hanover is eagerly waiting to welcome participants of the world's largest textile and garment technology exhibition - ITMA 2027. The exhibition will be held from 16 to 22 September 2027. It is expected to gross 200,000 square metres, occupying 13 exhibition halls at the MesseGelaende Hannover.

Held once every four years since 1951, ITMA was last staged in the German city in 1991. The bid for ITMA 2027 was submitted by the venue owner Deutsche Messe in close cooperation with the capital of Lower Saxony and the office of the Lord Mayor.

Belit Onay, Mayor and CEO of the City of Hanover enthused, "We are elated to have successfully bid for ITMA 2027. A bustling hub for trade fairs and congresses, the city looks forward to welcome ITMA back to Hanover after more than 30 years.

"We will spare no effort to ensure the hosting of an excellent ITMA. Hanover is a green and efficient city with a relaxed atmosphere. As a major trade fair city, Hanover is organised, and easy to navigate, making it a stress-free destination for visitors. Its blend of history and modernity makes it a hidden gem for those seeking a well-balanced urban experience."

Interesting accommodation options

Hanover is no stranger to hosting mega trade shows. Supporting this established trade fairs destination is an ample and diverse range of accommodation options, including hotels, guesthouses, inns and private apartments. Each of these options caters to different needs and offers a unique experience.

Currently, the city of Hanover offers over 18,000 hotel beds, ranging from budget to premium options. In the surrounding districts and metropolitan region, an additional 54,000 beds are available. According to Deutsche Messe, the exhibition venue operator, around 4,000 private accommodations can also be found throughout the city, nearby areas, and the broader metropolitan region.

"The majority of the accommodation allow you to get to the fairground within 30 to 90 minutes. In addition, we have a campground opposite the exhibition venue that is open to participants who bring their motorhomes and caravans. ITMA 2027 participants can expect to have more options when another 700 rooms are made available in the city centre next year," said Dr Jochen Koeckler, chairman of Deutsche Messe's Board.

To further assist ITMA participants, the organiser ITMA Services has appointed accommodation

specialist bnetwork to provide hotel and vacation apartment booking services. Backed by nearly two decades of experience, the destination management company has handled two past ITMA exhibitions in Barcelona and is attuned to the needs of participants.

A dedicated website is being set up for ITMA participants to book their accommodation. Meanwhile, to enquire about accommodation or to book rooms, please contact itmahotels@bnetwork.com.

While Hanover may not be a primary global gateway in Germany, it is exceptionally well-connected within Europe and beyond. With direct high-speed train links and a well-connected airport, it serves as a convenient transit point for business travellers.

The fairground is accessible by public transport. It has two modern light rail stations that provide direct connections to the city centre. It also has direct links to the motorways, and around 39,000 car parking spaces.

Alex Zucchi, president of CEMATEX which owns ITMA 2027, said, "We look forward to staging our exhibition in Hanover. The city has the necessary infrastructure to support a huge congregation of exhibitors and visitors of a mega ITMA exhibition. The organising team is working with the venue owner to ensure that all participants will have a seamless experience akin to what they have been used to at past editions."

More exhibition information will be available from the ITMA 2027 website which will be launched this July, ahead of the opening of stand space application in September.

The last ITMA exhibition was held in Milan in 2023. Grossing 200,000 square metres, it featured the participation of 1,709 exhibitors from 47 countries, and visitorship of over 111,000 from 143 countries.

About CEMATEX & ITMA

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

About ITMA Services

Headquartered in Brussels with a subsidiary in Singapore, ITMA Services is the appointed organiser of ITMA 2027 and future ITMA branded exhibitions.

TEXTILE EVENTS

It is managed by professionals with extensive experience in organising ITMA and other major trade exhibitions around the world. It aims to maintain and expand ITMA's unique selling proposition and relevance to a global audience.

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ITMA ASIA + CITME, Singapore 2025 unveils online visitor registration

Over 770 exhibitors have been allocated stand space

Online visitor registration for ITMA ASIA + CITME, Singapore 2025 which will be held from 28 to 31 October 2025 is now open with early registrants enjoying a 50% discount from the onsite rates.

Visitors who purchase their badge online will enjoy early bird rates of S\$50 for a four-day badge and S\$25 for a one-day badge. These attractive rates are available until 28 September at www.itmaasiasingapore.com.

After the early bird phase, visitors can register with standard online rates at S\$60 for a four-day badge and S\$30 for a one-day badge. Onsite rates during the exhibition are S\$100 and S\$50 for a four-day and one-day badge respectively. All rates include the Goods and Services Tax (GST).

Billed as The Leading Textile Technology Exhibition Driving Regional Growth, ITMA ASIA + CITME, Singapore 2025 is expected to attract visitors from the surrounding textile and garment production hubs.

Mr Alex Zucchi, president of CEMATEX said: "Textile manufacturers from South Asia, Southeast Asia and the Middle East are anticipating the exhibition as a strategic platform to source advanced machinery solutions to help them optimise production efficiency, increase output volumes, and enhance product quality to meet growing market demands."

Mr Gu Ping, president of the China Textile Machinery Association (CTMA), elaborated, "As a premier trade exhibition, ITMA ASIA + CITME, Singapore 2025 highlights cutting-edge textile production solutions by leading technology owners.

By facilitating targeted business discussions, it enables textile machinery manufacturers and industry professionals to forge regional collaboration opportunities, working together to shape a smarter future for the textile industry."

The chairman of the Indonesian Textile Association (API) Jemmy Kartiwa Sastraatmadja who also serves as chairman of the ASEAN Textile Industry Federation (AFTEX), agreed: "The joint exhibition in Singapore is a useful platform for the textile industry in ASEAN. The modern technology on display will help contribute to the competitiveness of the textile and garment industry."

Mr Jemmy added, "It is important for exhibitions such as this to be held regularly. Updating technology and global trends must be a consideration for the sustainable future of the textile and garment industry. In line with the global textile industry that increasingly prioritises environmentally friendly production methods, there must also be a focus on how to overcome production waste and garment waste."

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Garment Tech Istanbul

25-28 Haziran / June 2025

The Latest Ironing and Pressing Machines to be Exhibited at Garment Tech Istanbul Exhibition

Ironing and pressing machines will be among the most eye-catching products at Garment Tech Istanbul Exhibition, which brings together all the technologies used in the garment and ready-to-wear sector. Dozens of manufacturers, including brands such as Malkan Makina, Alba, Silter, LGM Group, will exhibit their ironing and pressing machines, interlining bonding machines, transfer and stone printing machines and ironing benches produced with the latest technologies at Garment Tech Istanbul Exhibition.

