TexSPACE Today
SUSTAINABILITY - PRECISION - AUTOMATION - CIRCULARITY - ENERGY
Volume 03, Issue 02, 60 Pages
February 2025
www.texspacetoday.com

How Blockchain Ensures Traceability in Fashion Supply Chain

Sustainability Updates *More at...5*
Precision Updates *More at...15*
Automation Updates *More at...32*
Circularity Updates *More at...40*
Energry Updates *More at...54*

TextileToday Bangladesh
An Innovation Hub

Media & Innovation Platform

1. The biggest industry network & communication platform for **branding & promotion**
2. More Than **750,000+** Monthly Website Page View
3. Paper, PDF & E-Magazine Reaches To About **300,000+** People Per Month.
4. Newsletter Circulation About **100,000** Database Per Week
5. More Than **300,000+** Social Media Engagement
6. Webinar Series For Technology/ Solutions Launching
7. Technology Piloting/Problem Solving Through Innovation Hub
8. Biggest Ever Academy - Industry Collaboration
9. PEOPLE Project For Increasing Profitability & Organization Build Up

Find Media Kit

+88 01775 999 748
monir@textiletoday.com.bd
www.textiletoday.com.bd

TexSPACE Today
SUSTAINABILITY - PRECISION - AUTOMATION - CIRCULARITY - ENERGY
Volume 03, Issue 02, 60 Pages
February 2025
www.texspacetoday.com

A Textile Today Innovation Hub publication.

Volume 03, Issue 02 (February 2025)

TexSPACE Today
SUSTAINABILITY - PRECISION - AUTOMATION - CIRCULARITY - ENERGY
Volume 03, Issue 02, 60 Pages
February2025
www.texspacetoday.com

Content

February 2025

6-8 | Can regenerative cotton farming solve fashion's environmental crisis?

9 | Gore-Tex faces lawsuit over alleged greenwashing claims

10-11 | Navigating changing EU regulations for fashion and textiles

12-13 | Outdoor industry leaders launch open-source tool to decarbonize textile mills

14 | Kraig Labs develops 'underwater' silk inspired by caddisfly

16-18 | How blockchain ensures traceability in fashion supply chain

19-21 | Fashion brands use AI & Big Data for hyper -personalization

22 | Pincroft expands military textile printing with £1.5mn investment

23-24 | Brand innovation strategies and digital fashion trends: The future of luxury retail

26-27 | VIATT 2025 to showcase textile excellence

28-29 | RH Corporation & SAS Enterprise to showcase cutting-edge innovations at DTG 2025

30 | Malvina Hoxha joins Hyosung as new US marketing director

31-32 | Functional textiles and sustainability to dominate intertextile shanghai 2025

33-34 | Textile automation market to hit $664mn growth by 2029

35-37 | EU-Backed METAMORPHOSIS project boosts turkish apparel sector

38-39 | How RFID and IoT Are Transforming Inventory Management in Fashion

41-43 | Which fashion brands are leading Net Zero race?

44 | Steven Bethell joins SMART board at historic dubai conference

45 | TotalEnergies and Mayer & Cie. partner on tixo stainless knitting machine oils

46 | 27 bangladeshi brands showcase innovation at Texworld Paris 2025

47 | Craig Ryan & Steven Clune join S&S activewear to lead canadian growth

48 | Reju & Cibutex join forces to build circular textile ecosystem

49 | Brightfiber launches amsterdam's first circular clothing recycling plant

50 | BOKSER partners with IAM to introduce CiCLO® to hospitality textiles

51 | UNIFI® consolidates madison facility into North & Central America

52 | ANDRITZ airlay line recycles glass wool for nonwoven insulation in France

53 | Verlo Mattress introduces convenient in-home comfort adjustments

55-56 | Taiwan turns textile sludge into energy

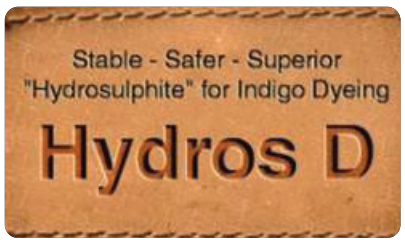
57-59 | Wearables that generate their own power

Top Tech Sustainability

Jay Chemical | Jakazol

Jakazol can be used in a variety of printing processes including Warm Exhaust, Hot Exhaust, Cold Patch Batch Dyeing, Pad Dye Thermofix among others. Reactive dyes are known to have superior fastness properties due to the molecular bonding that occurs during the dyeing process.

Silox (Dysin Group) | Hydros D

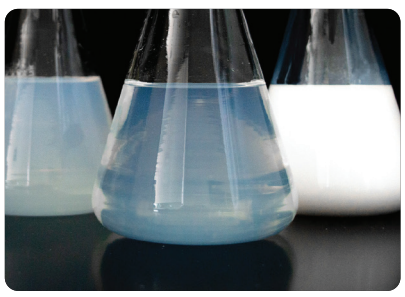


A Stable, Safer & Superior Hydrosulphite for Indigo Dyeing process from the stable of Silox. The product meets all relevant International Standards of sustainability such as EcoPasport, GOTS, ZDHC certifications.

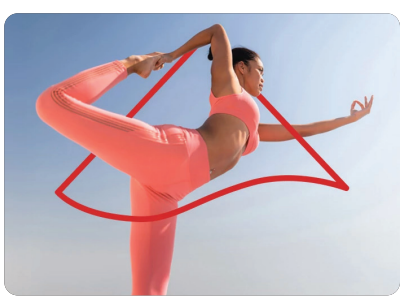
Archroma | Deep Dive 2.0

A complete system for maximum coloration efficiency with enhanced fastness, and dramatically reduced use of water, chemicals and energy

Apna Organic | Ludox ACA



» A Single Solution to Avoid and Prevent Crease Marks.
» Works in Pre-treatment and Dye Bath at an Optimum Dose.
» 100% Eco-friendly and Biodegradable.
» Works on 100% Cotton and Cotton/Polyester Blends.



Lycra

LYCRA® fiber adds premium stretch and recovery to most types of apparel, making garments more comfortable to wear — no matter how you move. When added to fabrics, LYCRA® fiber transforms garments into better-fitting, more durable clothes that move with your body, delivering fit, shape, and comfort that lasts.

Can regenerative cotton farming solve fashion's environmental crisis?

M A Mohiemen Tanim

Introduction

Cotton is one of the most widely grown crops in the world, with over 25 million tons produced annually. It is the backbone of the textile and apparel industry, providing livelihoods for millions of farmers. However, conventional cotton farming is resource-intensive, relying heavily on synthetic fertilizers, pesticides, and excessive water usage, contributing to soil degradation, biodiversity loss, and climate change.

As the global textile industry pushes toward sustainability, regenerative cotton farming has emerged as a promising alternative. Advocates argue that regenerative agriculture improves soil health, enhances biodiversity, captures carbon, and reduces dependency on chemical inputs. But can regenerative cotton replace conventional farming at scale? This article explores the potential, challenges, and industry adoption of regenerative cotton.

Understanding Regenerative Cotton Farming

Regenerative cotton farming is an

agricultural approach that restores soil health and promotes biodiversity while reducing synthetic inputs. Unlike conventional farming, which prioritizes yield maximization, regenerative agriculture focuses on soil enrichment, ecosystem balance, and long-term sustainability.

Key Principles of Regenerative Cotton Farming

Soil Health Improvement – Techniques such as cover cropping, crop rotation, and reduced tillage help enhance soil organic matter and microbial diversity.

Carbon Sequestration – By enhancing soil carbon storage, regenerative practices help mitigate climate change.

Reduced Chemical Inputs – Farmers minimize or eliminate synthetic fertilizers and pesticides, relying instead on natural pest control and organic compost.

Water Conservation – Techniques such as rainwater harvesting and mulching improve water retention and reduce irrigation needs.

Biodiversity Enhancement – Integrating agroforestry and intercropping promotes a healthier ecosystem and reduces pest outbreaks.

How Regenerative Cotton Differs from Conventional Cotton

Aspect	Conventional Cotton	Regenerative Cotton
Soil Management	Intensive tillage, chemical inputs	Cover crops, minimal tillage
Water Usage	High, often inefficient	Reduced, improved retention
Pest Control	Synthetic pesticides	Natural predators, biocontrols
Carbon Footprint	High due to fertilizers	Lower, carbon sequestration
Biodiversity Impact	Monoculture, biodiversity loss	Increased biodiversity
Cost Structure	High input costs	Lower input reliance, higher labor costs

Environmental and Economic Benefits of Regenerative Cotton

1. Soil Restoration and Climate Change Mitigation

Soil degradation is a major issue in conventional cotton farming, leading to reduced productivity over time. According to the United Nations, approximately 33% of global soils are degraded. Regenerative farming replenishes soil organic matter, improving fertility and resilience. Moreover, studies indicate that regenerative practices can sequester up to 3 metric tons of CO per hectare per year, helping combat climate change.

2. Water Efficiency and Drought Resistance

Cotton is a thirsty crop, consuming 2,700 liters of water to produce a single T-shirt. Regenerative farming improves soil structure, enhancing its ability to retain moisture. Techniques like

agroforestry and organic mulching can reduce water consumption by 30-50%, making cotton farming more resilient to droughts.

3. Reduced Input Costs and Higher Profit Margins

While conventional cotton farming requires expensive chemical inputs, regenerative cotton relies on natural solutions. Although transitioning requires an initial investment in soil restoration, studies suggest that farmers experience up to 20% savings on fertilizers and pesticides after a few years. Additionally, brands are willing to pay a premium for regenerative cotton, enhancing profitability.

4. Biodiversity Preservation

Regenerative farming fosters a healthy ecosystem by encouraging biodiversity. Fields that integrate cover crops and companion planting attract beneficial insects and pollinators, reducing the need for synthetic pesticides. This, in turn, improves crop resilience and yield stability.

Industry Adoption and Leading Initiatives

Several brands and organizations are championing regenerative cotton:

Patagonia's Regenerative Organic Cotton – The brand launched its Regenerative Organic Certified (ROC) cotton initiative to improve soil health and farmer livelihoods.

Kering's Regenerative Fund for Nature – A €5 million fund to support regenerative agriculture projects, including cotton farming.

Levi's Partnership with the Better Cotton Initiative (BCI) – Working to incorporate regenerative practices into the world's largest sustainable cotton program.

Inditex's Regenerative Cotton Pilot Program – Zara's parent company is investing in projects to transition conventional farms to regenerative practices.

Soil Health Institute's U.S. Cotton Project – A research-driven initiative promoting soil health and regenerative cotton farming in the U.S.

Can Regenerative Cotton Replace Conventional Farming?

The transition to regenerative cotton at a global scale is possible but requires a multi-stakeholder approach. Here's what needs to happen:

Government and Policy Support – Subsidies and incentives for farmers adopting regenerative practices.

Corporate Commitment – Large brands must pledge to source regenerative cotton and support supply chain development.

Read Full Article

Gore-Tex faces lawsuit over alleged greenwashing claims

A proposed class action lawsuit has been filed against W.L. Gore & Associates, the maker of Gore-Tex, alleging that its marketing on environmental sustainability may be misleading. The lawsuit, filed on February 11, 2025, in the U.S. District Court for the Eastern District of Washington, claims that while the company promotes its products as "Committed to Sustainability" and "Environmentally Sound," many of its items continue to be manufactured using PFAS—chemicals that have raised environmental and health concerns.

The 138-page complaint, brought forward by attorneys from Hagens Berman, suggests that the company's promotional materials and product labels may not fully disclose the continued use of PFAS in its manufacturing processes. According to the lawsuit, consumers who purchased Gore-Tex products between January 1, 2018, and December 31, 2024, might have been led to believe that they were buying environmentally friendly gear, when in fact, these products may still contain PFAS that can persist in the environment.

In response to these concerns, a spokesperson for W.L. Gore &

Photo: ©ozogama.lt

Associates stated that the company remains committed to environmental responsibility and that it continues to improve its product lines, including developing alternatives that reduce or eliminate the use of PFAS.

The lawsuit seeks both corrective measures to ensure that marketing claims accurately reflect product content and monetary compensation for consumers who may have been affected by these discrepancies. PFAS, often referred to as "forever chemicals" because of their persistence in nature, have been the subject of regulatory and scientific scrutiny due to potential adverse effects on health and the environment.

Consumers and regulators alike continue to call for greater transparency and accountability in environmental claims.

Navigating changing EU regulations for fashion and textiles

Robert Heymen

To enhance competitiveness and regain control over its supply chains, the European Union is refining its sustainability regulations. With a new parliament in place, the emphasis has shifted from sustainability as an end goal to sustainability as a means to boost European competitiveness.

The Evolution of EU Sustainability Regulations

The European Green Deal and the Strategy for Sustainable and Circular Textiles, introduced six and three years ago respectively, laid the groundwork for sweeping regulatory changes. Over the past two years, the EU has introduced a flurry of regulations focusing on ecodesign, waste management, forced labor, digital product passports, and supply chain transparency.

Competitiveness Over Compliance?

