



**FUNCTIONAL TEXTILES &
CLOTHING CONFERENCE**

Organized by



IIT Delhi

in Association with



WUD, Sonapat

4th International Conference on **Functional Textiles & Clothing**

31st January - 2nd February, 2025

IIT Delhi, New Delhi, India

Programme Schedule

Partner Universities



THE SWEDISH SCHOOL
OF TEXTILES
UNIVERSITY OF BORÅS



University of
HUDDERSFIELD

ensait
E-COLORED INNOVATORS TEXTILE

LL Université
de Lille

NEW DELHI

www.ftcconference.in

31st January 2025

DAY

2:30 PM - 5:00 PM

**FTC Sustainability and Circularity Workshop
(University of Boras & IIT Delhi)**

Venue: LH-212

4:30 PM onwards:

Registration and Tea

Venue:

Central Atrium, LHC, IIT Delhi

Inauguration and Global FTC Excellence Awards 2025 Ceremony

6:30 PM - 7:30 PM | Venue: LH-111

Keynote
address-I

Prof. Tushar Ghosh

NC State University, USA

Biomimicry: An approach to Innovation in textiles

Venue: LH-111

7:30 PM onwards | Inaugural Dinner

1st February 2025

DAY

Technical Session-I | 9:00 AM - 11:00 AM

**Parallel session IA:
Digital Fashion**

Venue: LH-108

**Chair : Prof. Ambika
Magotra**

SPEAKERS

**Dr. Helga Berta Edith
Behrmann**

Digital Sports Fashion as a
Successful Concept of Physical
Self-Optimization

Prof. Devender Kharb

Advent of digital fashion and
virtual Prototyping

Prof. Manuprasad K. Mathew

AI in Fashion System- Design to
Customer Feedback

**Parallel session IB:
Education and Ergonomics**

Venue: LH-111

**Chair : Prof. Rabi
Chattopadhyay**

SPEAKERS

Dr. Kingshuk Mukherjee

Declining Demand for
Professional Textile Design
Programs in Indian Higher
Education Institutions

Prof. Plavilayil John Varghese

AI in Design Education: Human
Machine Symbiosis for Success

Prof. Satya Suman

Pattern Engineering Framework
for the Design of Contemporary
Functional Officewear

**Parallel session IC: Clothing
Design for special needs - I**

Venue: LH-114

**Chair : Prof. Vidushi
Vashishtha**

SPEAKERS

Dr. Norsaadah Zakaria

Analysis of Chinese elderly
women's lower body shape
from anthropometric data

Dr. Nilanjana Bairagi

Designing fashionable functional
clothing for diabetes patients
on insulin treatment

Dr. Babita Bhandari

Assistive inclusive clothing
design for visually impaired
people

Dr. Norsaadah Zakaria

Modeling a Sustainable Mass Customization Apparel Development System
Integrating Dynamic Target Sizing and Automated CAD Generation using Malaysian Anthropometric Data

Ms. Vaishnavi Pandey

Examining already established mass customization set-up in the apparel industry: Suggestion and Case study

Ms. Aastha Deshpande

Consumer Tech-gagement in fashion retailing in online & offline purchases using augmented reality in Delhi

Ms. Deepshikha Phogat

Fashion's Digital Renaissance: AR as a Catalyst for Cultural Preservation

Ms. Hemalatha N.L.

AI-Powered Design: Boosting Sustainability and Cost Efficiency in Kids' Garment Manufacturing

Ms. Madhu Latha Lingam

Evaluation Of Compression Points For Designing Zumba Bra

Ms. Aditi Saxena

Decolonizing textile and fashion education: Problematizing the fashion curriculum in higher education in South-Asia

Ms. Sushmita Basak

Development of Ergonomically designed Mastectomy Bra and Breast Prosthetics for Indian Breast Cancer Survivors

Mr. Chakravarthy Palanisamy

Analyzing body-garment distance through 3d scanning for enhanced apparel fit evaluation

Ms. Sukanya Devi R

Participatory Ergonomics for Mitigation of Musculoskeletal Disorders among Silk Hank Dyers in Western Parts of Tamil Nadu, India

Dr. Kundlata Mishra

Tailored for Ability: User-Centric Adaptive Wear Solutions for Cerebral Palsy

Ms. Madumita Salu

Sokkalingam Culturally adaptive and innovative clothing design for male Parkinson's patients in south India

Ms. Uma Maheswari B

Development of commuter jeans

Dr. Deepti Pargai

Exploration of protective properties in Capparis decidua for Kids clothing

Md. Kafeel Ahmad

Sustainable apparels for men and women: Design explorations based on user preferences