Garment Tech Istanbul Garment, Embroidery Machinery Spare Parts and Sub-Industry Exhibition will be held at the Istanbul Expo Center (IFM) between June 25-28, 2025. All technologies used in garment and

ready-to-wear production, from sewing to cutting, from ironing systems to packaging, from embroidery to denim, will be exhibited at the exhibition.

Domestic Producers will Have the Opportunity to Open New Markets

Thanks to its strength in the textile and garment industry, Turkey has become an important production base in the field of ironing and pressing machines. There are many companies in Turkey that produce a wide range of products such as industrial ironing systems, automatic presses, dry cleaning machines, steam boilers, ironing boards. Irons and presses used in areas such as garment and ready-to-wear, hotel management, dry cleaning, laundry and hospitals are exported to the European, Middle East, North Africa, Central Asia and Russian markets. The companies participating in the Garment Tech Istanbul Exhibition, where domestic and foreign manufacturers that focus on R&D and innovation will meet with global buyers, will increase brand awareness, open up to new markets and sign commercial collaborations.

Energy Saving and Durable Ironing Systems

As technology has developed, so has the variety and efficiency of ironing and pressing machines. New-generation irons, which use steam more efficiently, automatically detect the type of fabric and provide the ideal temperature and moisture balance. In addition, anti-limescale and energy-efficient models offer long-lasting and environmentally friendly use. Touch-screen controlled, programmable systems stand out in press technology, especially in the industrial sector. Thanks to high-pressure steam technology, these machines open creases quickly, save time and do not damage fabrics. In addition, automatic ironing stations integrated with robotic systems are revolutionising the textile industry. Visitors to the Garment Tech Istanbul Exhibition, where hundreds of products will be on display, from domestic and industrial steam irons to universal presses (with and without boilers), from blow ironing machines to vacuum ironing boards, from automatic and manual pressing machines to electric steam boilers, will have the opportunity to see the latest trends in the sector and meet various innovations.

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ITMA ASIA + CITME

Singapore 2025, 28-31 October 2025, Singapore Expo

The Leading Textile Technology Exhibition Propelling Regional Growth

ITMA ASIA + CITME, Singapore 2025 is the region's leading textile technology exhibition driving growth in South and Southeast Asia, and the Middle East. Grossing over 70,000 sqm, the exhibition features the participation of over 770 international exhibitors.

Scale up your production capabilities and stay ahead of the competition. Discover the key benefits of visiting:

- ✦ Experience live machinery demonstrations
- ✦ Meet direct technology manufacturers to customise solutions
- ✦ Gain an overview of the entire textile and garment value chain with end-to-end showcase covering 19 product sectors
- ✦ Navigate the exhibition efficiently for a targeted sourcing experience

Plan your visit early. Save up to 50% when you purchase your badge early!

Revolutionising Textile Manufacturing

The Future of Speed, Sustainability and Innovation

Textile manufacturing is evolving rapidly with smarter technologies. From AI-powered yarn spinning and high-speed weaving machines to eco-friendly, on-demand digital printing, innovations are driving speed, efficiency and sustainability.

Read more to unravel the advances in technology that you may encounter at ITMA ASIA + CITME, Singapore 2025.

Combine Business with Leisure in Visa-friendly Singapore

Supported by its visa-friendly policy, Singapore warmly welcomes international visitors (check if you need a visa at www.ica.gov.sg). Register for a visitor badge early and request for an invitation letter to support your visa application.

Singapore's unparalleled connectivity from over 400 cities provides a smooth and hassle-free travel experience. Enjoy best rates for accommodation from our official travel agent Burnaby Solutions, and promotional rates for flights travelling to Singapore through our official airline Singapore Airlines.

Reading Insights

Discover trending topics that are propelling the industry. Stay informed through our blogs.

Exclusive Updates

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

For further information, please contact:

www.itmaasiasingapore.com





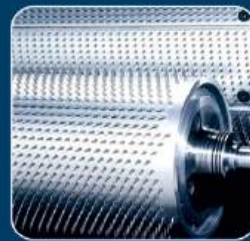
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A House of R&D in spinning Half Lea Roving CSP

Roving TM is playing an important role in yarn quality and Ring frame performance. Roving TM should not be too high or too low. When we visited more than 200 mills in all over India for Installation of our AGMA Cradles, we struggled much in many mills to bring R/F performance to normal (Existing level) because of too high or too low Roving TM, due to instructions from different makes of speed frames and different theories of technicians. We had seen Roving TM from 1.16 to 1.55 in 100% cotton, carded or combed for the counts range -20s to 60s. Then we decided to find some system for fixing Roving TM suitable for all cradles, such that

- 1) Roving m/c production should not be affected.
- 2) Roving should not create any creel draft or breaks.
- 3) Top rolls and aprons should not worn out quickly.(Groove formation).
- 4) To produce good quality yarn with less IPI & Classimat Faults with the spinning parameters of a) Bottom Roller setting - 42.5/60 mm or 44/60 mm & b) Break draft - around 1.14
- 5) To maintain R/F Performance.
- 6) For winding m/c performance also. Practically, to maintain yarn CSP in spinning, we used to adjust spinning TPI according to fiber quality parameters. By applying same method, we have arrived Half Lea Roving CSP method (after long studies) to maintain CSP range (25- 30) for all mixings (whatever fiber quality, Fiber length, micronaire, SFC and strength). This method can be applied for all makes & gauges of cradle. **PROCEDURE FOR CHECKING HALF LEA ROVING CSP**

- 1) Take 5 nos of roving bobbins (Bobbin Size - ¼ to ½ size) from last delivery cans of finisher draw frame, to know present mixing condition and remove outside one layer of roving bobbin, before making Half Lea.
- 2) Make 1/2 lea (40 rounds – 60 yds) from each bobbin by using wrapping reel m/c. You may operate wrapping reel m/c electrically or by hand with constant speed.
- 3) Check Hank of roving, then, check 1/2 lea roving strength in lbs in lea strength m/c.
- 4) To get CSP, multiply Avg Hank with Avg strength in lbs. If, **1/2 lea roving CSP is in the range of 25 to 30**, it will be better for quality improvement and performance in Ring frame with bottom roll setting 42.5/60 mm in P3-1 Top Arm 42.0 or 42.5 or 44/60 mm in SKF and TEXPART top arms and with break draft of 1.136 for any makes of cradle

If roving CSP is more than 30, which leads to

- a) Undraft in spg
- b) Long thick place in yarn
- c) Aprons & cots worn out quickly

- d) Lifting Top Arm to reduce undraft &
- e) Fibre ruptures in spinning drafting.

If roving CSP is less than 25, which leads to

- a) more end breakages in spg
- b) IPI will be more
- c) more Long thin in yarn &
- d) Yarn CSP also will be less.