A major catalyst for this shift was the September 2024 report by former European Central Bank president Mario Draghi, which highlighted Europe's

declining competitiveness compared to other global players, particularly the U.S. The report pointed out that Europe has struggled to capitalize on technological advancements and remains vulnerable due to dependencies on foreign suppliers.

As a response, the EU has introduced the Competitiveness Compass, a roadmap aimed at restoring economic dynamism. One key element is an omnibus simplification package designed to reduce administrative burdens for businesses by 25% for larger firms and 35% for SMEs. Three major regulations currently under review include:

» **Corporate Sustainability Reporting Directive (CSRD)**

» **Corporate Sustainability Due Diligence Directive (CSDDD)**

» **EU Taxonomy**

While simplification aims to reduce bureaucracy and boost competitiveness, concerns have been raised that loosening regulations could dilute sustainability efforts.

Implications for the Fashion and Textile Industry

For the fashion and textile sector, these regulatory adjustments present both challenges and opportunities:

Supply Chain Transparency & Digital Product Passports: The push for traceability remains strong, meaning companies must still invest in digital product passports and sustainable supply chain management.

However, the regulatory uncertainty may slow down long-term investments in these systems.

Sustainability as a Competitiveness Tool: Businesses that align sustainability with innovation and efficiency will likely benefit from policy incentives.

The EU is expected to provide support for clean industrialization and localized production.

Compliance Uncertainty: Companies that have already invested in compliance frameworks now face a moving regulatory landscape.

Engagement strategies include:

Joining Policy Hubs: Organizations like The Policy Hub act as bridges between policymakers and industry players.

Participating in Public Consultations: These provide direct input into regulatory decisions.

Forming Stronger Industry Coalitions: Unlike other industries, fashion has historically lacked a unified lobbying force.

Developing In-House Public Affairs Teams: As regulations become a central issue, brands are increasingly investing in dedicated public affairs departments.

Outdoor industry leaders launch open-source tool to decarbonize textile mills

Leading outdoor industry brands have launched the Textile Heating Electrification Tool, an open-source resource aimed at helping textile mills reduce emissions by transitioning to efficient electric heating technologies. This initiative is the result of a collaboration between Cotopaxi, L.L. Bean, New Balance, Patagonia, REI Co-op, W.L. Gore & Associates, Global Efficiency Intelligence, and the Outdoor Industry Association (OIA). Developed under OIA's Clean Heat Impact CoLab, the tool marks a significant step toward decarbonizing textile manufacturing and supporting industry-wide climate goals.

The textile and apparel sector contributes approximately 2% of global greenhouse gas (GHG) emissions, with rising consumer demand intensifying environmental challenges. The new tool equips industry leaders with key insights to replace fossil fuel-based heating systems with sustainable electric alternatives, aligning with broader sustainability commitments.

Key Features of the Tool

The Textile Heating Electrification Tool includes:

» Data management system to track energy consumption and emissions.

»Modeling and simulation module to assess potential benefits.

» Implementation checklist for transitioning to electric heating.

» Manufacturer and supplier finder to connect mills with technology providers.

The tool was developed based on the findings of the 2023 Electrification of Heating in the Textile Industry study, which highlighted the potential for electric heating technologies to reduce emissions and costs. Following extensive beta testing with nominated textile facilities, the tool was refined to ensure practical applicability.

Industry Leaders Endorse the Initiative

Andrew Dempsey, Director of Climate at REI, emphasized the importance of industry collaboration, stating, "Electric heat technologies are crucial for decarbonizing textile manufacturing. This tool provides valuable information to accelerate decision-making on decarbonization investments."

Kim Drenner, Head of Environmental Impact at Patagonia, noted Patagonia's ongoing partnership with OIA since 2021, saying, "This tool supports suppliers in identifying electrified technology to replace fossil fuel-based heat systems. It wouldn't be possible without OIA's collaborative efforts."

Markus Wieser, Climate Team Leader at W.L. Gore & Associates, highlighted the tool's impact, stating, "By shortening the due diligence process for implementing electric manufacturing equipment, this tool can significantly accelerate supply chain decarbonization."

A Collective Effort for Sustainability

OIA's Impact CoLabs serve as a pre-competitive innovation platform, enabling brands and suppliers to collaborate efficiently on sustainability goals. By providing clear, data-driven pathways to electrification, this tool serves as a blueprint for reducing carbon emissions across the textile supply chain.

Kraig Labs develops ‘underwater’ silk inspired by caddisfly

Kraig Biocraft Laboratories, Inc. , a leader in advanced silk fiber technologies, has introduced a groundbreaking development—engineered silk inspired by the caddisfly. This breakthrough represents a significant advancement in fiber technology, offering new possibilities for high-performance materials across various industries.

Caddisflies, often referred to as “Periwinkles” in the Pacific Northwest, are known for their ability to spin silk underwater, which they use to create protective casings in aquatic environments. By leveraging the distinctive mechanical and chemical attributes of caddisfly silk proteins, Kraig Labs has developed a novel silk material designed for enhanced durability in wet conditions. This innovation has the potential to support applications in medical adhesives, biomedical textiles, performance apparel, and next-generation fiber technologies.

Kim Thompson, CEO and Founder of Kraig Labs, emphasized the significance of this development. “Expanding beyond spider silk proteins allows us to explore a wider range of possibilities in silk engineering,” he stated. “By drawing

from nature’s diversity, we are creating innovative fibers that align with the evolving needs of modern industries.” The introduction of caddisfly-based transgenic fiber represents a key milestone in Kraig Labs’ mission to develop superior materials by combining the unique properties of various silk proteins.

Jon Rice, COO of Kraig Labs, acknowledged the contributions of the company’s scientific team. “Our success in developing this caddisfly-inspired material reflects the power of combining innovative research with a clear vision,” he noted. “We are excited about the potential applications of this fiber and the opportunities it presents across multiple industries.”

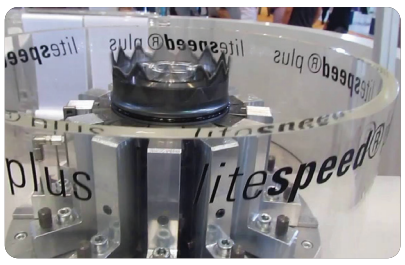
Kraig Labs has filed a provisional utility patent for this pioneering technology as part of its commitment to leading advancements in silk protein engineering.

Top Tech Precision

CHT | Bezaktv Soaping Advisor

The “BEZAKTIV Soaping Advisor” calculation program provides a predictive calculation of the fastness rating, which allows the optimum rinsing process to be determined and subsequently used

Groz Beckert | Litespeed® plus



Litespeed® plus by Groz-Beckert is an innovative needle for circular knitting machines, designed to enhance efficiency and sustainability. Its lighter shaft and optimized groove geometry reduce friction, lower machine temperatures, and cut energy consumption by up to 20%. This results in faster knitting speeds, extended needle life, and consistent stitch quality, making it ideal for high-speed operations while supporting eco-friendly and cost-effective textile production.

Rapid (Dysin) | Robot Doser

Rapid Robot Doser, supplied by Dysin Group, is an advanced automatic laboratory pipetting system designed to enhance efficiency and precision in textile dyeing laboratories. It integrates stock solution preparation, mixing, and pipetting based on a gravimetric measurement system. Utilizing a robotic X-Y-Z axis mechanism powered by servo motors, it ensures accurate and repeatable dye bath preparations. The system offers models accommodating 80, 120, or 160 solution bottles, each with precise electronic balances and user-friendly software interfaces.

Tsudakoma | Water Jet Loom

» Higher Efficiency – 10% increase in loom RPM.

» Eco-Friendly – 10% less water use & 70% less grease in drainage.

» Advanced Technology – UH nozzle, FDP-A IV W storage, & let off beam brake.

How blockchain ensures traceability in fashion supply chain

A. Peter Tessa

The fashion industry has long struggled with challenges related to supply chain transparency, counterfeiting, and ethical sourcing. With the rise of fast fashion and globalized production networks, it has become increasingly difficult to track the journey of a garment from raw materials to finished product. Enter blockchain technology—a decentralized digital ledger that offers an immutable and transparent record of transactions. By integrating blockchain into the fashion supply chain, brands can ensure authenticity, combat counterfeits, and enhance traceability.

This article explores how blockchain is transforming the fashion industry by improving transparency and preventing counterfeit goods from entering the market. We will also analyze real-world applications and the future prospects of this technology.

Understanding Blockchain Technology

Blockchain is a distributed ledger technology (DLT) that records transactions in a secure, transparent, and tamper-proof manner. Each block in the chain contains a set of transactions, and once recorded, they cannot be altered without the consensus of all network participants. This makes blockchain an ideal solution for industries like fashion, where traceability and authentication are crucial.

Key Features of Blockchain:

Decentralization: Unlike traditional databases managed by a central

authority, blockchain operates on a peer-to-peer network, reducing the risk of data manipulation.

Immutability: Once a record is added to the blockchain, it cannot be altered, ensuring data integrity.

Transparency: All transactions are recorded on a public ledger, allowing stakeholders to verify the authenticity of goods.

Smart Contracts: These self-executing contracts automate and enforce agreements between parties, reducing intermediaries and increasing efficiency.

Combating Counterfeits with Blockchain

The global counterfeit fashion market is estimated to be worth over $500 billion annually. Fake goods not only harm brands financially but also exploit workers and deceive consumers. Blockchain offers a robust solution to tackle counterfeiting through product authentication and verification.

How Blockchain Prevents Counterfeiting:

Unique Digital Identities: Each product can be assigned a digital identity (NFTs, QR codes, or RFID tags) recorded on the blockchain.

Consumer Verification: Customers can scan QR codes or RFID tags on garments to verify authenticity and access information about the product's origin, materials, and production process.

Brand Protection: By ensuring every transaction is recorded on the blockchain, brands can trace stolen or unauthorized goods, reducing the proliferation of counterfeit items.

Case Study: LVMH's AURA Blockchain

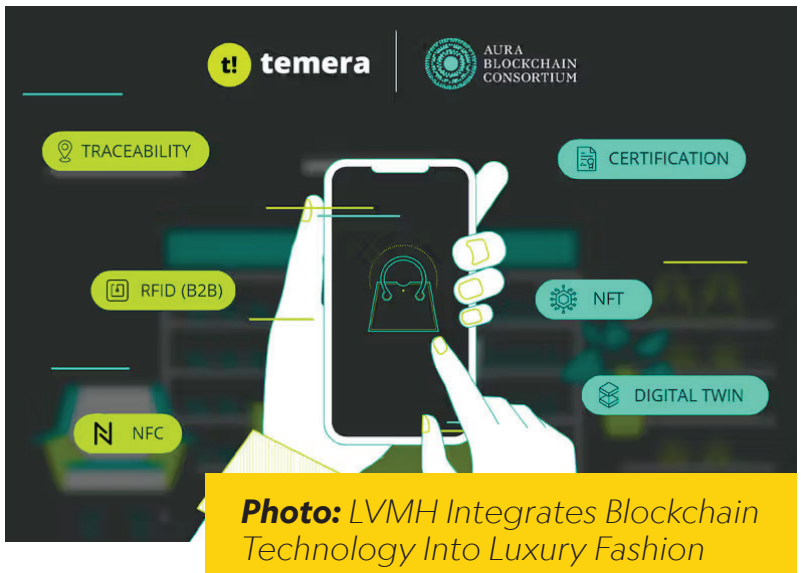


Photo: *LVMH Integrates Blockchain Technology Into Luxury Fashion*

LVMH, the parent company of luxury brands like Louis Vuitton and Dior, launched AURA, a blockchain platform that allows customers to verify the authenticity of luxury items. This system assigns a digital certificate to each product, offering an immutable record of its journey from production to sale.

Enhancing Supply Chain Transparency

Modern supply chains are complex, involving multiple stakeholders across different regions. Blockchain provides end-to-end visibility, ensuring ethical sourcing, sustainable production, and compliance with labor laws.

Benefits of Blockchain in Supply Chain Management:

Raw Material Verification: Blockchain

records can track the origin of raw materials (e.g., organic cotton, ethical leather) to ensure sustainability and fair trade.

Real-Time Tracking: Retailers and consumers can access real-time data about product movement, reducing supply chain inefficiencies.

Sustainability Assurance: Brands can prove their commitment to sustainable practices by making their supply chains publicly verifiable.

Reduction in Fraud and Theft: Blockchain's secure and immutable nature prevents unauthorized changes, reducing fraud risks.

Example: Provenance and Stella McCartney

Provenance, a blockchain-based platform, partnered with Stella McCartney to track the ethical sourcing of viscose fabric. Consumers can scan a product's tag to view its entire supply chain history, reinforcing the brand's commitment to sustainability.

Blockchain and Ethical Labor Practices

Fashion supply chains often involve unethical labor practices, including sweatshops and child labor. Blockchain can be used to enforce fair wages and ethical working conditions by providing transparent payroll records and verifying compliance with labor laws.

