AMITY UNIVERSITY
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APPLIED ARTS/FINE ARTS/PERFORMING ARTS/ VISUAL ARTS

Amity School of Fashion Technology
Presents

INTERNATIONAL CONFERENCE ON INNOVATIONS IN TECHNICAL TEXTILES (ICITT-2025)

for Viksit Bharat

Date: 24th March 2025

Venue: I-2 Moot Court

The **International Conference on Innovations in Technical Textiles (ICITT-2025)**, organized by the **Amity School of Fashion Technology** under the aegis of **Faculty of Applied Arts/ Fine Arts/ Performing Arts & Visual Arts** at **Amity University, Noida**, aimed to explore and promote advancements in technical textiles, government initiatives, and the future growth trajectory of the sector in India. The conference brought together experts, policymakers, researchers, and entrepreneurs to discuss the latest developments, challenges, and opportunities in the field. The conference facilitated discussions on sustainable practices, smart textiles, advanced materials, and digital transformation in the textile industry. The one-day conference witnessed sessions from national and international speakers**,** paper presenters from across the country and huge audience, including prominent academicians, industry leaders, researchers, and students. With over 400 attendees ICITT-2025 created a platform for collaboration and knowledge exchange.

Opening Session

The conference began with a welcome address by **Prof. (Dr.) Pradeep Joshi**, Group Additional Pro-Vice Chancellor, Director General and Dean, Faculty of Applied Arts/ Fine Arts/ Performing Arts & Visual Arts. He highlighted the university's commitment to fostering innovation and driving advancements in the textile industry. He also emphasized the importance of the textile industry in India's economy and its ongoing transformation from traditional to technical textiles. He mentioned as to how innovation, research, and government support are crucial in positioning India as a key player in the technical textiles market.

Dr. Joshi warmly welcomed the keynote and special invited speakers, presenting them with saplings as a symbolic gesture of growth and sustainability. He commended the researchers for their valuable contributions and encouraged all attendees to engage actively, foster connections, and share knowledge throughout the event.

Prof. (Dr.) Pradeep Joshi, Group Additional Pro-Vice Chancellor, Director General and Dean, Faculty of Applied Arts/ Fine Arts/ Performing Arts & Visual Arts delivering the inaugural address

Following the welcome address, **Ms. Divya Chauhan,** Chairperson, Amity School of Fashion Technology, Amity School of Fine Arts & Amity School of Performing Arts & Advisor ICITT'25, encouraged attendees to actively engage in the sessions and leverage the insights shared by the speakers to enhance their knowledge and professional pursuits.

Ms. Divya Chauhan, Chairperson, Amity School of Fashion Technology, Amity School of Fine Arts & Amity School of Performing Arts & Advisor ICITT'25 addressing the delegates and the audience

The keynote address was delivered by **Mr. Ashok Kumar Malhotra,** Mission Director (NTTM), who discussed the Government of India's initiatives for promoting technical textiles. Mr. Malhotra outlined three key government schemes aimed at advancing the technical textile sector: Research Schemes, which promote innovation and product development; the PM Mitra

Scheme, focused on establishing textile parks for large-scale manufacturing; and the Production Linked Incentive (PLI) Scheme, designed to enhance domestic production and attract investments. He emphasized India's shift from traditional textiles to high-performance technical textiles, highlighting their value-added applications across sectors like agriculture, healthcare, and infrastructure. Noting that India ranks as the fifth-largest technical textile market with $24 billion in imports and $2.6 billion in exports, he shared the government's vision to expand the market to $50 billion by 2030. Additionally, he stressed the importance of worker awareness regarding advancements in textile technology, including watershed looms and modern manufacturing techniques. The session concluded with a discussion on available grants, funding mechanisms, and application processes for startups in the technical textile sector.

Mr. Ashok Kumar Malhotra, Mission Director (NTTM), National Technical Textiles Mission, Ministry of Textiles delivering the keynote address.