Cradle Size	Yarn Type	Can Be used for
 AGMA 43mm LR P3-1 Top Arm	Normal, Melange, Slub, Lycra, Eli Twist, Compact	100% Cotton, 100% Viscose P/C, P/V & other Blend upto 44 mm cut length
 AGMA 40.6 mm LR P3-1 Top Arm	Normal, Melange, Slub, Lycra, Eli Twist, Compact	100% Cotton, 100% Viscose P/C, P/V & other Blend upto 40 mm cut length
 AGMA 40.6 mm SKF/TEX PARTS PK 225, PK 2025	Normal, Melange, Slub, Lycra, Eli Twist, Compact	100% Cotton, 100% Viscose P/C, P/V & other Blend upto 40 mm cut length
 AGMA 40.6 mm SUESSEN HP- A	Normal, Melange, Slub, Lycra, Eli Twist, Compact	100% Cotton, 100% Viscose P/C, P/V & other Blend upto 40 mm cut length
 AGMA 40.6 mm SUESSEN HP- GX	Normal, Melange, Slub, Lycra, Eli Twist, Compact	100% Cotton, 100% Viscose P/C, P/V & other Blend upto 40 mm cut length
 AGMA 50 mm SKF/TEXPARTS PK 2035 Medium cradle	Normal, Melange, Slub, Lycra, Eli Twist, Compact	100% Cotton, 100% Viscose P/C, P/V & other Blend upto 51 mm cut length
 AGMA 50 mm LR P3-1 Medium cradle	Normal, Melange, Slub, Lycra, Eli Twist, Compact	100% Cotton, 100% Viscose P/C, P/V & other Blend upto 51 mm cut length

Methods of mixing in a lay down

- a) Many mills are checking Fibre quality in 2 - 4 bales of cotton in one lot purchased.

For mixing, many lots will be used (1- 3 bales / lot) in a LAY DOWN.

If one lot is finished, the other lot will be used with fiber quality more or less the same as the finished lot.

- b) Mills, following bale management in mixing, are checking all cotton bales and mixing will be laid, as per their system, in LAY DOWN.

In both methods, mills give importance to reduce or avoid colour variations in clothes after dyeing, which is very important, for the market.

In both methods, AVERAGE HALF LEA ROVING CSP will vary lay down to lay down.

A House of R&D in spinning Half Lea Roving CSP

Fibre Parameters	Average fibre quality of Lay Down	
	Increase	Decrease
Fibre Length	Roving CSP – more	Roving CSP – Less
Micronaire	Roving CSP – Less	Roving CSP – more
Short Fibre Content	Roving CSP – Less	Roving CSP – more
Comber Noil%	Roving CSP – more	Roving CSP – Less

To maintain yarn quality and performance of spinning m/c and winding m/c, please maintain 1/2 lea roving CSP in the range of 25 to 30, by adjusting Roving TPI, for any mixing (Whatever may be fiber length, micronair and SFC) of 100% Cotton (carded or Combed) & P/C.

We have applied this system in our customer mills. For the past 7 years many mills are using this system successfully.

Nowadays, Mill Technicians are checking Half Lea Roving CSP once in 2 days and whenever lot change in mixing and maintaining CSP Range to maintain yarn quality, R/F performance and yarn CSP.

This range (25-30) is recommended upto count 60's and may be modified by Mill technician suitable for their machine & humidification condition and other reason for achieving good quality of yarn and machinery performance.

If you fix one range that should be maintained daily, for all mixing, by adjusting Roving TPI, if Half Lea Roving CSP goes out of range.

Nowadays mills are achieving higher CSP yarn by increasing Roving TM. In such a case Half Lea Roving CSP range will be higher than 25-30. Mill technicians have to maintain the higher range daily. For fine counts, we are conducting studies.

If any suggestion or clarification, please contact below mentioned number.

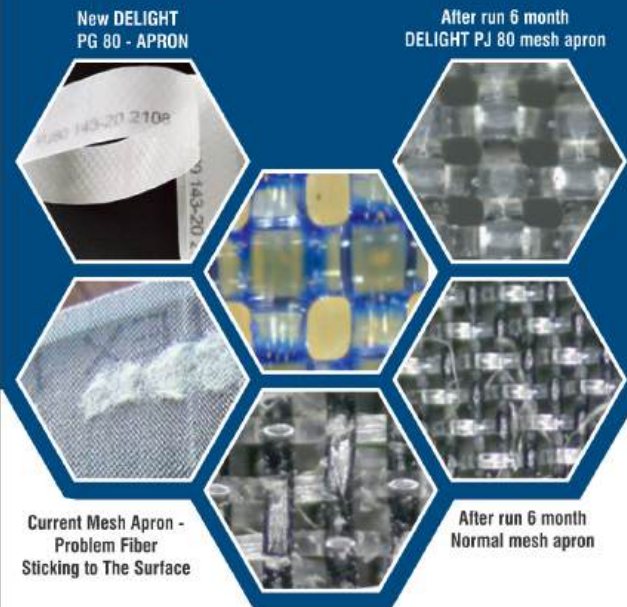
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Vetri Engineers offering Precision Top Rollers to global textile mills in enhancing the production of quality ring yarn and textile products

Vetri Engineers with its profound knowledge in production of 'Top Roller' now spreading its products in more than 36 countries

Coimbatore-based Vetri Engineers has carved a strong reputation for itself in the textile industry through its high-quality top rollers and spinning replacement spares from 1992. Over the years, the company has grown steadily, expanding its reach into key global markets and earning the trust of customers worldwide.

In an exclusive interview, S. Jayaprakash, Chief Executive of Vetri Engineers, shared insights into the company's journey, its flagship product 'Vetri Top Rollers', along with textile spinning replacement spares and how it continues to support textile mills—especially during challenging times.

Meeting today's industry challenges

Jayaprakash began by addressing the current scenario in the textile industry. "The ongoing crisis, driven by the USA's tariff tensions with countries including India, has underscored the need for Indian textile mills to reinforce their competitiveness. Mills must now focus on producing superior ring yarn quality and textile products to thrive both domestically and in export markets," he emphasized.

The strength behind Vetri Top Rollers

"For spinning mills, we have been offering 'Vetri Top Rollers' for the past 32 years," he noted. "Our Vetri Top rollers with end bushes, a world class quality product, manufactured by us are highly reliable and cost effective and they are used as maintenance replacements and to suit the original machine specifications to achieve better parallelization (evenness) and correct drafting (less imperfection) of the yarn/ fibre movement at higher efficiency in the textile preparatory system of lap formers, comber and draw frame machines for many makes such as Rieter, Ingolstadt, Lakshmi Rieter / LMW, Truetzschler, Zinser, Vouk, Toyoda, Cherry Hara, Howa, Padmatex, Texmaco-Howa, Platts-Sacco Lowell, even for Chinese make machines etc. High precision accuracy is given top priority in our production process. We find pride in meeting the most stringent tolerance. We continuously innovate and improve the products toward customers satisfaction.