Case Study: Bext360 in Ethical Cotton Sourcing

Bext360 uses blockchain to track cotton production in Africa, ensuring fair payments to farmers and preventing exploitative labor practices. Each transaction is recorded on the blockchain, allowing brands to verify the ethical sourcing of their materials.

The Future of Blockchain in Fashion

Integration with IoT and AI: Combining blockchain with the Internet of Things (IoT) and Artificial Intelligence (AI) will enhance data collection and analysis, further improving supply chain efficiency.

Expansion of NFT Fashion: Non-Fungible Tokens (NFTs) can be used to verify digital ownership of luxury fashion items in the metaverse.

Government Regulations and Standards: Governments may introduce regulations that encourage blockchain adoption for ethical sourcing and anti-counterfeiting.

Consumer Demand for Transparency: With growing consumer awareness, brands that fail to adopt blockchain-based transparency solutions may lose credibility.

Fashion brands use AI & Big Data for hyper -personalization

Robert Heymen

Introduction

The fashion industry is experiencing a transformation with the rise of hyper-personalization, where AI-driven customization and consumer-driven design are redefining the way clothing is made, marketed, and sold. With advancements in artificial intelligence, machine learning, and big data analytics, fashion brands are now able to create highly individualized shopping experiences, tailored clothing, and real-time recommendations that align with consumer preferences. According to a McKinsey report, 71% of consumers now expect personalized interactions, while brands that implement personalization effectively can see revenue increases of 10-15%.

The Rise of Hyper-Personalization in Fashion

Traditionally, fashion personalization meant monogrammed initials or tailored fits, but today's hyper-personalization extends far beyond. With AI and data analytics, brands can analyze real-time consumer data, including:

» Purchase history and shopping behaviors

» Social media interactions and trending styles

» Body measurements and fit preferences

» Climate and location-based insights

» User-generated content and reviews

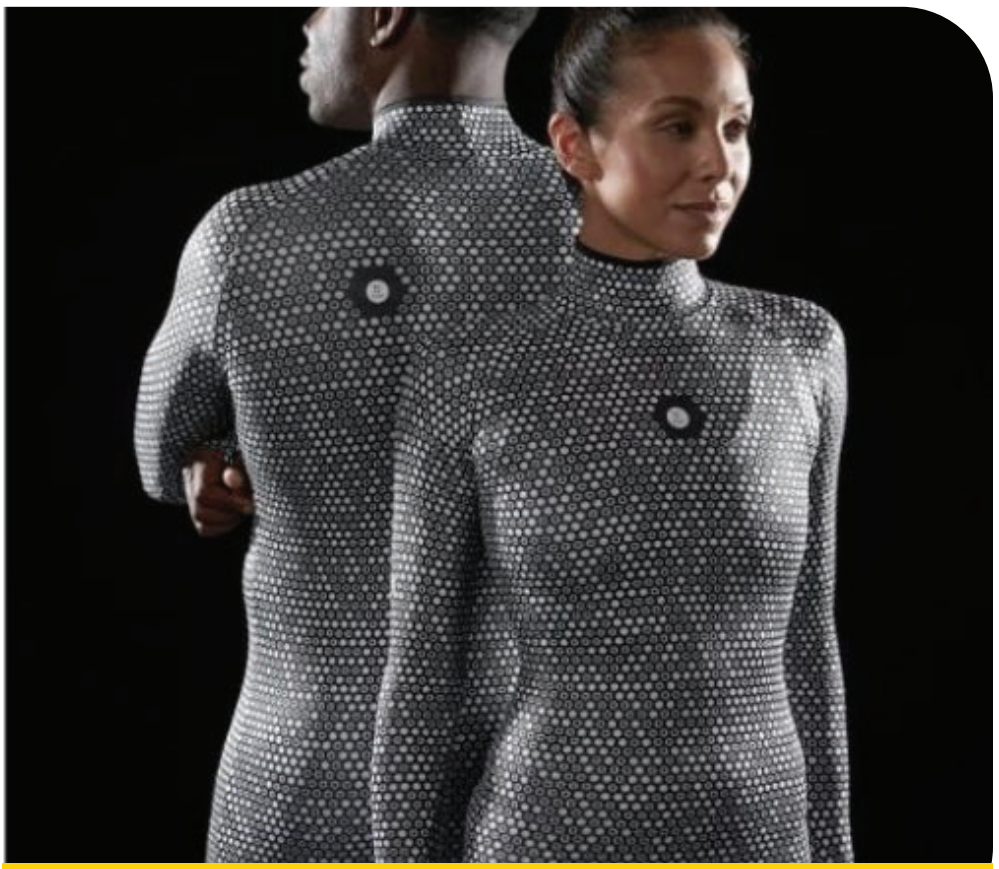


Photo: *ZOZOSUIT, the Suit with an Integrated 3D Body Scanner*

How AI-Driven Customization Works

1. AI-Powered Style Recommendations

Fashion brands use AI to analyze customer preferences and suggest products tailored to individual styles. Amazon Fashion's "StyleSnap" allows users to upload images and receive AI-driven suggestions based on similar styles and trends.

2. 3D Body Scanning and Virtual Fitting

Brands like Zozotown and Unspun utilize 3D body scanning to offer custom-fit clothing. With the rise of smart mirrors and mobile-based measurement technology, brands can collect precise body dimensions, reducing sizing inconsistencies and return rates.

3. Data-Driven On-Demand Manufacturing

AI helps brands predict trends and manufacture products based on real-time demand. Nike's "Nike By You" platform allows customers to personalize sneakers based on color, material, and fit, cutting down on overproduction and waste.

4. AI-Generated Fashion Designs

AI can analyze consumer data to create clothing designs that align with personal tastes. H&M and Zara use AI to optimize design processes, ensuring collections resonate with customers before they hit the shelves.

5. Personalized Subscription Services

Brands like Stitch Fix and Nordstrom's Trunk Club use AI stylists to curate personalized fashion boxes based on customer profiles, enhancing convenience and engagement.

The Consumer-Driven Design Movement

Hyper-personalization is not just about AI; it's also about giving consumers a voice in the design process. Brands are adopting consumer-driven design through:

Crowdsourced Fashion: Companies like Betabrand allow customers to vote on new designs before they go into production.

Customization Platforms: Levi's and Adidas offer interactive customization tools where users can modify denim washes, sneaker colors, and more.

Sustainability-Driven Personalization: Some brands, like Pangaia, create bioengineered fabrics that adapt to consumer feedback on sustainability preferences.

Impact on the Fashion Industry

Hyper-personalization is creating a seismic shift in fashion, influencing:

Supply Chain Optimization: AI reduces overproduction by aligning production with actual demand.

Consumer Loyalty: Personalized experiences lead to higher retention rates, with 80% of shoppers more likely to buy from brands offering customization (Epsilon data).

Reduced Returns: Proper fit prediction decreases online fashion returns, which currently account for 30-40% of e-commerce orders.

Sustainability Benefits: Data-driven production minimizes fabric waste, aligning with the industry's sustainability goals.

Challenges and the Future of Personalization

Despite its advantages, hyper-personalization faces key challenges:.

Privacy Concerns: Consumers are increasingly cautious about data collection.

Cost and Scalability: Implementing AI-powered personalization requires significant investment.

Balancing Creativity with Automation: Over-reliance on data may hinder traditional fashion creativity.

Looking ahead, the future of fashion personalization will likely integrate blockchain for secure data handling, AI-powered circular fashion, and real-time virtual styling assistants for an even more immersive shopping experience.

Pincroft expands military textile printing with £1.5mn investment

Photo: *(L-R) John Vareldzis (CEO), Sir Lindsay Hoyle MP, Maria Eagle MP, Mike Collins (MD)*

Military fabric printer, dyer, and finisher Pincroft has strengthened its position as a leading manufacturer of camouflage textiles with a significant £1.5 million investment in state-of-the-art rotary printing technology. The expansion was celebrated on February 10, 2025, with a high-profile visit from UK government officials, marking a major step forward for the company and British manufacturing.

The event saw the presence of Sir Lindsay Hoyle MP, Speaker of the House of Commons and MP for Chorley, alongside Maria Eagle MP, Minister of State for Defence Procurement and Industry. Pincroft's CEO John Vareldzis and Managing Director Mike Collins welcomed the officials, who participated in a symbolic ribbon-cutting ceremony in front of company directors and industry guests.

Sir Lindsay Hoyle emphasized the investment's significance, stating, "This is a major investment creating high-quality jobs, but most of all, producing the best camouflage in the world right here in Adlington." Maria Eagle MP highlighted the importance of maintaining local control over the intellectual property behind military uniform design, reinforcing the UK's sovereign strength.

The investment includes the installation of a Rotascreen TG by Austrian manufacturer Zimmer, featuring 12 printheads and a magnet system for greater precision, faster reorders, and uniform coverage. Additionally, Pincroft has brought screen-making in-house with the SPGPrints bestLEN direct rotary engraving system, enhancing production flexibility, creativity, and speed.

John Vareldzis commented on the strategic significance of the expansion, noting that it not only positions Pincroft to meet evolving customer demands but also opens opportunities for new markets and lighter fabrics. Mike Collins added that the new equipment has increased the company's annual production capacity to over eight million metres, ensuring it is well-prepared to meet growing global demand.

Brand innovation strategies and digital fashion trends: The future of luxury retail

A. Peter Tessa

Photo: *Chanel Make Their First Metaverse Move For Virtual Reality Experience 'Le Bal de Paris'*

In the rapidly evolving world of luxury fashion, innovation is no longer an option—it's a necessity. Leading brands such as Gucci, Hugo Boss, and Versace are pushing the boundaries with augmented reality (AR), virtual reality (VR), and digital product strategies, reshaping the consumer experience. The latest Vogue Business Index highlights key shifts in brand innovation strategies and emerging digital fashion trends that are redefining the industry.

The Shift Toward Virtual and Augmented Reality

Luxury brands are increasingly investing in immersive digital experiences to engage tech-savvy consumers. Gucci has maintained its innovation leadership with cutting-edge virtual activations, while Versace and Hugo Boss have made significant strides in this domain.

Hugo Boss's 'Planet Hugo' Activation on Roblox: This virtual world promotes its denim collections through interactive experiences, engaging younger audiences in a gamified setting.

Versace's Mercury Sneakers in Fortnite: By launching digital versions of its sneakers in the Fortnite metaverse, Versace has successfully merged gaming with fashion, capturing the attention of Gen Z consumers.

Chanel's 'Le Bal de Paris' Virtual Experience: A multisensory VR activation featuring full-body tracking and high-fashion immersion, positioning Chanel at the intersection of culture and technology.

With the rise of devices like Apple Vision Pro, brands are leveraging new infrastructure to create hyper-realistic VR storytelling, making digital fashion more engaging than ever.

The Rise of Digital Product Passports (DPPs) and Traceability

Sustainability and transparency are becoming critical components of brand innovation. The European Union's upcoming legislation will mandate

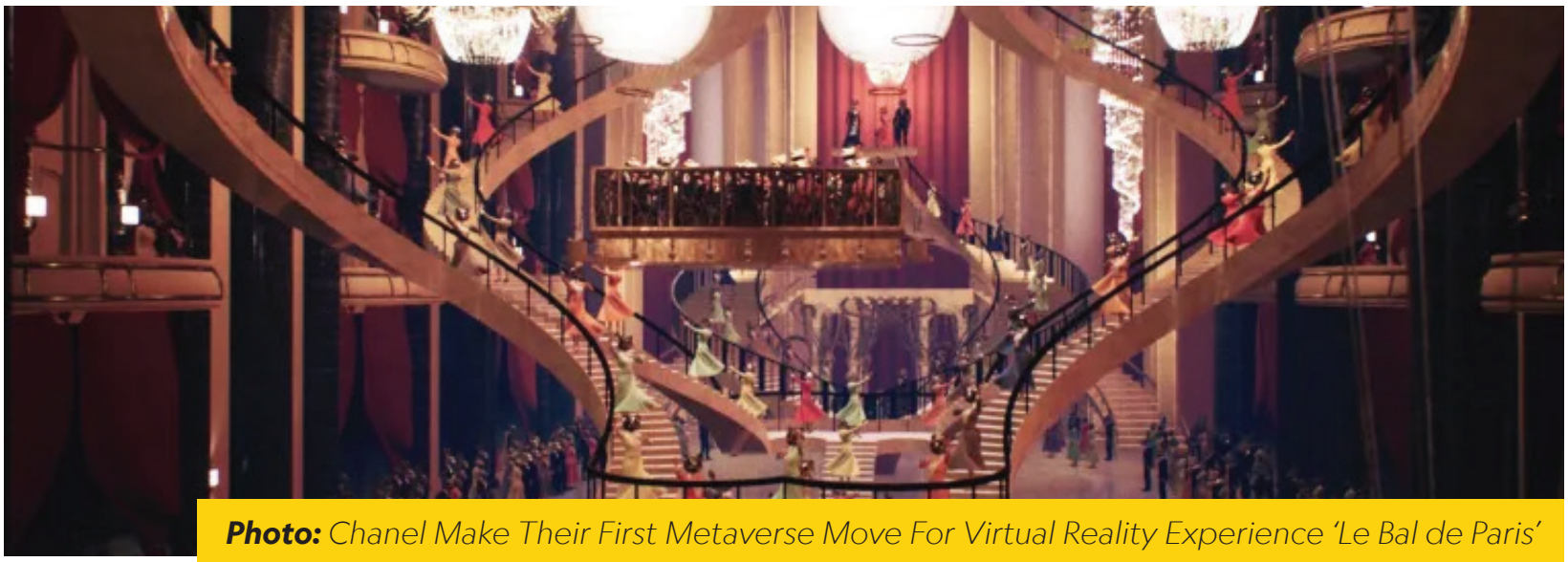


Photo: *Chanel Make Their First Metaverse Move For Virtual Reality Experience 'Le Bal de Paris'*

digital product passports (DPPs) for luxury goods by 2026, compelling brands to rethink their supply chain visibility.