Dr. Seshadri Ramkumar, Professor, Nonwovens & Advanced Materials Laboratory, Texas Tech University, USA, stressed on the use of waste materials in technical textiles and how cotton waste, which has low market value, can be repurposed for functional textiles. He demonstrated an experiment using cotton fibers to absorb oil, showcasing their potential in environmental clean-ups. He also provided insights into the global technical textile market, which is valued at $230 billion, with the USA leading in advanced textiles. Dr. Ramkumar highlighted how India demonstrated self-sufficiency during the COVID-19 pandemic by producing N-95 masks, reducing dependency on imports. Additionally, he introduced a decontamination wipe as an example of functional technical textiles.

Dr. Seshadri Ramkumar, Professor, Nonwovens & Advanced Materials Laboratory, Texas Tech University, USA sharing his insights.

Dr. Arindam Basu, Director General, Northern India Textile Research Association explored the advancements in smart textiles, emphasizing their applications in health monitoring, sportswear, and defense. These textiles integrate sensors for data collection, body temperature regulation, and motion tracking. He categorized the primary components of smart textiles into sensors (including force, temperature, and physiological sensors), data processing units, power supply mechanisms, and actuators. Highlighting washability as a significant challenge, Dr. Basu underscored the need for research into durable and long-lasting solutions. He also discussed innovations such as detachable sensors in sportswear and wearable electronics designed for defense applications.

Dr. Arindam Basu, Director General, Northern India Textile Research Association (NITRA) delivering his speech

Dr.V.K.Kothari, Emeritus Professor, IIT, Delhi, classified textiles into three broad categories: Clothing, which prioritizes comfort, durability, and aesthetics; Home Textiles, which emphasize design and functionality; and Technical Textiles, which focus on performance and innovation. He highlighted smart textiles as the future of the industry, encouraging designers to thoughtfully integrate functionality into their creations, such as incorporating fire-retardant properties into kitchen wear. Additionally, he discussed the significance of single-use functional textiles like sanitary napkins and specialized wipes, stressing the need to balance longevity with optimal performance.

Dr.V.K.Kothari, Emeritus Professor, IIT, Delhi, presenting his viewpoints in ICITT'25

From (L-R) Dr. Arindam Basu, Director General, Northern India Textile Research Association (NITRA), Mr. Ashok Kumar Malhotra, Mission Director National Technical Textiles Mission (NTTM), Ministry of Textiles, Prof. (Dr) Pradeep Joshi, Group Addl. Pro Vice Chancellor, Director General & Dean, Faculty of Applied Arts/Fine Arts/Performing Arts & Visual Arts, Amity University, Noida & Conference Chair, Prof. (Dr.) V.K. Kothari Emeritus Professor, IIT Delhi

Technical Session-I commenced with the address by **Mr. Varun Vaid**, Business Director, Wazir Advisors. He discussed the transformative role of technical textiles in driving India's development by 2047, envisioning innovations like smart infrastructure with self-repairing roads, advanced healthcare solutions, and smart agro-textiles equipped with sensors for controlled nutrient release. To strengthen the technical textile sector, he proposed a five-point action plan emphasizing ecosystem support, enhancing consumer awareness, fostering Foreign Direct Investment (FDI) partnerships, promoting skill development, and mandating industry standards.

Mr. Varun Vaid, Business Director, Wazir Advisors, addressing the audience

Mr. Charan Singh, Senior Director, UL Solutions, highlighted the significance of sustainable textile production, focusing on the growing demand for transformative clothing like athleisure and workwear that offer both functionality and comfort. He emphasized the adoption of biodegradable textiles as an eco-friendly alternative, the importance of sustainability-driven production processes, and the need for India to prioritize sustainable innovation to remain competitive in the global textile market.

Mr. Charan Singh, Senior Director, UL Solutions, delivering his address

Mr. Munish Tyagi, Senior Consultant-Textile industry & projects at Nuovatex Projects Co., offered insights into the classification and market size of technical textiles, categorizing them into Personal & Hygiene, Institutional & Industrial, and Infrastructure-related Textiles. He highlighted India's robust annual growth rate of 6.7%, driven primarily by the healthcare, infrastructure, and automotive sectors. Additionally, he emphasized the country's focus on research and development, supportive government policies, and skill development initiatives as key factors contributing to the sector's expansion.