There top rollers are fitted with NO.1 best Rubber cots from Accotex Germany which ensure the Right sliver yarn quality.

A legacy of innovation

Highlighting the company's pioneering approach, Jayaprakash said, "Before we entered the market, top rollers were mostly imported from Germany, Switzerland, Japan, and other countries. We invested heavily in R&D and reverse engineering to match, and

in some cases exceed, global standards." That's why we could spread to more than 36 countries including in USA, where almost 1000 nos of Vetri Top Rollers are working.

Vetri Engineers' commitment to innovation is reflected in its state-of-the-art infrastructure, including automated high-precision CNC machines, a focus on digital technologies, and rigorous quality control systems.

He added, "We've always prioritized offering premium quality at competitive pricing, combined with faster delivery. This continues to be our strength."

Trusted globally

Vetri's focus on quality has not gone unnoticed. The company now serves customers across the USA, South America, Asia and Europe, many of whom have become repeat clients. "We're proud that customers overseas have experienced exceptional sliver quality with our rollers. Many Indian and global mills consider Vetri Top Rollers as reliable, non-original replacements for OEM parts," he said.

Speed and support

One of Vetri Engineers' key differentiators is its ability to deliver quickly, thanks to a robust inventory. "Our top rollers are available within 24 to 72 hours, with stock levels ranging between 15,000 to 20,000 parts including Accotex cots," Jayaprakash shared. "With 32 years of expertise and a vast inventory, we've ensured consistent quality and uninterrupted supply for our clients."

In light of the current challenges faced by the textile industry including from the competitors, Vetri Engineers is also extending a flat 20% special discount on Vetri Top Rollers. "It's our way of supporting the industry and helping cushion the impact of global tariff tensions," he added.

Looking ahead

As for what's next, Jayaprakash shared that the company is also making strides beyond the textile sector. "Our success in textile machinery spares has opened up opportunities in contract manufacturing of Mechanical engineering components for various industries to USA, Canada, UK, Australia and middle east. We're working hard to build on both market segments. With global conditions improving, we're optimistic about continuing on our growth path on India made engineering products reach."

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TRÜTZSCHLER
SPINNING

Oerlikon Barmag

With its DTY solutions, Barmag is emphasizing on sustainability

With a clear focus on sustainability, Barmag, a subsidiary of the Swiss Oerlikon Group, is presenting comprehensive solutions from its product brands Oerlikon Barmag and Oerlikon Neumag for DTY and carpet yarn production at the Morocco Stitch & Tex Expo in Casablanca. From May 13 to 15, trade visitors can talk to experts from Barmag and the joint venture BB Engineering (BBE) at the Unionmatex booth (booth B4) to get an idea of the portfolio of the chemical fiber machine manufacturer.

Sustainable and efficient – the production of DTY yarns

Oerlikon Barmag offers a wide range of DTY machine configurations for the efficient and sustainable production of high-quality textured yarns made of various polymers – from polyester and polyamide to polypropylene, PLA and PTT. The modular machines – whether manual or automatic – produce yarns for excellent downstream processing at optimal OPEX costs.



The eAFK Big V multi-spindle texturing machine is a central component of the Oerlikon Barmag product brand for manufacturing high-quality, high-titer yarns.

Fancy yarns increasingly in demand

The demand for textiles with special characteristics is continuously increasing. For the production of these effect yarns, such as cotton-like DTY, linen-like DTY or wool-like DTY, Oerlikon Barmag offers a variety of processes and additional components. With its high-quality and flexible technology as well as its detailed knowledge of the yarn path and the required parameter settings, Oerlikon Barmag is the ideal partner for the successful and flexible production as well as the continuous further development of these specialty yarns.

Extended product range for carpet yarns

Thanks to its comprehensive knowledge of all relevant technologies in manmade fiber spinning, Oerlikon Barmag is the only manufacturer worldwide that can expand its range for the production of carpet yarns. The system concept, based on a POY and texturing process, is designed for the carpet and home textile sector and produces particularly soft and bulky polyester threads with BCF-like properties. The aim is to produce yarns with a titer of up to 1300dtex and over 1000 filaments, such as 1300dtex f1152, 660dtex f1152 and 990dtex f768. The machine concept includes the well-known WINGS HD POY winder and the eAFK Big-V texturing machine.



The BCF S8 system from Barmag's product brand Oerlikon Neumag offers high productivity and expands the product portfolio to a level that can survive in a constantly changing market.

Innovative bicomponent BCF yarn for the carpet market

Quality, efficiency and performance – with its latest development in the field of bicomponent yarns for carpet production, Barmag's product brand Oerlikon Neumag is meeting the carpet market's demand for innovative BCF yarns. The new BICO-BCF yarn is characterized by a richer and higher volume and simultaneously significantly reduces the raw material consumption during carpet manufacturing.

VarioFil® – versatile compact spinning system for diverse applications and specialties

The VarioFil® system from BBE is ideal for a broad range of products, whether it be carpets, upholstery fabrics, fashion, sports, seat belts or airbags. This compact turnkey spinning line is

SCIENCE IN INDUSTRY

particularly suitable for producers of small batches or specialized products. It flexibly processes various polymers such as PET, PP, PA 6, PA 6.6 and PBT. In combination with Oerlikon Barmag texturing machines, a wide range of textile standard yarns as well as textured yarns with BCF-like properties can be produced.

The VarioFil® R+ enables the direct recycling and processing of PET bottle flakes and PET waste from the start-up process into POY. This sustainable machine concept offers a high degree of product flexibility, including the production of spun-dyed yarn.



The JeTex air texturing machine from BB Engineering ensures both gentle yarn treatment with reliable texturing effects and efficient production.

JeTex® air texturing offers a versatile product portfolio

BB Engineering also offers flexible solutions for the subsequent texturing of yarns. The JeTex® air texturing system perfectly complements the Oerlikon Barmag DTY systems and expands the product portfolio to include high-quality ATY based on POY and FDY for various textile applications. The centerpiece of the system is the texturing box developed by BB Engineering, which ensures gentle yarn treatment with reliable texturing effects and production efficiency.