Blockchain for Authenticity & Sustainability: Brands like Louis Vuitton and Coach are integrating blockchain-based DPPs to authenticate products, track sustainability metrics, and enhance resale potential.

NFT-Enabled Loyalty Programs: Hugo Boss has launched NFTs that reward customer engagement and offer exclusive experiences, blurring the line between digital ownership and real-world benefits.

Made-to-Order for Sustainability: Armani and Etro are investing in personalized tailoring services to reduce waste and elevate luxury experiences, shifting away from mass production.

Fluctuating Interest in NFTs and Digital Collectibles

While NFT hype has cooled in some sectors, brands like Louis Vuitton and Hugo Boss are integrating digital collectibles with exclusive physical products, offering phygital (physical + digital) experiences. Louis Vuitton's Via NFT project, which allows token-gated access to luxury varsity jackets, is a prime example of this trend. Despite challenges in NFT market stability, luxury brands continue to explore Web3 strategies to maintain exclusivity and customer engagement.

The Future: Seamless Integration of Digital and Physical Fashion

The success of digital fashion lies in its ability to create seamless transitions between online and offline experiences. Whether through AR-powered try-ons, interactive metaverse spaces, or blockchain-based authentication, luxury brands are positioning themselves at the forefront of innovation. As new technologies evolve, the integration of AI, Web3, and extended reality (XR) will further redefine fashion retail, offering unprecedented personalization and engagement.

In an industry that thrives on exclusivity and storytelling, those who successfully embrace digital transformation will continue to set the standard for the future of luxury fashion.

DTG

The 19th Dhaka Int'l
Textile & Garment
Machinery Exhibition

20 - 23 February 2025

ICCB | Dhaka, Bangladesh

HALL 1A BOOTH 107
HALL 6 BOOTH 219

RHCORP™

SASENTERPRISE

VIATT 2025 to showcase textile excellence

Robert Heymen

As the new year unfolds, Vietnam's textile industry stands on the brink of a significant milestone: surpassing Bangladesh to become the world's second-largest garment exporter, behind China. This development sets the stage for the Vietnam International Trade Fair for Apparel, Textiles, and Textile Technologies (VIATT), scheduled for 26 – 28 February 2025, where sustainability and innovation will take center stage.

China-Vietnam Collaboration Strengthens

Chinese manufacturers are increasingly viewing Vietnam as a strategic investment destination under the China Plus One strategy. In October 2024, the two countries signed 10 agreements to boost cooperation, including mutual recognition between customs agencies and cross-border QR code payments. VIATT 2025 will capitalize on this trend, welcoming leading Chinese suppliers from the entire textile value chain.

Apparel Fabrics, Yarns & Fibres, and Garments

Supertex Int'l Jiangyin Jiaxiang Trading: A leader in vertical fashion supply chain services, providing fabric development and digital solutions for visitor registration, intelligent workshops, virtual fitting, and online ordering.

Tenglong Textile: Specializing in polyester-based fabrics like pongee, stretch fabric, and oxford cloth, manufactured in Vietnam for jackets, outdoor gear, and travel bags.

Other notable suppliers: Foshan Shi Recoton Textile, Heng Li String and Braid (Shanghai), Idole Trading, and Zhangjiagang VCARE Textile.

Home & Contract Textiles

Shanghai Donglong Hometextile Products: Known for down materials and home textiles with a strong global presence.

Jiangsu Etex Textile Corp: Focuses on high-end home textiles, with international certifications like OEKO-TEX®, GOTS, BSCI, and ISO.

Frontever Home Vietnam Company: A major exporter and supplier for Walmart, Amazon, Disney, and Carrefour, with a robust supply network in Southeast Asia.

Nanjing Heniemo Home Textiles: Operates a vast manufacturing cluster producing bedding sets, curtains, blankets, and more.

Additional exhibitors: Changxing Dacheng Light Textile, Huzhou Yilai Textile, Muye Home Fashion Vietnam, Pearl Comfort, and Zhejiang Guzi Textile.

Technical Textiles, Nonwovens & Textile Technologies

Jiangsu Yingyang Nonwoven Machinery: The largest nonwoven machinery manufacturer in China, with production lines installed in 77 countries.

CTA Hi-Tech Textiles: Produces multifunctional fibre-based composites, including TPU fabrics and films for diverse industries such as automotive, medical care, and aerospace.

Other suppliers: Livite (Wuxi) High Polymer Materials, Rufong Machinery (Zhengzhou), Zhejiang Jinqian New Material, and Zhejiang Kingsafe Hygiene Materials Technology.

Sustainability at the Forefront

The inaugural Econogy Hub at VIATT 2025 will spotlight eco-fabrics and certifications, connecting industry players with traceable, sustainable solutions. The hub will feature global exhibitors like Cradle to Cradle Innovation Institute (Netherlands), Global Organic Textile Standard (Germany), Hohenstein (Germany), IDFL Laboratory and Institute (USA), and The Woolmark Company Pty Ltd (Australia).

Event Details

VIATT 2025: 26 – 28 February 2025, organised by Messe Frankfurt (HK) Ltd and the Vietnam Trade Promotion Agency (VIETRADE). More information: www.viatt.com.vn I Email: viatt@hongkong.messefrankfurt.com

RH Corporation & SAS Enterprise to showcase cutting-edge innovations at DTG 2025

SAS ENTERPRISE

SAS Enterprise will be showcasing a range of advanced printing and sustainable solutions at Hall 1A, Booth 107. Visitors to their booth can expect to see cutting-edge technology for high-quality, efficient garment printing through their Direct to Garment Printing Solutions. They will also present innovative methods for transferring designs onto various materials with their Direct to Film Printing Solutions. Additionally, SAS Enterprise will display advanced

Aziz Group, a pioneer in the textile industry of Bangladesh for over 50 years, is set to make a significant impact at the upcoming Dhaka International Textile & Garment Machinery Exhibition (DTG) 2025. The event, scheduled from February 20-23, 2025, at the International Convention City Bashundhara (ICCB). The exhibition will be presided over by two of Aziz Group's prominent sister concerns, RH Corporation and SAS Enterprise.

equipment for precise and durable screen printing, along with tools and chemicals designed to enhance the efficiency and longevity of screen printing equipment. New print head cleaning and maintenance solutions will be highlighted to ensure optimal performance and extended lifespan of printing heads. Furthermore, RH Corporation will introduce environmentally friendly dyes and chemicals aimed at reducing the ecological footprint of textile production, alongside new projects focused on promoting sustainability within the industry.

RH Corporation will present a variety of innovative recycling and sustainable textile solutions at Hall 6, Booth 219. Their booth will feature state-of-the-art machinery for recycling cotton waste into reusable materials, as well as advanced systems for processing non-woven textile waste.

Visitors will also learn about a new, sustainable fiber option derived from wood pulp, and eco-friendly yarns made from polylactic acid, a renewable resource. Additionally, RH Corporation will showcase a groundbreaking material that combines the durability of polyester with the benefits of compostability, emphasizing their commitment to driving the Bangladeshi industry towards sustainability.

Apart from all these innovation, RH Corporation is set to make a difference with their newest products featuring special fabric finishes that imitate the CO2 absorption capabilities of trees, mitigating the emission of greenhouse gas and addressing the issue of global warming. The DTG 2025 exhibition is a key event in South Asia's textile machinery market. Aziz Group's participation highlights their commitment to innovation and sustainability. Industry leaders are invited to explore these advancements.

For further inquiries, you can contact RH Corporation & SAS Enterprise at their corporate office located at 3rd Floor, 240, Tejgaon C/A, Dhaka-1208, Bangladesh. You can also reach them via email at info@rhcorp.com.

Malvina Hoxha joins Hyosung as new US marketing director

Hyosung TNC has appointed Malvina Hoxha as its new US Director of Marketing to strengthen its business presence in the US market.

In her new role, Ms. Hoxha will oversee Hyosung's US marketing initiatives, focusing on the promotion of the company's specialty fibers and fabrics to major brand and retail accounts. She will also lead joint development and promotional programs with key industry partners to enhance Hyosung's market reach.

With extensive experience in the textile, fashion, and retail sectors, Ms. Hoxha has held strategic positions in business development, marketing, and sourcing for renowned companies such as Ralph Lauren, Lenzing Tencel, and Chargeurs. She holds a business degree from the Fashion Institute of Technology (FIT) and an MBA certificate from Cambridge Judge Business School, specializing in circular economy and sustainable business models.

> ***"Malvina brings a wealth of resources to our team. Her deep understanding of product development, branding, and consumer needs will further solidify our position as a leading textile solutions provider in the US."***
>
> **Sora Yoo**
> Hyosung Chief Marketing Officer

Hyosung operates in over 29 countries with 77 cities and 119 business sites, ensuring strong local support across the global supply chain. The company's Fashion Design Center (FDC) forecasts trends and develops fabric concepts, while the Global Brand Marketing Team collaborates with brands and retailers to drive product development and consumer engagement.

Functional textiles and sustainability to dominate intertextile shanghai 2025

Intertextile Shanghai Apparel Fabrics Spring Edition 2025, taking place from March 11-13 at the National Exhibition and Convention Center, will spotlight over 3,000 exhibitors from across the globe, highlighting functional textiles and sustainability. With increasing consumer demand for eco-conscious products, the textile industry is taking significant steps toward adopting sustainable practices, including the growing use of recycled materials and bio-based fibers in functional textiles.

Key to this focus on sustainability are the dedicated zones: Econogy Hub and Functional Lab. The Econogy Hub, returning from last year's successful Autumn Edition, will feature companies that have passed the Econogy Check, a certification recognizing green credentials. New this year, Functional Lab's The CUBE will present curated, on-trend functional fabrics that blend innovation and sustainability.

Major players, such as 3M China Limited and Henglun Textile (Vietnam) Co Ltd, will showcase products that marry performance with environmental consciousness. 3M's Thinsulate Insulation, for example, is a lightweight, warm microfiber available in varying levels of recycled content, while Henglun specializes in sustainable knitted fabrics.

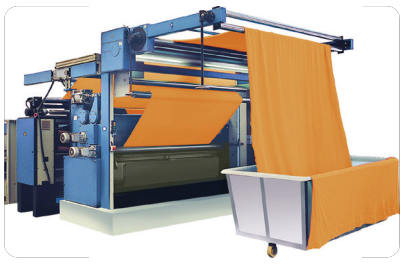
Photo: *(L-R) John Vareldzis (CEO), Sir Lindsay Hoyle MP, Maria Eagle MP, Mike Collins (MD)*

Sustainability remains at the forefront for other exhibitors like Eastman Chemical Company, with its Naia™ Renew fiber made from sustainably sourced wood pulp and recycled materials, and Esquel Enterprises Ltd., which is committed to reaching net-zero emissions by 2050. The fair also hosts major certifiers and testing institutes, such as Ecocert and Hohenstein, underscoring the industry's push for transparency and traceability.

The fair is co-organized by Messe Frankfurt (HK) Ltd, the Sub-Council of Textile Industry, CCPIT, and the China Textile Information Centre. The event will run alongside other key industry shows, including Yarn Expo Spring and Intertextile Shanghai Home Textiles.

For more information on the fair, visit: www.intertextileapparel.com.

Top Tech Automation



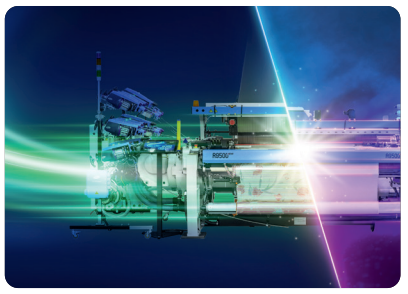
FONG's | Monfongs 828

MONFONGS 828 TwinAir is based on the design of Monforts advanced technology to match the requirements of all kinds of fabric. It can be used for dehydration, finishing, drying, curing and heat-setting of knitted fabric, woven fabric and non-woven fabric.