Mr. Munish Tyagi, Senior Consultant- Textile industry & projects at Nuovatex Projects Co., delivering his viewpoints

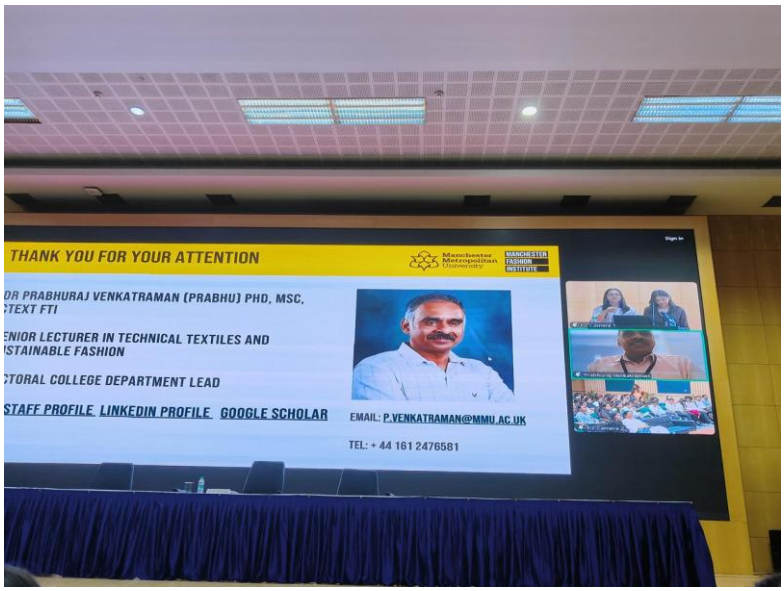
Mr. Nikunj Bagdia, Managing Director at Ken Enterprises Limited, addressed the global technical textiles industry, with a particular focus on sportswear. He highlighted India's limited research and development capabilities, contrasting it with countries like Vietnam, which leads in sports shoe production. To enhance India's competitiveness, he introduced the VIKSIT BHARAT framework, emphasizing six key pillars: **V** for Value-driven growth, **I** for Innovation, **K** for Knowledge, **S** for Sustainability, **I** for Industry advancement, and **T** for Textiles development.

Mr. Nikunj Bagdia, Managing Director at Ken Enterprises Limited, addressing the audience

This session underscored the importance of advanced manufacturing, research-backed innovation, and high-performance materials in strengthening India's technical textile sector.

Technical Sessions on the themes "***Sustainable Materials for Technical Textiles***", "***Recent Advancements in Technical Textiles***, and "***Role of Technical Textiles in Fashion and Apparel Industry***", were also held during the Conference.

The invited speaker for Technical Session II was **Dr. Prabhuraj Venkatraman**, Senior Lecturer at Manchester Fashion Institute, Manchester Metropolitan University, UK. He Delivered an insightful talk on the history, sustainability, and modern applications of bark cloth. He explained the traditional use of bark cloth, extracted initially from bark trees, and how it has evolved into a sustainable textile option. He highlighted that bark cloth can now be stitched, processed into fibers, and integrated into fabric production, making it a versatile alternative in a sustainable fashion. His talk underscored the potential of natural materials in reducing fashion's ecological footprint.
The session was followed by paper presentations on different topics related to *Sustainable Materials for Technical Textile.*



Dr. Prabhuraj Venkatraman, Senior Lecturer at Manchester Fashion Institute, Manchester Metropolitan University, UK

Technical session-III commenced with the address of invited speaker **Dr. Hughes-Riley,** Associate Professor in Electronic Textiles, Nottingham Trent University (United Kingdom). He Discussed the advancements and applications of e-yarn technology in various industries. He also explained electronic yarn (e-yarn) integration into wearable textiles to enhance functionality in sectors such as healthcare, wellbeing, and the military. In healthcare, e-yarn can be used for monitoring vital signs, while in military applications, it aids in temperature regulation and adaptive clothing. One key example he highlighted was the use of temperature controlled vests, which help regulate body heat in extreme conditions. His presentation emphasized how e-textiles are shaping the future of smart clothing, offering innovative solutions that combine technology and textiles for enhanced performance and comfort.