“From waste to value” with VacuFil and Visco

BBE's VacuFil PET recycling system transforms textile waste into high-quality rPET melt. The technology is based on decades of experience in extrusion, filtration and spinning and combines gentle large-area filtration with targeted IV control. VacuFil processes various input materials, from bottle flakes to production waste and post-consumer waste. The patented Visco+ component removes volatile contaminants and automatically

regulates the IV. The recycled melt can be added to the main melt stream, pelletized into chips or fed directly back into the spinning mill. The VacuFil system is modular and flexibly adaptable to customer needs.



The modular VacuFil® system from BB Engineering converts both post-consumer and post-production polyester waste into valuable resources.

About Barmag

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

Barmag is one of the leading suppliers of filament spinning systems for manmade fibers, texturing machines, BCF systems, staple fiber systems and solutions for the production of nonwovens. Together with its range of polycondensation and extrusion systems and their key components, Barmag thus covers the entire manufacturing process - from monomer to textured yarn - and supports it with customer-oriented engineering services. The product portfolio is rounded off by automation and digitalization 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, Turkey and the USA. Barmag employs around 2,500 people worldwide and is represented by production, sales and service organizations in 120 countries. In the research and development centers in Remscheid, Neumünster (Germany) and Suzhou (China), highly qualified engineers, technologists and technicians develop innovative and technologically leading products for the world of tomorrow.

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

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SIMTA Group of Companies

In the wake of remarkable transformation and transition in Textile Industry SIMTA brings in an innovation in Bobbin Transport System (BTS)

The textile industry has transformed remarkably, transitioning from manual operations to highly automated systems. Among the many technological innovations driving this evolution, the Bobbin Transport System (BTS) is a critical component in ensuring efficiency and automation.

SIMTA predicted this technology much earlier and has partnered with JACOBI to provide a seamless, cost-effective solution that is user-friendly for the spinning industry. Without an efficient bobbin transport system, the smooth functioning of spinning processes would be severely hindered, ultimately impacting the quality and quantity of the final product.

Contemporary bobbin transport systems simplify the transfer of bobbins from the roving frame to the ring frame. This advancement decreases reliance on labor, minimizes mistakes, and boosts overall productivity. It embodies the larger transition to Industry 4.0, characterized by interconnected systems and the crucial role of real-time data in enhancing production efficiency.



In the early days of textile production, bobbin transport was a labor-intensive process. Workers manually carried bobbins from one stage of production to another, a practice that was both time-consuming and prone to errors. The physical effort required, combined with the inefficiency of manual handling, often led to bottlenecks in production.



Types of Bobbin Transport Systems

- ❖ Fixed Loop System
- ❖ Automatic Bobbin Transport System
- ❖ Auto Creel change bobbin transport system

SIMTA has pioneered in all the above three systems for over 2 decades and has installed more than 5 million spindles across the world, and it is working successfully. SIMTA ensures a tailor-made design to adopt the layout of the spinning mills.

In the spinning industry, Labor costs can be a substantial expense in textile manufacturing. Traditional creeling methods require a considerable workforce to manage bobbin changes and monitor production. Companies typically spent around 20-30% of their operational budget on labor related to

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creeling. However, the implementation of the auto creel bobbin transport system has drastically reduced these costs. The Auto Creel Change Bobbin Transport System is the latest emerging system in India, which ensures a smooth transition of the bobbin.



The Automatic creel change in ring frames is popular in European countries. Now, only in India are we thinking about this type of system.

The Automatic creel change is done, particularly in rows or blocks, to ensure smooth working. This is done to have a controlled production of particular lots without any excess material and also ensure the rovings are free from manual handling. If the roving is incorrectly treated or is kept too long in intermediate storage, damage and soiling will occur. Horizontal transport, uncontrolled intermediate storage, and any kind of contact will damage the roving and cause quality deterioration.



As the roving is a more delicate product and gives good quality when it is handled correctly without touching its surface, Simta ensures to transfer this quality material without affecting its surface to the Ring frame.

SIMTA Auto creel change mechanism gives unique features as below:

- ❖ Controlled and regular changes of the Bobbin in the ring frame
- ❖ No wastages of roving during the lot change
- ❖ Easy monitoring of lots and avoiding material mix-up
- ❖ Reduces the intervention of humans

- ❖ The Bobbin will group feed in the ring frame through FIFO
- ❖ Maximize production capacity and ensure smooth bobbin transfer
- ❖ Move different lots at the same time



SIMTA ensures the efficient transport of the bobbin as per the requirement. The same can be pre-programmed as per the production schedule, so this ensures the movement of bobbin inside the ring frame 24 X 7 without any manual interruption and also ensures less time for the change of bobbins. This will also help the spinning mills to monitor the quality at the same time, excess production of a particular count can also be avoided.



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info@fancytex.com,
skaushik@fancytex.com
www.beaelectronics.com

The Entire process is based on understanding the requirements of the customer and making a layout to fulfill the task of the customer. SIMTA has installed the projects across the globe, and the same has been working hassle-free for a decade.

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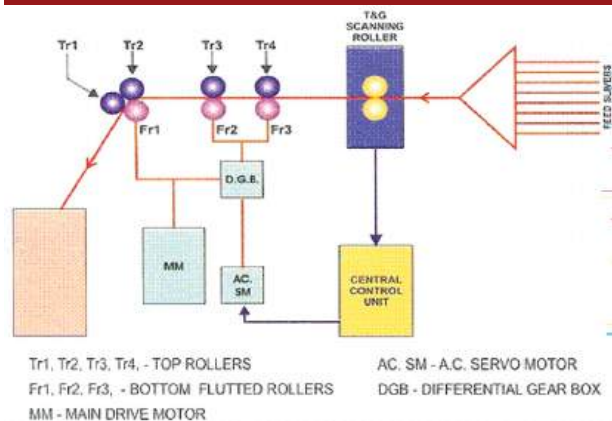
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Sakthi Textile Engineers

With moto of quality product Sakthi now manufacturing Top Roller using cutting-edge technology

SAKTHI is involved in the manufacture of Excellent Quality Top Rollers suitable for textile Preparatory & Spinning machines as a replacement spare for various type of Draw frame, Comber, Sliver lap, Ribbon Lap and Uni Lap machines. Established since 2007, SAKTHI is promoted and run by a team of dedicated team of qualified engineers with a decade of manufacturing and development experience in engineering. SAKTHI'S motto is to provide quality products in the Spinning process and make the customers to achieve optimum level of production and quality.



In the Draw Frame process, two actions takes place - One is doubling and another one is drafting. The doubling process helps to improve the evenness of the sliver and drafting helps to achieve the maximum parallelisation of fibre along the sliver length and reduce the linear density of the sliver too. Draw frame transforms the coarse, irregular, and often contaminated sliver

into a finer, more uniform, and cleaner roving. This roving can then be processed in subsequent spinning operations to produce high-quality yarn.