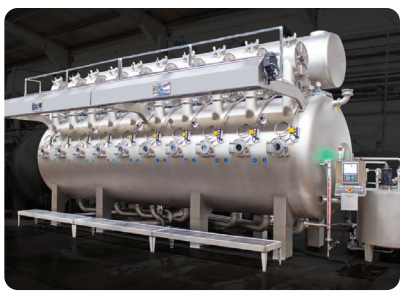
Fadis | FAPP Winder for Elastic Yarns

Fapp™ (FAdis Precision Package), a low density package that is a perfect preparatory solution to then dye elastic yarns.The allows for wide retraction margins of the yarn during the dyeing phase.With the SINCRO FFM - PREMIUM and SINCRO T FFM - PREMIUM machines, it is possible to produce FAPP™ packages (FAdis Precision Package) with a low density.

itema | R9500² Rapier Weaving Machine



The R9500² offers unmatched energy efficiency, superior fabric quality, and an optimized user experience. With advanced weft transfer, sturdy structure, and innovative tech like iMANAGER, it ensures top performance, reliability, and ease of use—perfect for modern, high-speed weaving.



ides | H.T. Multi-Plus Fabric Dyeing Machine

H.T. Multi-Plus Fabric Dyeing Machine which has been designed for all types of fabrics from the lightest fabrics till heaviest fabric. At the present time one of the most common and improtant problems of the World is saving water. The H.T. Multi-Plus Machine is specially designed and manufactured to dye all kinds of fabrcis with the lowest Liquor Ratio. According to the fabric types, our Liquor Ratio is between 1/4 – 1/5 for dry fabrics and 1/2 - 1/3 for wet fabrics.

Kiray | Tubular Slitting Machine

A fast and high-performance machine that converts rope-form fabric into an open-width form without tension or damage to the fabric.

Textile automation market to hit $664mn growth by 2029

The global automation in the textile industry is set for steady growth, with the market projected to expand by USD 664 million from 2025 to 2029, according to a recent report from Technavio. The market is expected to grow at a compound annual growth rate (CAGR) of 3.2%, supported by advancements in energy efficiency, ERP integration, and AI-powered technologies that are gradually transforming the textile manufacturing landscape.

Key Market Drivers and Trends

A major factor contributing to this growth is the increasing adoption of Enterprise Resource Planning (ERP) solutions. These systems help streamline essential operations such as finance, production, supply chain management, and human resources, reducing inter-departmental miscommunication and improving overall plant efficiency. As digital transformation continues, ERP solutions are playing a central role in optimizing textile manufacturing processes.

In addition, automation technologies such as robotics, IoT-based control systems, and smart sensors are being adopted across the industry. Real-time monitoring and control solutions,

including SCADA and IIoT, offer greater transparency and operational efficiency. AI and machine learning are supporting predictive maintenance, improving accuracy, and enabling faster decision-making across manufacturing plants.

Regional Insights

The Asia-Pacific (APAC) region is projected to lead market growth, contributing 46% of the global expansion during the forecast period. Countries such as China, India, and Pakistan are seeing strong modernization efforts as manufacturers work to meet the rising demand for textile products. Europe and North America are also expected to play a key role, with a focus on energy-efficient technologies and sustainable automation practices.

Challenges and Solutions

Despite the positive outlook, the textile industry faces a significant challenge: a shortage of skilled labor. The demand for trained professionals capable of operating advanced automation systems is outpacing supply, leading to numerous unfilled positions worldwide. In Germany alone, 63,000 apprenticeship spots remained vacant in 2021. To address this, companies are investing in workforce development and offering training programs to bridge the skills gap.

Market Segmentation

Technavio's report provides an in-depth analysis of the market by component, solution, and geography. Key segments include:

» **Field devices:** Motors, drives, valves, and actuators that control machinery functions and play a crucial role in textile production processes.

» **Control devices and communication solutions:** Enabling seamless integration and coordination across manufacturing systems.

» **Hardware, software, and services:** Comprehensive automation portfolios aimed at optimizing production efficiency and asset performance.

Key Market Players

Prominent companies shaping the automation landscape in the textile sector include ABB Ltd., Siemens AG, Schneider Electric SE, Honeywell International Inc., Rockwell Automation Inc., Delta Electronics Inc., and KUKA AG, among others. These companies are offering innovative solutions for smart manufacturing and sustainable textile production.

Conclusion

As the textile industry continues to adopt Industry 4.0 technologies, automation is playing an increasingly important role in helping manufacturers stay competitive in an evolving market. With the integration of AI, IoT, and ERP systems, companies can improve operational efficiency, reduce costs, and enhance sustainability practices.

EU-Backed METAMORPHOSIS project boosts turkish apparel sector

Photo: *Conference hall of Istanbul Apparel Exporters' Association (İHKİB)*

Istanbul Apparel Exporters' Association (İHKİB) has reaffirmed its commitment to digitalization and sustainability with the successful completion of the METAMORPHOSIS Project. This initiative, carried out under the European Union's Instrument for Pre-Accession Assistance (IPA-2) program, aims to enhance Türkiye's apparel industry by fostering digital transformation and sustainable practices.

Speaking at the closing event, İHKİB's Mustafa Paşahan highlighted the project's significance in positioning Türkiye as a leader in global trade. "Although we have faced cyclical challenges over the past two years, we take a long-term perspective. Apparel will remain crucial for the Turkish economy for many years to come. With this awareness, we are establishing an infrastructure that will strengthen our position in global trade," he stated.

Digital and Green Transformation at the Forefront

The METAMORPHOSIS Project,

Alliance for european flax-linen & hemp unveils innovations at JEC 2025

The Alliance for European Flax-Linen & Hemp is set to make a powerful statement at JEC World 2025, hosting a Natural Fibre Village highlighting cutting-edge innovations in natural fiber composites. Taking place in Paris, this dedicated 250m² showcase will feature the Alliance and nine of its members, offering an exciting glimpse into the future of sustainable materials.

In collaboration with JEC Group, the exhibition will bring together industry leaders such as Bcomp, Demgy, Depestele, Eco-Technilin, Flipts en Dobbels, Libeco, Norafin, Safilin, Terre de Lin, and newcomer Linificio e Canapificio Nazionale SRL. These companies will present various flax and hemp raw materials and composite products designed for automotive, architectural, and industrial design applications. Visitors can expect to see everything from 2D woven flax reinforcements and flax-based thermoplastic tapes to bio-sourced flax fillers for automotive OEM structural parts. A major highlight will be Bcomp's rComposite® vertical wind blade, developed with Windicty, Arkema, and NMG Europe, showcasing a blend of recyclable materials including flax, glass, and recycled carbon fibers. Additionally, EcoTechnilin's collaboration with Babolat has led to NF²-TECH, an

Photo: *(L-R) John Vareldzis (CEO), Sir Lindsay Hoyle MP, Maria Eagle MP, Mike Collins (MD)*

innovation in high-performance sports rackets that enhances vibration damping and comfort using flax fibers.

As part of the JEC Composite Exchange program, Alliance experts Julie Pariset, Marie Demaegdt, and Bruno Pech will lead a session titled "Advancing European Flax-Linen & Hemp Composites: Innovations, Insights, and Sustainable Pathways." Scheduled for March 4 at 16:30 on the Agora Stage, the session will delve into the sector's latest technical breakthroughs, environmental contributions, and strategies for a sustainable future.

JEC World 2025 will also serve as a platform for the Alliance to share updates on Flax-Linen certifications, new environmental footprint tools, and scientific validations of the technical properties of flax-linen. This event marks a significant step forward in the sustainable transformation of the European flax and hemp industry.

implemented under the leadership of the Ministry of Industry and Technology, received a €10.4 million grant from the EU. Key achievements include:

» A comprehensive analysis of Türkiye's apparel and textile sectors.

» Development of a Digital Transformation Roadmap aligned with the EU Digital Single Market Strategy.

» Digital Fashion Design Training for 125 SME representatives.

» Digital Maturity Assessments for 60 SMEs.

» Social compliance consultancy and quality standard testing for over 100 SMEs.

» R&D efforts focused on Turkish organic cotton.

One of the project's major milestones was the launch of the Digital Transformation Center (DDM) in 2022, which serves as an authorized assessor for businesses seeking digital maturity evaluations and investment planning support.

Expanding EU Support for Sustainability Initiatives

Paşahan emphasized İHKİB's commitment to sustainability, noting that the association will launch a "Carbon Footprint Monitoring and Reduction" project later this year. The EU's total financial support for digital and green transformation initiatives in Türkiye has reached €37 million, providing vital resources for industry-wide innovation and branding.

"Price-based competition is no longer viable," Paşahan remarked. "Our future lies in value-added production, design, innovation, and branding. Turkish apparel brands operate over 3,000 stores in more than 100 countries, and our performance in digitalization and sustainability will determine our position in the global fashion industry."

EU-Türkiye Collaboration Continues

Deputy Minister of Industry and Technology, Zekeriya Coştu, outlined the broader impact of EU-funded initiatives, noting that Türkiye has utilized €400 million of EU funds for 46 projects under IPA-1. The ongoing IPA-2 phase, which includes 43 projects focused on R&D, innovation, and digital transformation, has a budget of €260 million.

Jurgis Vilcinskas, Deputy Head of the EU Delegation to Türkiye, commended Türkiye's progress in aligning its textile and apparel sectors with EU sustainability goals. "Since 2007, the EU has invested €780 million under the IPA programs to enhance Türkiye's industrial competitiveness and innovation. Our collaboration with İHKİB continues to evolve, paving the way for a digital, sustainable, and innovative future."

How RFID and IoT Are Transforming Inventory Management in Fashion

Abrar Hossain

The fashion industry is experiencing a technological revolution, and at the heart of it are RFID (Radio Frequency Identification) and IoT (Internet of Things). As consumer demands for speed, transparency, and sustainability rise, these innovations are reshaping inventory management, enabling brands to stay agile and competitive in a fast-paced market.

The Role of RFID in Fashion Inventory

RFID technology uses electromagnetic fields to automatically identify and track tags attached to items, offering a significant upgrade from traditional barcodes. Unlike barcodes, which require line-of-sight scanning, RFID tags can be read remotely and in bulk, making inventory counting faster and more accurate.

Retailers like Zara have embraced RFID to streamline their inventory processes. By embedding RFID tags into price labels, Zara can perform full inventory checks in hours instead of days, ensuring that stores remain stocked with the right products. This efficiency reduces lost sales due to stockouts and minimizes overstocking, contributing to leaner, more sustainable operations. According to a report by Accenture, RFID adoption can boost inventory accuracy to 98% and reduce stockouts by up to 50%. This kind of precision is critical in fashion, where trends

change rapidly, and missing the mark on inventory can lead to significant financial losses and waste.

IoT's Impact on Real-Time Visibility

While RFID focuses on identification and tracking, IoT takes inventory management to the next level by providing real-time data and connectivity. IoT-enabled sensors can monitor everything from temperature and humidity to product movement, offering brands unprecedented visibility into their supply chains. Take the example of Levi Strauss & Co., which uses IoT platforms to track products from manufacturing through distribution and retail. This transparency helps the company manage production schedules, anticipate demand fluctuations, and reduce lead times—all critical factors in today's fast-moving fashion landscape. IoT also supports predictive analytics, helping brands forecast inventory needs with greater accuracy. According to McKinsey & Company, predictive inventory models powered by IoT can reduce excess inventory by 20% to 50%, a major advantage in an industry plagued by overproduction.

Sustainability and Waste Reduction

Beyond operational efficiency, RFID and IoT technologies play a crucial role in supporting sustainability initiatives. By improving inventory accuracy and demand forecasting, these tools help brands avoid overproduction and reduce waste—a key concern in the fashion industry, which discards an estimated 92 million tons of textile waste annually, according to the Ellen MacArthur Foundation.
Additionally, IoT-enabled systems can monitor environmental conditions in warehouses and transport, ensuring that fabrics and garments are stored optimally, reducing spoilage and returns.

Challenges and Future Prospects

Despite their benefits, implementing RFID and IoT solutions isn't without challenges. Initial costs, systems integration, and data management complexities can be barriers for some brands, particularly smaller companies with limited tech infrastructure. However, as the cost of IoT sensors and RFID tags continues to decline, adoption is expected to rise across the industry. According to Allied Market Research, the global RFID market in retail is projected to reach $10 billion by 2025, reflecting the growing recognition of its value.,ngyt

Conclusion

RFID and IoT are not just buzzwords—they are game-changers for inventory management in fashion. By providing real-time visibility, improving accuracy, and supporting sustainability, these technologies are helping brands stay ahead in an increasingly competitive and environmentally conscious market. As adoption grows, the fashion industry will be better equipped to balance the need for speed with the imperative of responsibility.