Prof. Theo Hughes-Riley, Associate Professor in Electronic Textiles, Nottingham Trent University, UK delivering his presentation

The session was followed by paper presentations on different topics related to "*Recent Advancements in Technical Textiles"*.

For Technical session-IV, the invited speaker was **Dr. Arunangshu Mukhopadhyay**, Professor, Department of Textile Technology, Dr B R Ambedkar National Institute of Technology, Jalandhar, who focused on the challenges faced in assessing material characteristics in the fashion industry. The speaker highlighted the complexities of evaluating textile materials, including durability, sustainability, performance, and comfort. He discussed the need for advanced testing methods to ensure quality control, compliance with industry standards, and improved consumer satisfaction. The session also emphasized the role of technology in material evaluation, addressing issues related to fabric composition, environmental impact, and innovation in textile production to meet the evolving demands of the fashion industry.

Dr. Arunangshu Mukhopadhyay, Professor, Department of Textile Technology, Dr B R Ambedkar National Institute of Technology, Jalandhar

The session was followed by paper presentations on the topics related to "*Role of Technical Textiles in Fashion and Apparel Industry*", Researchers and experts highlighted recent advancements in the field, exploring innovative approaches to enhance the functionality, durability, and eco-friendliness of textile products. Additionally, discussions emphasized the pivotal role of technical textiles in the fashion and apparel industry, showcasing how sustainable materials and smart textile applications are driving innovation. The presentations underscored the growing importance of integrating technical textiles to meet consumer demands for performance-driven, environmentally responsible fashion solutions.

The International Conference on Innovations in Technical Textiles'2025 featured an impressive lineup of research paper and poster presentations from renowned institutions including, Amity University, Haryana, Amity University, Rajasthan, Amity University, Uttar Pradesh, Banasthali Vidyapith, Jaipur, DKTE's, Ichalkaranji, Government Polytechnic, Bareilly, Institute of Technical Textiles Pvt Ltd, Sonipat, Haryana, Jawaharlal Darda Institute of Engineering & Technology, Yavatmal, Lady Irwin College, Delhi, Maharaja Ranjit Singh Punjab Technical University, Bathinda, NIFT, Chennai, University of Delhi, Panipat Institute of Engineering and Technology, Panipat, School of Design(UPES),Dehradun, SGT University, Gurugram, Sharda University, Greater Noida, Shri Venkateshwara University, Uttar Pradesh, The Technological Institute of Textile and Sciences, Bhiwani, Whistling Woods International Ltd., Mumbai.

Researchers and delegates at ICITT-2025

The conference provided an enriching platform for exchange of ideas, solutions, and aspirations, driving innovations in the dynamic field of technical textiles. Concluding the event, Dr. Pratibha Malik, the Conference Convener, delivered the Vote of Thanks, expressing her gratitude to the esteemed speakers, researchers, faculty members, students, IT team, and the entire organizing committee for their unwavering dedication and contributions.

Conclusion:

The International Conference on Innovations in Technical Textiles for Viksit Bharat provided a comprehensive overview of advancements, challenges, and opportunities in the sector. The discussions highlighted India’s potential to become a global leader in technical textiles, provided it focuses on R&D, sustainability, entrepreneurship, and government support. Key takeaways included:

- The need for increased awareness and workforce training in new textile technologies.
- The importance of smart textiles, sustainable production, and protective clothing.
- Government initiatives and funding opportunities that can drive growth.
- The export potential and India’s strategy for global market expansion.

With continued investment in innovation and collaborations between industry, academia, and government, India's technical textile industry is poised for significant transformation, contributing to its vision of becoming a developed nation by 2047.