Here, Top roller places the major role for spinning quality yarn. SAKTHI Top Roller ensures the same by its expertise, application of knowledge and manufacturing under the required parameters. The development team updates the products according to the latest demands. SAKTHI offers more than 80 variants in Draw Frame, Comber and Lap Former Top Rollers to meet out the requirements of the global market. Operating with enormous 2 decades of experience in Top Roller manufacturing, SAKTHI is 100% indigenous and proven globally. Also being associated with 2 OEM since many years is an added diamond to our crown.

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Mimaki Europe B.V.

Mimaki launches New UV DTF Technology and Next-Gen UV Inks ahead of Innovation-Packed FESPA 2025

- » The UJV300DTF-75 enables product customisation and value-added printing on items of all shapes and sizes, as well assign and interior décor applications
- » Mimaki's new ELS-170 and ELH-100 UV inks have been specifically developed to comply with the EU's REACH regulation, helping customers to meet regulatory requirements, while providing durability and flexibility
- » Mimaki to kick off its 50th anniversary celebrations at FESPA and invites everyone to 'Print Different' with latest slogan

Mimaki Europe, a leading provider of industrial inkjet printers and cutting plotters, is set to showcase its first UV-DTF (UV curable, direct-to-film) printer, the UJV300DTF-75, at FESPA Global Print Expo 2025. Combining Mimaki's expertise in sustainable, energy-efficient UV technology with its proven DTF textile printing capabilities, this latest entry produces high-quality, customisable prints, ideal for decorating items of all shapes and sizes, including those with uneven or rounded surfaces. The UJV300DTF-75 will be one of many industry-shaping innovations making their debut at the event (Hall 1.2 / Stand B20), as Mimaki kickstarts its 50th anniversary celebrations.

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The brand-new UJV300DTF-75 uses a transfer printing method, where the design is printed directly on a glued film, applied to a transfer sheet which is then applied to the object. This further expands application and creative possibilities with reduced risk of misprinting. Equipped with proprietary silicon film pinch rollers, this printer effectively addresses issues such as film peeling off or glue being removed, maintaining print stability for desired quality and accuracy. The printer incorporates Mimaki's core technologies, including automatic nozzle check, nozzle recovery function, ink circulation function and anti-collision sensor, to ensure consistent reliability with minimal user intervention.



Mimaki's new UV-DTF printer, the UJV300DTF-75, is ideal for product customisation and value-added printing

Arjen Evertse, Director Sales at Mimaki Europe, comments, "Mimaki led the way with the release of its first DTF printer in 2023, which continues to be incredibly successful within the textile market. Building on this achievement, we are extending the core concept—printing on a film first, then transferring it to surfaces that are challenging to print on directly—to new markets. With the UJV300DTF-75, we have also leveraged our expertise in UV printing to deliver a reliable solution for object decoration, enabling high-quality, durable prints on surfaces that were previously unsuitable for direct UV printing."

Further expanding its expert UV offering, Mimaki is introducing its next generation of UV inks, ELS-170 and ELH-100 at FESPA. The range abides by EU's REACH regulation (SVHC regulation) and is GREENGUARD Gold certified,

making it both environmentally and health conscious. The UJV300DTF-75 uses a unique combination of the two: ELH-100 (hard ink) for White and Clear, and ELS-170 (flexible ink) for CMYK, ensuring industry-leading durability with both strength and flexibility.

Mimaki encourages the industry to 'Print Different'

To mark 50 years of introducing transformative technology to the sign graphics, industrial, and textile printing markets, Mimaki is launching its 'Print Different' vision. The initiative not only celebrates Mimaki's legacy of breakthrough technologies but also highlights the company's continuous commitment to driving creativity and sustainability in the digital printing industry.

In line with this vision, the Mimaki FESPA booth will showcase an impressive display of Mimaki solutions across multiple sectors, many of which will be demonstrated for the first time at an international show. One of these brand-new technologies is the recently launched, direct-to-textile Tx330-1800, with dual capabilities for printing on both fabric and paper. In addition, the JFX600 and CFX Series print-and-cut solution, as well as the CJV200-160, TS330-3200DS, and TRAPIS will showcase the wide-ranging, creative application possibilities enabled by Mimaki technology.



Combining the capabilities of UV and DTF printing, the prints can be applied on any surface, while maintaining its quality and detail

Danna Drion, General Manager Marketing and Product Management at Mimaki Europe, comments, "Mimaki's ethos is one of continuous innovation that combines the need for productivity, performance and improved sustainability. This is why 'Print Different' exemplifies everything Mimaki stands for and provides the perfect

backdrop for our 50th anniversary celebrations. It reflects both our pioneering spirit and our ongoing commitment to shaping a more vibrant, sustainable future for digital printing - with our customers at the heart of it."

Mimaki is also shaping the industry's future by supporting Girls Who Print and the FESPA Foundation. Danna Drion continues, "FESPA will be the official event to launch Girls Who Print Europe. This represents a powerful step towards a more inclusive print industry. At Mimaki, we know that true innovation comes from diverse voices, education and supporting communities. This is why we have pledged our commitment to the FESPA Foundation too. Together, these initiatives are empowering change and building a future where different opportunities are open to all."

To find out more about Mimaki's drive to 'Print Different', visit: www.mimakieurope.com/print-different/

For more information about Mimaki's innovative products and solutions, visit: www.mimakieurope.com/

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.

A brief profile of Mylon

MYLON METALLICS incorporated in 2015 is 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

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- ❖ 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.

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Kornit Digital

Top U.S. Patriotic Apparel Brand Deploys Kornit Digital's Flagship Apollo System to ease the Agility of Digital Printing

❖ Grunt Style significantly increases production speed and shortens reaction time for surging customer demand – powered by the automated Kornit Apollo direct-to-garment digital print solution.

❖ Addition of digital production to existing screen printing ensures no item is ever out of stock as demand grows for patriotic apparel

Kornit Digital LTD. (NASDAQ: KRNT) ("Kornit" or the "Company"), a global pioneer in sustainable, on-demand digital fashion and textile production technologies, today announced that Grunt Style – one of America's most recognized patriotic apparel brands – is making a bold move from analog screen printing to digital production with Kornit Apollo. This strategic shift provides Grunt Style the agility necessary to eliminate stock shortages, produce at record speeds, and meet demand with unmatched efficiency, all while supporting a commitment to high-quality, American-made apparel.

Founded in 2009 by a former Army Drill Sergeant, Grunt Style has built a fiercely loyal following by combining disruptive marketing, premium apparel, and an unapologetic commitment to American pride. With 17 retail stores and distribution across more than 2,500 locations, the brand required a production solution that could scale with e-commerce and retail demand – without delays or waste.