Top Tech Circularity

Trutzchler | Truecycled®

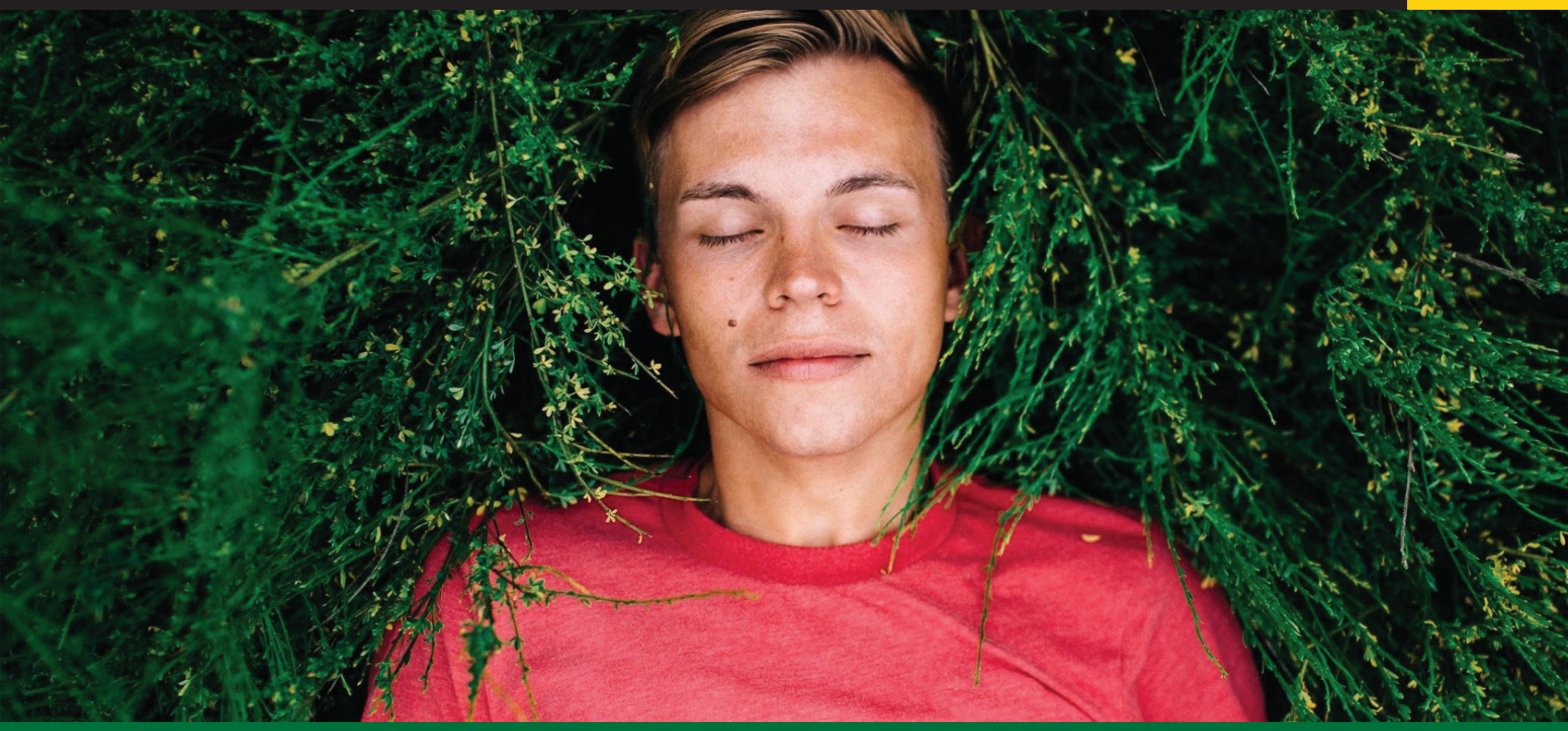
Trützschler has made a significant move to address the global challenge of textile waste by broadening its offerings to become the first full-liner in the processing of textile waste, encompassing mechanical recycling to the spinning preparation of shredded secondary fibers. With the introduction of the TRUECYCLED system, the company now provides an all-encompassing solution that manages the entire workflow, from cutting and tearing textile waste to carding and drawing secondary fibers. This holistic approach ensures optimal control and expertise at every stage, enabling manufacturers to avoid unnecessary fiber shortening and achieve the best possible quality results. Trützschler's expertise throughout this process positions them as a leader in sustainable textile recycling, paving the way for a more eco-friendly future in the industry.

Bengal Technology and Engineering Associates (BTE)

BTE specializes in providing comprehensive engineering and technological solutions, particularly in wastewater treatment for the textile sector. They offer systems designed for Water Treatment Plants (WTP), Effluent Treatment Plants (ETP), and solutions aiming for zero liquid discharge, ensuring minimal environmental impact from textile manufacturing processes.

Dysin | Rapid Model: Eco-24

Dysin is a leading supplier of laboratory and testing equipment for the textile industry. They will present the "Rapid Model: Eco-24," an innovative laboratory dyeing machine. This apparatus is designed for pollution-free and energy-saving operations, featuring a low liquor ratio and an advanced heat-conducting system. Its unique rotary mechanism ensures even and crease-free dyeing results, making it indispensable for sustainable textile processing.



Which fashion brands are leading Net Zero race?

AH Monir

Introduction

The fashion industry is one of the largest contributors to global carbon emissions, accounting for approximately 4% of total global emissions, according to McKinsey & Company. From raw material extraction and textile production to logistics and consumer use, every stage of the fashion supply chain leaves a significant carbon footprint. With rising concerns about climate change, leading apparel brands are making bold commitments to achieve net-zero emissions through renewable energy adoption, supply chain transformation, and carbon offset programs. But which brands are truly leading the race toward sustainability?

Understanding Fashion's Carbon Footprint

Fashion's carbon footprint is largely driven by the following factors:

Raw Material Production: Cotton farming, synthetic fiber production, and textile processing contribute to emissions through land use, water consumption, and fossil fuel dependency.

Manufacturing & Processing: Dyeing, finishing, and garment production involve energy-intensive processes that often rely on coal-powered factories.

Logistics & Distribution: The global supply chain requires extensive transportation, increasing emissions

from shipping and air freight.

Consumer Usage: Washing, drying, and ironing clothes contribute significantly to carbon emissions, with polyester garments releasing microplastics into the environment.

End-of-Life Disposal: Landfills and incineration of textile waste release greenhouse gases such as methane and CO_2.

Leading Brands in the Net-Zero Race

Several fashion brands have taken major steps toward decarbonizing their operations and supply chains. Here's a look at some of the frontrunners:

1. Patagonia: The Pioneer in Carbon Neutrality

Net-Zero Goal: By 2040

Key Initiatives: Patagonia has committed to using 100% renewable energy across all operations. The brand invests in regenerative agriculture for organic cotton and supports carbon sequestration projects.

Impact: By 2022, 98% of Patagonia's products were made with recycled materials, significantly lowering emissions.

2. H&M Group: Scaling Renewable Energy and Circularity

Net-Zero Goal: By 2040

Key Initiatives: H&M has pledged to achieve climate positivity by switching to 100% renewable energy in all facilities and reducing emissions by 56% per product by 2030.

Impact: In 2022, over 80% of its materials were sustainably sourced, including increased use of recycled polyester and organic cotton.

3. Nike: Innovating Sustainable Manufacturing

Net-Zero Goal: By 2050

Key Initiatives: Nike has implemented its Move to Zero strategy, focusing on 100% renewable energy and reducing greenhouse gas emissions across its supply chain.

Impact: By 2025, Nike aims to power its owned-and-operated facilities with 100% renewable energy and achieve a 30% reduction in carbon emissions.

4. Levi's: Reducing Water and Energy Consumption

Net-Zero Goal: By 2050

Key Initiatives: Levi's focuses on water and energy efficiency in denim production, with its Water<Less® technology saving over 4 billion liters of water since 2011.

Impact: Levi's suppliers have reduced emissions by 25% through renewable energy and factory upgrades.

5. Stella McCartney: Luxury's Leader in Sustainability

Net-Zero Goal: By 2040

Key Initiatives: Stella McCartney

pioneered the use of vegan leather, sustainable fabrics, and low-carbon production.

Impact: The brand's NO FUR, NO LEATHER policy and use of alternative materials significantly reduce carbon emissions.

Strategies for Achieving Net-Zero in Fashion

Brands are using various strategies to cut emissions and work toward net-zero goals. Key strategies include:

1. Renewable Energy in Manufacturing

Many brands are transitioning to solar and wind power for their factories.

Example: Adidas aims for 100% renewable energy in its own operations by 2025.

2. Carbon Offsetting and Regenerative Agriculture

Brands invest in carbon capture projects, tree planting, and regenerative farming.

Example: Kering Group supports regenerative wool and cotton programs.

3. Sustainable Materials and Recycling

The industry is shifting toward recycled polyester, organic cotton, and biodegradable fibers.

Example: Zara (Inditex) aims for 100% sustainable materials by 2030.

4. Circular Economy and Closed-Loop Systems

Resale, rental, and repair programs extend product lifecycles and reduce waste.

Example: Eileen Fisher's Renew Program recycles old garments into new designs.

Challenges in the Net-Zero Race

Despite progress, achieving net-zero in fashion comes with challenges:

Supply Chain Complexity: Many brands rely on outsourced manufacturing, making emissions reductions difficult.

Greenwashing Concerns: Some companies exaggerate sustainability claims without measurable impact.

High Costs of Transition: Switching to renewable energy and sustainable materials requires significant investment.

Consumer Awareness and Behavior: Fast fashion remains popular, creating tension between affordability and sustainability.

Conclusion

The fashion industry is at a turning point. While some brands lead the way with ambitious net-zero commitments, the path to decarbonization requires industry-wide collaboration, policy support, and increased consumer awareness. By investing in renewable energy, sustainable materials, and circular economy models, fashion brands can reduce their carbon footprint and set a precedent for a greener future. The race to net-zero is on—who will cross the finish line first?

Steven Bethell joins SMART board at historic dubai conference

J. Washington

Photo: *Steven Bethel*

Steven Bethell, a globally recognized advocate for textile recycling and sustainable fashion, has been appointed to the board of the Secondary Materials and Recycled Textiles Association (SMART). The announcement was made during the largest secondhand clothing and wiper conference ever held in Dubai, bringing together key industry leaders committed to driving sustainability in the textile sector.

"I am very passionate about the mission of this organization and keen to contribute to its growth and success," said Bethell. "Used clothing is a force for good, and I am excited to help advance SMART's vision for a more circular and responsible textile economy."

SMART is a leading trade association representing the interests of the for-profit used clothing, wiping materials, and fiber recycling industries. The organization works to promote the environmental, economic, and social benefits of textile reuse and recycling while setting high industry standards. Its board comprises esteemed leaders dedicated to fostering innovation, sustainability, and ethical business practices within the sector.

Bethell joins a distinguished group of industry experts President: Brian London, Whitehouse & Schapiro. Vice President: Drew Weinberg, OVASCO. Treasurer: Brian Rubin, Erie Cotton Products. Immediate Past President: Steve Rees, Wipeco Industries. As well as others on the SMART board, including Gina Buty, Helene Carter, Harold Kalfus, Rick Wolf, Munir Hussain, Usman Kappaya, Marisa Adler all of whom bring valuable expertise and leadership to further the organization's mission. With his extensive experience in the global secondhand clothing industry, Bethell's appointment is expected to strengthen SMART's initiatives in advocating for sustainable textile management practices worldwide.

TotalEnergies and Mayer & Cie. partner on tixo stainless knitting machine oils

In a significant new partnership, TotalEnergies Lubrifiants and Mayer & Cie. have joined forces to co-brand the Tixo Stainless knitting machine oil range, offering premium lubrication solutions for knitting machines worldwide. The agreement, signed on February 6, 2025, in Strasbourg, marks a strategic collaboration between two leaders in the industry.

Under the agreement, Mayer & Cie.'s global network of expert distributors will offer the Tixo Stainless range to customers, pairing one of the highest-performance knitting oils with Mayer & Cie.'s advanced circular knitting machines. TotalEnergies Lubrifiants is renowned for its Tixo products, specifically designed to lubricate needles, needle beds, sinkers, and knitting cams while ensuring machine reliability and superior fabric quality. The oils are compatible with all types of yarn and provide exceptional washability across a range of temperatures without compromising mechanical performance.

Mayer & Cie., a German company with over a century of experience, is a premium manufacturer of large-diameter circular knitting machines, known for innovation and technical excellence. Benjamin Mayer, Managing Partner at Mayer & Cie., expressed excitement about the collaboration, highlighting that offering a premium machine and needle oil enhances the overall performance of their knitting machines.

27 bangladeshi brands showcase innovation at Texworld Paris 2025

Faysal Ahmmad

The much-anticipated Texworld/ Apparel Sourcing Paris 2025 kicked off today at the Paris-Le-Bourget Exhibition Centre, with over 1,259 exhibitors from 25 countries showcasing the latest trends and innovations in the textile and apparel industry. Among the diverse exhibitors, Bangladesh has made a significant impact with 27 of its apparel, denim, and fabric manufacturers displaying their expertise on the global stage.

Among the standout participants are well-known Bangladeshi firms such as Aaron Denim Limited, Hoorain HTF, NZ Denim, Sara Fashionwear, and Nexgen Apparel. Each company is presenting its unique offerings in fashion apparel and denim, highlighting the country's growing influence in the global fashion market. Other prominent companies, including Asia Link Design, Flash Apparels, Pacific Sports, and Quality Apparels, are also exhibiting under the banner of the Export Promotion Bureau (EPB).