Tea Break | 11:00 AM - 11:30 AM

Plenary Session | 11:30 AM - 1:00 PM

Keynote
address-II

Prof. Ashutosh Sharma

Indian Institute of Technology Kanpur, India

Harnessing Self-organisation in Confined Soft Materials for Micro- Nanofabrication

Venue: LH-111

Keynote
address-III

Prof. Britta Gammelgaard

University of Southern Denmark

Regenerative Supply Chains in the Textile Industry: the Way Forward

Keynote
address-IV

Prof. Parikshit Goswami

University of Huddersfield, UK

Textile Materials in Medical Technology - A Symbiosis of Fundamental and Applied Research

Keynote
address-V

Prof. Rudrajeet Pal

University of Borås, Sweden

Functionalizing Sustainable and Circular Textile Economy through Data-driven Decision Making

Group Photograph | 1:00 PM - 1:15 PM | Front Steps of LHC

Lunch Break | 1:15 PM - 2:00 PM

Technical Session-II | 2:00 PM - 3:30 PM

Parallel session 2A: Sustainable & Circular Textiles

Venue: LH-108

Chair : Prof. Sunil Luthra

SPEAKERS

Prof. Chenyu Du

Biorefining technology for the valorisation of textile waste

Mr. Rajesh Bahl

Sustainable consumption of clothing: Second-hand clothing use in the Australian context

Dr. Nidhi Sisodia

Effect of accelerated weathering on sustainable agricultural mulching using sunnhemp and banana fibers

Mr. Satya Karmakar

Development of Circular Apparel with Good Handle Properties from Post-Consumer Denim Wastes

Ms. Kriti Srivastava

Extending the circularity concept - an exploration in use of shoddy yarn in premium soft furnishing products

Mr. Nand Singh Gahlot

Implementation of reeled and spun silk yarns for diversification of handloom products

Dr. Annu Kumari

Exploration of Indian Kurta silhouette through zero waste pattern cutting.

Parallel session 2B: Protective Textiles

Venue: LH-111

Chair : Dr. Arindam Basu

SPEAKERS

Dr. M.S. Parmar

Developing lightweight extreme cold climate clothing using high clo value weed fibres

Dr. Nandan Kumar

Protection against arc-flash fire: HPT Aracore Gloves

Dr. B. R. Das

Textile Materials for Defence: CBRN Suit

Dr. Viju S

Enhancing Thermal Insulation through Aerogel-Integrated Nonwovens

Mr. Sayak Nandi

A novel second-degree test protocol for simulating smoke particle exposure to wildland firefighter's clothing for wildland-oilfield interface fires

Md. Zayedul Hasan

Effect of weave pattern on low-stress mechanical properties of cut protective workwear fabric

Md. Jawad Ibn Amin

Response surface methodology analysis of the outer layer of fire protective fabric at different angles of heat exposure

Mr. Shubham Srivastava

Protection against small and large splashed of molten metal

Parallel session 2C: Circular Operations and Supply Chain Management

Venue: LH-114

Chair : Prof. Britta Gammelgaard

SPEAKERS

Dr. Xinyi Guan

Toward circularity in Textile Waste Management: Challenges, Innovations, and Strategic Actions

Dr. Athanasios Angelis Dimakis

Sustainability Assessment of Novel Textile Waste Processing Strategies

Dr. Patanjali Kumar

Integrating Ambidextrous Innovation Capabilities and Channel Coordination Mechanisms for Achieving Resilience and Viability in Sustainable and Circular Textile Supply Chain

Dr. Archana

Post-consumer Textile Waste Recycling Ecosystem: A Bibliometric Analysis, Framework and Strategy

Dr. Vidushi Vashishtha

Exploring the key drivers and barriers of digital twins in the fashion industry

Mr. Rajeev Ranjan Mahto

AI integration in fashion trend forecasting & garment design development

Tea Break | 3:30 PM - 4.00 PM

Technical Session-III | 4:00 PM – 5:30 PM

Parallel session 3A: Traditional Textiles, Craft and Design

Venue: LH-108

**Chair : Prof. P. John
Varghese**

SPEAKERS

Prof. Srivani Thadepalli
Comparative impact of
traditional canal washing and
tank washing systems on
Kalamkari printed fabrics of AP

Dr. Manmeet Sandhu
The Confluence of Fashion and
Contemporary Indian
Subcontinent Art

Prof. Ambika Magotra
Revival of age-old traditional
Indian mending techniques for
preservation and conservation
of textiles

Mr. Amardeep Rabha
Significance of traditional
costume, clothing, and its motif
in the Rabha society

Ms. Divya Kumari
Evolution of Bagru craft in the
age of commercialization:
Unraveling the threads of
authenticity