The Kornit Apollo direct-to-garment platform is specifically designed to address these needs with a solution that revolutionizes the supply chain by unlocking new levels of speed and flexibility.

Apollo is unmatched in the market, setting the bar for high speed, retail quality direct-to-garment digital printing – enabling customers to gain a competitive edge through:

- ❖ Unmatched speed with ability to produce up to 400 garments per hour
- ❖ Automated loading and unloading of garments
- ❖ Auto-sized pallet shifting per garment size
- ❖ One-step system managed by a single operator

“Speed, efficiency and quality are critical to our success at Grunt Style – and Kornit Apollo delivers. With the power to manage fully automated, on-demand production, we’re now able to eliminate stock shortages, produce at record speeds, and scale seamlessly – without compromising our commitment to premium apparel,” said Bill Hammond, CFO/COO at Grunt Style. “This isn’t just an upgrade; it’s a fundamental shift in how we’re able to meet customer demand in real-time.”



“Apparel isn’t just about the garments; it’s a new form of self-expression. That’s why brands such as Grunt Style have become so popular, as consumers want to share their love of country and community with great looking fashion garments,” said Ronen Samuel, Chief Executive Officer at Kornit Digital. “For brands and producers, speed and agility are the key factors that truly define success in today’s apparel market – and Apollo is designed from the bottom up to meet these requirements. With Apollo, there’s virtually no limit to what our customers can achieve. This is the future of on-demand production.”

To learn more about Kornit Apollo and how it’s revolutionizing the transition from screen to digital production, visit: <https://www.kornit.com/printer/kornit-apollo-printer/>

About Kornit Digital

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

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Crealet AG

From the scribble at the bar to faster engine production

How the love for beautiful cars led to an improved and faster production of a car engine part. Here’s the story:

A few years ago, a founder and engineer of a small company for special machine manufacturing scribbled a rough plan on a piece of paper over a beer in the provinces.

It was his enthusiasm for beautiful cars that originally got the conversation going. After a few beers, he described an idea for an integrated press for an important engine part.

He envisioned an automated, complex casting system that could not only press and shape the engine part perfectly, but also feed the aluminium blanks into the press one after the other, place them and check their precision. Depending on the result of the test, the part is then either corrected (up to 50 tons of pressing pressure) and forwarded to production or, if necessary, to the recycling channel.

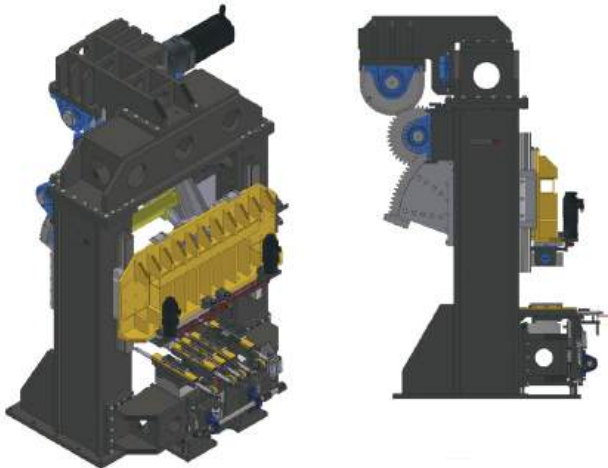


SCIENCE IN INDUSTRY

The vision for the system in a few words:

- ⇒ fully automated
- ⇒ drastically increase the output per day
- ⇒ prevent production interruptions because of faulty parts
- ⇒ quickly send parts that do not meet the requirements to recycling

A few weeks later, after considering all aspects of the factory environment and the various requirements in terms of feeding options, placement of blanks, press force and reset mechanisms, we ordered the necessary parts to build the prototypes and the development of the control software began.



A few months after the first sketch in the provincial bar, we bolted the first version of the straightening press to the floor and began testing the software and the integrated process. The system met the requirements very quickly.

And it all started with a beer and a little scribble on a piece of paper in the provinces (St. Gallen).

Innovative solutions in mechanical engineering

In mechanical engineering, precision, efficiency and innovation are crucial for success. Our engineering team offers you tailor-made solutions that master your technical challenges and optimize your production processes.

With state-of-the-art technology and many years of expertise, we develop machines and systems that meet your requirements and exceed your goals.

Rely on our engineering expertise and gain a competitive edge in a dynamic industry. Together we will shape your future - precisely, efficiently and innovatively. Engineering for the future - your vision, our engineering!

Efficient replication of wear and spare parts - trouble-free and accurate

Do you lack the technical documentation for your wear and spare parts? No worries - we have a quick solution! Using Autodesk CAD Inventor, we reconstruct the required parts from sketches, drawings or sample parts and produce the necessary technical documentation. This means you can easily source your spare parts and avoid bottlenecks.

Our network of qualified partners enables us to manufacture parts using a variety of production technologies - always to the highest quality. Whether it's a simple or complex component, we can offer you customised solutions to meet your needs.

Complete service for your design documentation

- ⇒ Quick and easy reconstruction of missing parts
- ⇒ 3D CAD designs and detailed fabrication drawings
- ⇒ Creation of bills of materials and illustrations for accurate implementation
- ⇒ Access to an extensive network of manufacturing partners

Leverage our expertise and let's move your projects forward together. Contact us today!

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Sawgrass Communications

Sawgrass set to introduce VersiFlex™ at FESPA 2025: A Disruptive Leap Forward for On-Demand Production in the European Print Market

Sawgrass, a global leader in digital decoration technology, is set to unveil its groundbreaking new solution, VersiFlex™, at the FESPA Global Print Expo 2025 in Berlin, Germany. The European launch of this revolutionary 3-in-1 decorating system will take place 6–9 May 2025 at Messe Berlin, where visitors can experience VersiFlex™ in action at the Sawgrass stand 2.2 – B58. Combining

the best of sublimation, DTG, and DTF in a single, compact system, VersiFlex™ allows professionals to seamlessly print on virtually any surface—from cotton and linen to ceramics, wood, metal, acrylic, and vinyl. It's a disruptive innovation designed for the modern European print industry.



"This is the hybrid system we've been waiting for," said Joel, a print business owner in the UK. "No curing, no pre-treatment, no powder—just brilliant colour across everything from cotton apparel to slate coasters."

True Disruptor: Print on Virtually Anything

VersiFlex™ eliminates the old dilemma of having to invest in multiple systems to support diverse materials. Its patented ink set and specially formulated transfer papers allow professionals to create vibrant, high-durability designs across a wide range of substrates—including those previously incompatible with sublimation alone.

What makes VersiFlex™ truly disruptive is how it unites the versatility of DTF, the durability of sublimation, and the expandability of DTG into one fluid workflow. For years, decorators have had to choose between these benefits—now, they're available together.