The EPB stand, designed to facilitate Bangladeshi exhibitors, was attended by Md. Mizanur Rahman, the Commercial Counselor of Bangladesh to France, who provided valuable assistance to the exhibitors. The Bangladesh pavilion has been a hub of activity, drawing attention from international buyers seeking high-quality fashion that blends Bangladesh's rich traditional craftsmanship with contemporary design. Dr. SK Ali Abbas Naser, Managing Director of Ayasha & Galeya Fashions Ltd., expressed confidence in the fair's success, stating, "We've received strong interest and expect even more inquiries in the coming days of the fair."

Photo: *Matrix Apparel from the EPB booth engaging in conversations with buyers.*

Texworld/Apparel Sourcing Paris 2025 has served as a platform for Bangladesh to showcase its innovative designers and premium textiles, reinforcing its position as a rising player in the global fashion industry. The event continues until February 12, 2025, and promises to further enhance Bangladesh's reputation as a key sourcing hub for high-quality apparel and denim.

Photo: *A plant of S&S activewear*

Craig Ryan & Steven Clune join S&S activewear to lead canadian growth

M. Rashid

S&S Activewear, a technology-enabled distributor of apparel and accessories in North America, has announced key leadership changes as part of its ongoing commitment to strengthen its Canadian division. Effective February 1, 2025, the company is implementing a new commercial structure designed to drive growth and improve customer support across Canada.

Craig Ryan has been appointed vice president of commercial Canada, a newly created role that will see him overseeing all sales operations in the region. With extensive experience in the Canadian apparel distribution industry, Ryan was previously the vice president of sales at alphabroder, where he played a pivotal role in the company's recent integration with S&S Activewear. In his new position, Ryan will set the strategic direction for S&S Activewear's Canadian market and collaborate with functional leaders to ensure continued growth.

Alongside Ryan, Steven Clune has been named national director of sales for Canada, reporting directly to Ryan. Clune's role will focus on enhancing sales efforts nationwide and ensuring the S&S product portfolio is effectively represented across Canada. With years of industry expertise, Clune will work to support the sales team and improve the overall customer experience for S&S's wide range of Canadian clients.

These leadership changes come on the heels of S&S Activewear's October 2024 acquisition of alphabroder. The integration of the two companies is already yielding benefits, including higher credit limits, more product offerings, and improved inventory, all of which contribute to greater value for customers.

Reju & Cibutex join forces to build circular textile ecosystem

Oliver Henry

Textile regeneration company Reju™ and cooperative Cibutex have announced a strategic partnership to establish a circular textile ecosystem, aiming to transform post-consumer textile waste into valuable raw materials.

Through this collaboration, Cibutex member companies will supply secondary raw materials to Reju, which will be recycled into regenerated Reju Polyester™. With a 50% lower carbon footprint than virgin polyester and the ability to be infinitely regenerated, Reju Polyester™ will be produced at the company's Regeneration Hub Zero in Frankfurt, Germany, set to be fully operational in 2025.

Patrik Frisk, CEO of Reju, emphasized that the partnership aligns perfectly with Reju's mission to tackle textile waste and build infrastructure that keeps resources out of landfills. Jan Lamme, CEO of Cibutex, highlighted the importance of traceability and quality in achieving a closed-loop supply chain for business textiles.

As the EU's mandate for textile waste collection takes effect this year, this collaboration is positioned to meet regulatory demands while driving sustainability and innovation in the textile industry.

Brightfiber launches amsterdam's first circular clothing recycling plant

Brightfiber Textiles has opened a new textile recycling facility in Amsterdam, focusing on converting discarded garments into reusable textile fibers.

Photo: *UNIFI' REPREVE® recycling center*

Advancing Circular Textile Practices

In the Netherlands, an estimated 300 million kilograms of clothing are discarded each year. Traditional recycling methods have faced challenges in effectively repurposing these materials into new garments.

Recycling Process Details

Collaborating with Wieland Textiles, a company specializing in textile recycling, the facility utilizes mechanical processes to transform discarded textiles into fibers ready for reuse. The process includes Near-Infrared (NIR) sorting technology and automated systems to separate garments, remove non-textile elements such as buttons and zippers, and refine the fibers.

Environmental and Regulatory Context

By reintegrating textile waste into fabric production, the facility aims to lessen the need for new materials and reduce the environmental impact associated with dyeing and chemical treatments. Each product undergoes a life-cycle assessment to evaluate environmental impacts. This initiative aligns with the Netherlands' regulatory framework, which, as of July 1, 2023, requires manufacturers to include a certain percentage of recycled fibers in their products. The mandate specifies that by 2025, at least 7.5% of new textiles must consist of recycled fibers, increasing to 16.5% by 2030. Brightfiber Textiles offers recycled fiber solutions to assist manufacturers in meeting these requirements.

BOKSER partners with IAM to introduce CiCLO® to hospitality textiles

BOKSER Textiles, a leading provider of hospitality textiles, has announced a groundbreaking partnership with Intrinsic Advanced Materials to introduce CiCLO® technology to the hospitality sector. This collaboration marks a significant milestone in the industry, aiming to combat microplastic pollution from synthetic fabrics through sustainable innovation.

The newly launched Shoreline Collection of Top Sheets is crafted from recycled polyester and infused with CiCLO® technology, a patented textile ingredient designed to accelerate the biodegradation of synthetic fibers. This advancement represents a major step toward sustainability, reducing the long-term impact of microplastic pollution caused by laundering and fabric wear in hotel environments.

Hotel textiles experience frequent use and washing, leading to the shedding of synthetic fibers, contributing to the growing microplastic pollution issue. Synthetic fiber shedding is the most common form of microplastic pollution found across the globe. By incorporating CiCLO® technology, fabrics like polyester and nylon retain their durability and performance while

gaining the ability to biodegrade at rates similar to natural fibers like wool.

"Our mission at BOKSER is to be the most affordable supplier of sustainable hospitality textiles," said Ed Guzek, President of BOKSER Textiles. "Partnering with Intrinsic to integrate CiCLO® technology into our products represents a major leap in environmental responsibility. This initiative allows us to support our customers while contributing to a healthier planet."

Hector Torres, Global Sales Director, Home & Hospitality at Intrinsic Advanced Materials, echoed this enthusiasm: "We are excited to work with BOKSER in bringing CiCLO® technology to hotels across the country. This partnership not only offers guests high-quality, sustainable bedding but also advances the hospitality industry toward a more sustainable future."

UNIFI® consolidates madison facility into North & Central America

Robert Heymen

Photo: *UNIFI' REPREVE® recycling center*

UNIFI, Inc., the maker of REPREVE® and a leader in recycled and synthetic yarn innovation, has announced the closure of its Madison, North Carolina, manufacturing facility. Production will be consolidated into other UNIFI locations across North and Central America, with the Madison property set for sale in 2025.

Eddie Ingle, CEO of UNIFI, expressed gratitude to employees and the Madison community, stating, "We appreciate the hard work and contributions of everyone at the Madison facility, both past and present. Our priority is to ensure a smooth transition, and we are offering existing employees opportunities at our other facilities in North Carolina."

The decision to close the Madison facility is part of UNIFI's broader strategy to streamline operations, optimize costs, and align its manufacturing footprint with growing customer demand in the Americas. Some machinery from the facility will be relocated to other UNIFI plants to maintain production capacity.

"This transition strengthens our cost structure and balance sheet while maintaining our ability to meet market demands," Ingle added. "It also supports our strategic focus on innovation, the REPREVE® portfolio, and continuous financial improvement. We remain committed to revitalizing our Americas business and driving sustainability for all stakeholders."

UNIFI assures customers that the move will not disrupt supply chains or its commitment to quality and innovation. The company continues to invest in sustainable textile solutions, reinforcing its position as an industry leader. With this transition, UNIFI aims to enhance operational efficiency, ensure long-term financial stability, and support sustainable manufacturing practices in the textile industry.

ANDRITZ airlay line recycles glass wool for nonwoven insulation in France

Photo: *From left to right: Alexandre Butté, ANDRITZ; Sophie Bretillon Charrier, Revibat; Nicolas Brousse, Revibat; Alexis Gautier, ANDRITZ; Jörg Eberle, Schott & Meissner, in front of the ANDRITZ neXline airlay system at the opening ceremony.*

Global technology group ANDRITZ has commissioned its neXline airlay system at Revibat, France, enhancing efforts to recycle glass wool waste into insulation panels. Officially inaugurated in early February, the system contributes to sustainability in insulation manufacturing by facilitating the efficient reuse of waste materials.

Industry representatives from ANDRITZ, Revibat, and Schott & Meissner attended the launch event at Revibat's facility. Key discussion points included the system's role in sustainable material processing and its environmental impact.

Revibat, engaged in recycling construction materials, has integrated ANDRITZ's neXline airlay technology to process up to 1,500 kg of fiber per hour. This addition allows for the production of nonwoven insulation materials while reducing landfill waste and the overall carbon footprint.

Nicolas Brousse, CEO of Revibat, commented: "The ANDRITZ neXline airlay system supports our efforts to recycle glass wool waste into insulation solutions. Our aim is to expand this approach across France, reducing transportation needs and minimizing environmental impact. Collaboration

with ANDRITZ's technical center in Cours has been beneficial in refining this process."

The system utilizes patented technology to transform waste materials from the Paris region into insulation products, helping to reduce landfill use and promote responsible manufacturing practices.

Revibat's investment aligns with its commitment to assisting eco-organizations in waste management and recycling. With an equipped laboratory and a focus on sustainability, the company aims to continue developing efficient recycling solutions for the construction sector.

As sustainability remains a key priority for industries, the collaboration between ANDRITZ and Revibat reflects how technological advancements can support responsible waste management and environmentally conscious manufacturing. The commissioning of the neXline airlay system represents a step forward in sustainable insulation production.

Verlo Mattress introduces convenient in-home comfort adjustments

Verlo Mattress® has introduced a new way for customers to adjust the comfort of their mattresses without having to replace them. With the In-Home Comfort Adjustment Service, customers can now make comfort adjustments from the comfort of their home, offering a simple and hassle-free solution to evolving sleep preferences. This service is available for customers whose mattresses feel too firm or too soft within the first six months to a year, depending on the model. Verlo's team can adjust the mattress comfort in the same day, so customers don't have to wait long to find the ideal fit.

Verlo mattresses are made with high-quality, American-made materials for durability and comfort. Thanks to the company's Zipper Cover Technology, available at participating stores, the in-home adjustment process is quick and straightforward.

In addition to the In-Home Comfort Adjustment Service, Verlo Mattress offers customizable mattresses for all kinds of spaces, including RVs and boats. Customers can also choose different comfort levels, making it easier for couples to find a mattress that works for both. Verlo offers a variety of options to meet different needs, all at factory-direct prices.

Top Tech Energy

Clarke Energy | ICHP

Industrial Combined cooling heat and power plants can provide significant financial savings on fuel costs used to provide electricity, heat and in some instances cooling. Industrial CHP plants can accept a range of low carbon and renewable fuels including natural gas, biogas, biomethane, hydrogen. Gas engines can be deployed as part of a captive power plant dedicated to the facility, or by an independent power producer that sells to a manufacturer using a power purchase agreement. Gas engines can also be deployed alongside other energy generation or storage technologies as part of a microgrid.

Solaric | Rooftop Solar Projects

Solaric is a group of renewable energy development companies with its parent company in Singapore and subsidiary in Bangladesh to implement large-scale industrial rooftop solar projects based on both CapEx and OpEx models. Founded by the Silicon valley (USA) repatriated Technologist and managed by a group of veteran BUET and IBA graduates, Solaric is uniquely poised to offer the best engineering solution. Solaric is the only solar company in Bangladesh with private equity investor (OSIRIS) which helps the company to grow exponentially by offering industrial rooftop solutions to factory owners with appropriate financial solution.

Miura | Boiler (high energy efficient)

Miura boilers are known for their high efficiency and low emissions. They're used in a variety of industries, including breweries, distilleries, universities, and hospitals.
Features

Energy efficient: Miura boilers can achieve up to 98% efficiency with an economizer.
Low emissions: Miura boilers emit fewer greenhouse gases and other pollutants.
Compact: Miura boilers have a compact, modular design that saves space.
Low maintenance: Miura boilers have advanced real-time monitoring and IoT systems to reduce maintenance costs.
Low water volume: Miura boilers have a low water volume design for optimal heat transfer.
Floating header: Miura boilers have a floating header design that reduces stress and allows for the use of cold feedwater.

Taiwan turns textile sludge into energy

Robert Heymen

Taiwan is making significant strides in sustainable waste management by transforming textile water sludge (TWS), a byproduct of its thriving textile industry, into a valuable energy source. This innovative approach aligns with circular economy principles, reduces environmental impact, and contributes to the island's transition towards net-zero emissions.

Challenges of Textile Water Sludge

The textile industry in Taiwan generates a substantial amount of TWS annually. Disposing of this sludge poses environmental challenges, prompting the government and industry to collaborate on effective solutions for its reuse and valorization. Approximately 30% of Taiwan's annual TWS is currently treated as fuel.