VersiFlex™ lets users print vibrant, high-definition designs on natural fabrics like cotton, linen, and denim, while also enabling durable

transfers onto hard surfaces such as wood, ceramic, metal, and slate. It's also compatible with heat transfer vinyl and traditional sublimation blanks, vastly expanding the creative and commercial potential of any print business.



The patented VersiFlex™ process integrates four proprietary Sawgrass components: industry trusted printers, advanced VersiFlex™ inks, intuitive software, and proprietary transfer papers—such as VersiFlex™ Light self-weeding paper or TruePix sublimation paper. Designs are printed onto the paper and then transferred to the final substrate using a heat press, delivering a seamless, high-quality decorating experience across virtually any material.

VersiFlex™ provides production-level quality—without the industrial complexity.

Designed for Business: Low Complexity, High Versatility and Flexibility

Sawgrass developed VersiFlex™ specifically for on-demand producers, boutique printers, and growing custom merchandisers in Europe. The system offers a significantly lower total cost of ownership by reducing the need for consumables, eliminating pre-treatment steps, and minimising maintenance. Its streamlined production process is fully compatible with both the SG500 and SG1000 printers with standard or extended cartridge formats, making it ideal for commercial workflows. And with a compact footprint that requires no curing ovens or specialised ventilation, VersiFlex™ easily fits into almost any workspace.

"With VersiFlex™, we're bridging the long-standing gap between professional-grade output and the practical realities of modern production workflows," said Thomas Kirschner, President at Sawgrass. "Creative professionals, small businesses, and on-demand producers no longer have to choose between quality, versatility, and simplicity. This platform delivers the power of multiple systems—sublimation, DTF, and DTG—in one compact, affordable, and scalable solution.

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We're delighted to showcase our disruptive technology at FESPA 2025 in Berlin, where the world's most forward-thinking print innovators will see first-hand how VersiFlex is reshaping what's possible in digital decoration."



Launching at FESPA 2025 in Berlin

Sawgrass will formally debut VersiFlex™ to the European market at FESPA Global Print Expo 2025, Europe's premier print industry event. Held 6–9 May at Messe Berlin, the show will bring together thousands of professionals from across the global print and signage sectors.

Visitors to the Sawgrass stand 2.2–B58 will experience live VersiFlex™ demonstrations, receive hands-on guidance from technical experts, and explore the full range of materials and surfaces the system supports.

"We've chosen FESPA for this global unveiling because the audience here understands innovation," said Thomas Kirschner. "VersiFlex™ is not just a product—it's a new way of thinking about decorating."

Smart, Sustainable, Scalable

VersiFlex™ meets the growing demand for eco-conscious and safe production. The system is built around non-toxic, non-carcinogenic ingredients that ensure peace of mind for both operators and end-users. Its design minimises waste through precise ink usage and an efficient transfer process, helping reduce environmental impact. With a compact, clean setup ideal for smaller workshops and urban production spaces, VersiFlex™ enables creators to work sustainably without sacrificing quality or versatility. Whether you're decorating promotional items, fashion apparel, or home goods, it supports a cleaner, more responsible workflow at every stage.

Seamless Integration & Support

VersiFlex™ works seamlessly within the existing Sawgrass ecosystem, including the MySawgrass design tool and the Sawgrass Print Utility software, and is fully compatible with all Sawgrass desktop printers using the VersiFlex™

set-up. With intuitive profile controls, plug-and-play functionality, and no steep learning curve, users can go from setup to production ready in just a couple of hours—making it easy to deliver professional-quality results, fast.

Ongoing customer support remains a cornerstone of the Sawgrass experience. VersiFlex™ users have access to dedicated live assistance, expert guidance, step-by-step tutorials, and a growing library of resources designed to optimise workflows across a variety of business types and materials.

Product Availability

VersiFlex™ will be available across Europe starting at the end of April 2025, following the official launch in the US, with broader rollout and shipping through regional distributors. European customers will benefit from extended cartridge formats optimised for the SG1000 platform—ideal for batch production and large-format projects.



For full specs, demos, and dealer information, visit sawgrassink.com/versiflex or speak to the team live at FESPA Berlin this May.

About Sawgrass

At Sawgrass, we believe in turning everyday moments into something personal, vibrant, and unforgettable — kind of like your favourite cup of coffee. For over 30 years, we've been crafting digital printing solutions that help creators, makers, and businesses bring their ideas to life.

Headquartered in Charleston, South Carolina, our team is proud to power small businesses and production shops in more than 200 countries around the world. Whether you're designing your first custom mug or launching your next product line, our technology makes it easy to create bold, lasting impressions — one press at a time. Visit www.sawgrassink.com.

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Gayatri Textile Machines	C-III	Sheeba Enterprise	13
Jaytex Engineers	*	Shree Ram Textile	*
Indian Dye Springs Co.	*	ShreeTex Corporation	16
Inspiron Engineering Pvt. Ltd.	*	Simta Group of Companies	7
Infinity Spare Tech	*	Spin Air Systems Coimbatore Pvt. Ltd.	*
ITMA ASIA+CITME 2025	*	Sri Kumaran Textile Systems	*
Indian Textile Accessories & Machinery Manufacturers Association	*	Sunrise Industries	*
Kubershwar Machine Products	*	Sumanlal J. Shah & Co.	*
Krsna Engineering Works	*	Sumanlal J. Shah Sons (P) Ltd	*
Lakhmi Machine Works Ltd	*	SRM Technologies	6
Laxmi Precision Technologies Limited	17	Srinivasa Tex Spares	12
Lakshmi Ring Travellers (CBE) Ltd.	*	Tech Mech Engineers	8
Laxmi Textile Products	*	Technocraft Texmach Pvt. Ltd.	*
Mag Solvics Private Limited	*	Techno Electronics & Instruments	*
Mangal Singh Brothers Pvt. Ltd.	5	Texlab Industries	*
Manoj Engineers	C-I	Texfair 2024	*
M.K. Spindle Manufacturers Pvt. Ltd	*	Tirupati Technik	22
Mohler Machine Works Pvt. Ltd.	*	Tex-Tech Industries Pvt. Ltd.	90
Mylon Metallics Pvt. Ltd.	*	Trutzschler India Pvt. Ltd.	75
Mayur Reeds and Healds Pvt. Ltd.	*	Vetri Engineers	10
		Vishwaa Engineering	*
		Varjilal Hirjibhai Trivedi & Sons	*

We are listing most common stressful events which majority Spinners are now facing. Here, we talk of one such event.

Theoretical and academic causes of poor yarn appearance are known to all spinners. But they are unaware...

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