Government Initiatives and Regulatory Frameworks

The Ministry of Environment (MOENV) in Taiwan has been actively promoting waste-to-energy initiatives since 2019, prioritizing converting combustible waste, including TWS, into energy. This initiative has significantly increased Solid Recovered Fuel (SRF) production and adoption. The MOENV has also established clear technical guidelines and quality standards for SRF manufacturing, ensuring the safe and efficient conversion of TWS into fuel. Furthermore, Taiwan has integrated circular economy principles into its industrial policies through the "Five Plus Two" initiative, encouraging industries, including textiles, to transition from linear to circular systems.

Technological Innovations in TWS Conversion

Taiwan is employing various innovative technologies to convert TWS into SRF:

» **Sorting, Drying, and Torrefaction:** These key processes enhance fuel properties such as calorific value and combustion efficiency.

» **Fluidized Bed Boilers**: TWS can be used as a fuel auxiliary for mass burning in fluidized bed boilers, which offer high-temperature, efficient

combustion, and air pollution control features.

» **Cogeneration Systems:** These systems recycle sludge into energy, contributing to textile sludge elimination.

Solid Recovered Fuel (SRF) Production and Utilization

SRF is mainly used in Taiwan as an industrial fuel in cement kilns and industrial boilers, replacing a portion of fossil fuels. It is also used as fuel for power generation in incinerators. The Taiwanese government provides renewable energy subsidies to encourage businesses to use SRF and promotes mandatory waste sorting policies to increase the utilization of recyclable waste.

The Characteristics of Textile Water Sludge (TWS)

Understanding the characteristics of TWS is essential for optimizing its management and exploring its potential for SRF production. TWS typically contains high levels of organic matter and moisture. The volatile organic matter content is approximately 70% on a dry basis, and the moisture content in raw sludge exceeds 80%. TWS also exhibits a relatively high gross calorific value of approximately 17.9 MJ/kg, which is comparable to typical biomass, making it a viable candidate for co-incineration processes.

Environmental and Economic Benefits of SRF

Waste Reduction: SRF production reduces waste sent to landfills or incinerators, mitigating environmental pollution.

Greenhouse Gas Mitigation: Replacing coal with SRF derived from TWS contributes to significant carbon savings. One metric ton of SRF can replace 0.86 metric tons of coal, leading to a reduction of 0.77 metric tons of carbon dioxide emissions.

Energy Security: Taiwan relies heavily on imported energy. SRF production from local TWS provides a renewable energy source, reducing import dependence and enhancing energy security.

Economic Viability: SRF provides a cost-effective energy source for industries while supporting the adoption of environmental, social, and governance (ESG) practices.

Challenges and Future Directions

Despite the advancements, challenges remain, including:

» Raw material availability and quality control.

» Economic viability and public perception.

» Difficulties in decolorization, high energy consumption, and expensive operations in recycling processes for textile waste.

» Addressing these challenges through advanced processing technologies, government incentives.

Wearables that generate their own power

M A Mohiemen Tanim

Introduction

As technology advances and sustainability concerns grow, the fashion and textile industry is exploring innovative ways to integrate energy efficiency into clothing. One of the most promising frontiers is energy harvesting textiles—fabrics capable of generating and storing power through kinetic, thermal, and solar energy conversion. These textiles can power wearable electronics, reduce dependency on traditional batteries, and contribute to a more sustainable future.

With wearables becoming more common in health monitoring, sports performance, and smart fashion, self-powered clothing could revolutionize how we interact with technology. According to a Market Research Future report, the global smart textiles market is projected to reach $6.5 billion by 2027, driven largely by the demand for self-sustaining wearable electronics.

Types of Energy Harvesting in Textiles

1. Kinetic Energy Textiles: Kinetic energy harvesting textiles generate electricity from body movements such as walking, running, or stretching. This is typically achieved through:

Piezoelectric Materials: These materials produce an electric charge when subjected to mechanical stress. A team

at the University of Bath (UK) developed a flexible piezoelectric fiber that can be woven into clothing to generate power from movement.

Triboelectric Nanogenerators (TENGs): TENG technology harnesses friction between fabric layers to generate electricity. Researchers at the Beihang University (China) developed a TENG-powered textile that can charge small devices simply by the motion of the wearer.

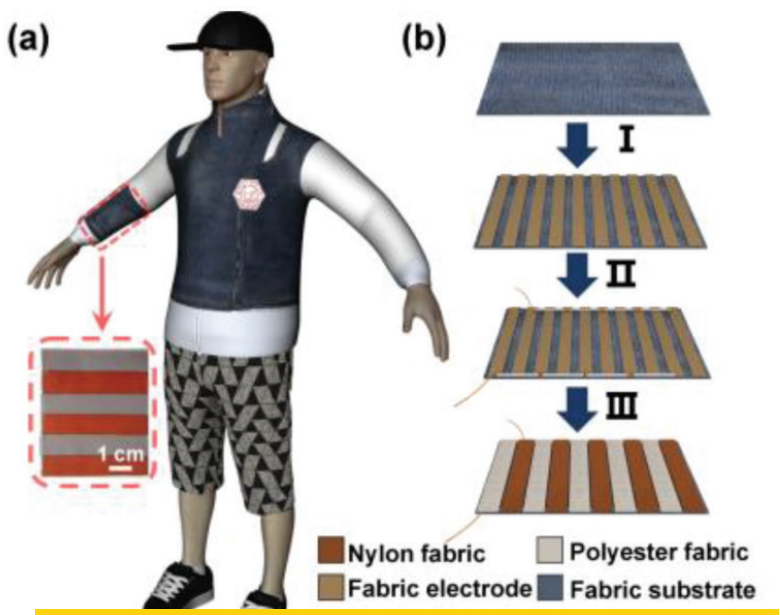


Photo: *Structure design of fully cloth-based T-TENGs harvesting mechanical energy from human movements (a) schematic representative of T-TENG sewn on cloth, inset: photographic image of wearable T-TENG. (b) Schematic illustration of the fabrication process.*

Real-World Example:

Nike's Self-Lacing Shoes (Adapt BB):

While not fully energy-harvesting, these shoes demonstrate the potential of kinetic energy textiles. Future iterations could integrate piezoelectric fibers to power the self-lacing mechanism through motion.

2. Thermal Energy Textiles

Body heat is another energy source that can be harvested using thermoelectric

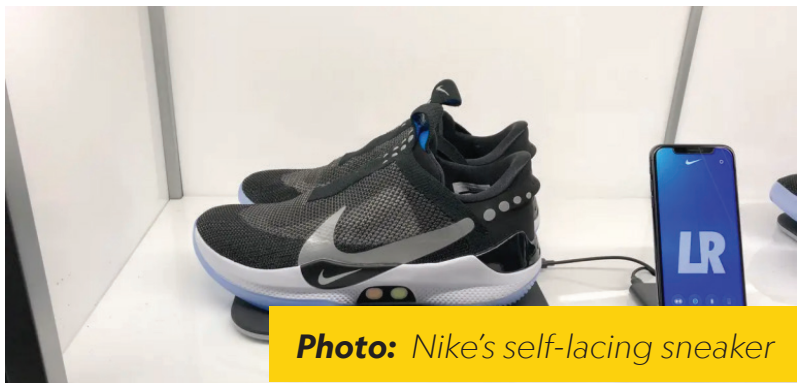


Photo: *Nike's self-lacing sneaker*

generators (TEGs). These devices exploit the temperature difference between the skin and the external environment to produce electricity.

Advancements in Thermal Energy Textiles:

» Scientists at Purdue University (USA) have developed thermoelectric textiles capable of generating over 20 milliwatts per square meter, enough to power small sensors.

» The Swiss Federal Laboratories for Materials Science and Technology (EMPA) created a fabric with embedded thermoelectric modules that can power a wristwatch just from body heat.

» Power Felt by Wake Forest University: This thermoelectric fabric, embedded with carbon nanotubes, can convert body heat into usable energy, paving the way for future self-powered wearables.

3. Solar Energy Textiles

Photo: *MIT engineers have developed ultralight fabric solar cells that can quickly and easily turn any surface into a power source.*

Solar-powered textiles integrate photovoltaic (PV) cells into fabric to capture and convert sunlight into electricity.

Innovations in Solar Textiles:

» **Researchers at RMIT University** (Australia) developed ultra-thin solar fabrics by embedding organic solar cells directly into textile fibers.
» **MIT's Flexible Solar Panels:** MIT engineers created solar panels that are 100 times lighter and 18 times more efficient than traditional solar cells, making them ideal for wearable integration.
» **Tommy Hilfiger's Solar Panel Jackets:** These jackets incorporate flexible solar panels on the back, capable of charging a smartphone or other small electronic devices while on the move.

Challenges in Energy Harvesting Textiles

Despite the potential, several hurdles must be overcome before energy-harvesting textiles become mainstream:

» **Durability and Washability:** Many energy-harvesting materials degrade when exposed to moisture, repeated washing, or mechanical stress.
» **Efficiency of Energy Conversion:** Current textiles generate relatively small amounts of power, making them insufficient for high-energy-demand devices.
» **Cost and Scalability:** High production costs limit widespread adoption. Research is needed to develop cost-effective and scalable production methods.
» **User Comfort and Aesthetics:** Integrating rigid energy-harvesting components into textiles without compromising comfort and fashion remains a challenge.

Future Prospects and Market Potential

The future of energy-harvesting textiles looks promising as research advances and production costs decrease. Companies and research institutions are actively working on improving efficiency and durability. The European Commission's Smart Textiles Initiative and investments from major apparel brands indicate strong industry interest in commercializing self-powered clothing.

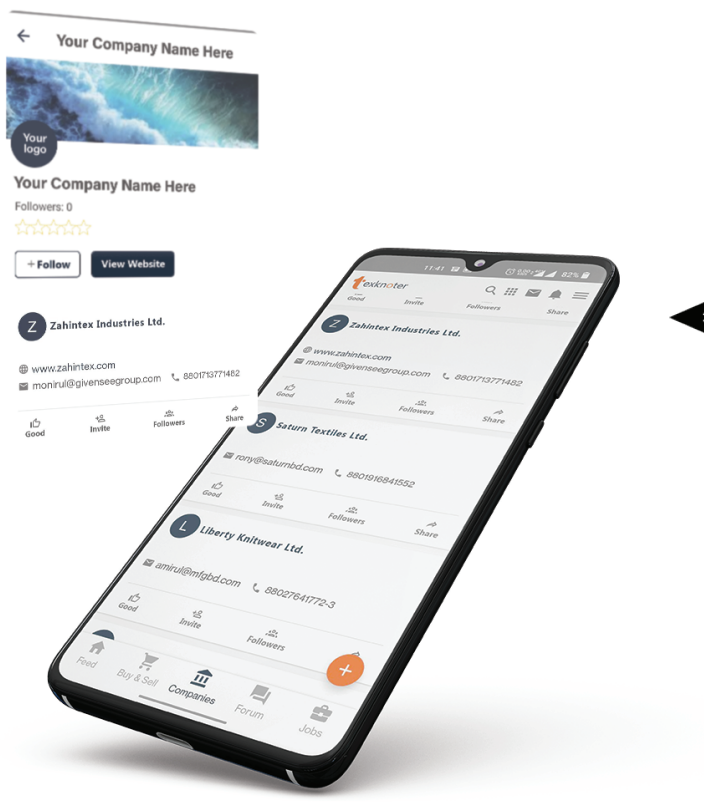
Conclusion

From kinetic and thermal to solar energy, self-powered clothing has the potential to reduce reliance on traditional batteries, enhance convenience, and contribute to energy-efficient lifestyles.

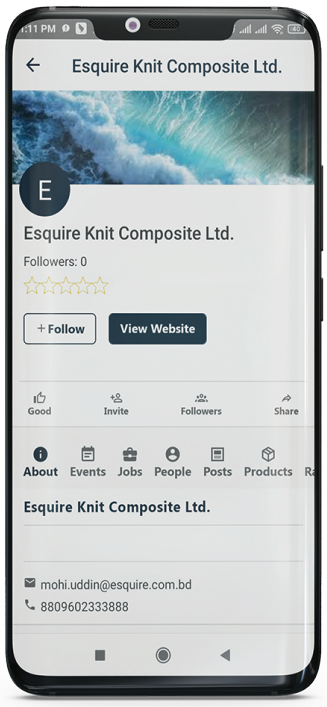
With growing consumer interest in smart wearables and sustainable fashion, the future of energy-harvesting textiles is not just promising—it's inevitable.

www.texmeta.net

BUSINESS & PROFESSIONAL NETWORK



- Post
- Buy & Sell
- **Companies**
- Events
- Forum
- Jobs
- Profile
- Messages
- Notification



Create Your

Profile
Create & build your profile

Events
Create & Join events in a single place.

Buy & Sell
A dedicated marketplace to buy & sell products.

Jobs
Post jobs easily and get the right professionals.

Post
Share thoughts or views with people of the same interest.

Available on the Google Play

Download on the App Store