Mr. Ranjit Kumar
Preservation of Gendra craft as
a tool of resilience for homeless
people through convertible
garment

Ms. Ashima Gupta
Influence of temple architecture
on Ikats of Odisha

Parallel session 3B: Fibres & Colours from Natural Resources

Venue: LH-111

Chair : Prof. Wazed Ali

SPEAKERS

Dr. Sambhu Chattopadhyay
Development of Banana Fibre
based Ternary Blended Textile &
Clothing and its Eco-friendly
Processing

Mr. Gaurav Agrawal
Sustainable and Value Added
Manmade Cellulosic Fibres (MMCF)
for Textile & Fashion Industry

Dr. Viraj Uttamrao Somkuwar
A Review on Non-Destructive Silk
Cocoon Testing Methods for
Measuring Quality Parameters

Dr. Meenakshi Ahirwar
Silk in technical textiles & non-
textile applications: Bridging
tradition with technological
innovation

Mr. Saikat Ghosh
From Waste to Fibre:
Electrospinning Cellulosic Materials
from Post-consumer Waste for
Sustainable Materials

Dr. Pooja Singh
Falconeria insignis: A Novel Plant
Source for Sustainable finish on
Museum Textile Antiquities

Sandeep Kaswan
Eco-Friendly Dyeing of Eri Silk
Using Plant-Based Dyes and
Mordant

Parallel session 3C: Clothing Design for Special Needs - II

Venue: LH-114

**Chair : Prof. Devender
Kharb**

SPEAKERS

Dr. Kanchana Dissanayake
Circular Transformation in the
Workwear Industry: Challenges,
Pressures, and Opportunities

Prof. Mark Watson
Empowering the designer
through strategy

Dr. Ramakrishnan G
Design and Development of
Fashion Accessories by Colour
and Weave Effect Using Naturally
Dyed Yarns on Handloom Fabrics

Mr. Prasanta Das
Design and development of
affordable bikers denim with
high-performance and natural
fibres

Ms. Krutika V Kulkarni
Improvising the Indian Traffic
Police Reflective Safety Jackets:
Enhancing Safety and Comfort

Ms. Rucha Sadashiv Kulkarni
Redefining Fashion: Aesthetic
Solutions for Adaptive Clothing
Needs for Lower Body
Disabilities

**Ms. Subhalakshmi Kropi
Bhuyan**
Sportswear related barriers:
Adaptive Sportswear for
Wheelchair Tennis Players of
India

Poster Session | 5:00 PM – 6:00 PM

**Functional Clothing Contest and Fashion Show | Prize Distribution
6:00 PM – 8:00 PM**

Gala Dinner | 8:00 PM Onwards

Technical Session IV | 9:30 AM – 11:00 AM

**Parallel session 4A:
Sustainable and Circular
Fashion****Venue: LH-108****Chair : Prof. Yamini Jhanji
Dhir****SPEAKERS****Ms. Garima Raj**

Innovative Approach towards
Circular Fashion by Transforming
Waste into Sustainable Solutions

Ms. Kulbir Kaur

Individual upcycling as recreational
activity

Ms. Sonal Chauhan

Value- driven Design
Developments to Encourage
Responsible Consumption of
Fashion Clothing

Ms. Sayoni Nath

Process-Standardization and
Evaluation of Efficacy in case of
Up-Cycling of Old-Shirt: A
Systematic Approach Towards
Circular Fashion

Ms. Rupanshi Singh

Closing the loop - sustainable
fashion from fabric waste of Bagru
printing

Mr. Chandramouli N

A Wardrobe Study on Clothing
Consumption and Disposal
Patterns Among Men in Kannur,
Kerala: Towards a Circular Fashion
Approach

Ms. Silpinwita Das

The Functional Aspects of Indigo-
Dyed Fabrics and Product
Development Using Various
Techniques

**Parallel session 4B:
Healthcare and Medical
Textiles****Venue: LH-111****Chair : Prof. Mangala Joshi****SPEAKERS****Mr. Sagnik Ghosh**

3D printed next generation
bone scaffolds

Ms. Meenal Agrawal

Pickering emulsion-templating
for green synthesis of poly (E-
caprolactone) scaffolds

Dr. Indumathi TR

Development of Sustainable
Antifungal Nonwoven Fabric
Using Hibiscus Sabdariffa Bast
Fibre

Ms. Greeshma S

Investigation of Electrospun
Nanofibers of Cassia fistula
Induced Chitosan for Wound
Healing

Ms. Ashitha Preman Karayil

Jerusalem Artichoke Extracts in
Alginate Fibres for Wound
Dressing

Mr. Arpan Kharva

Studies on Various Absorbency
Characteristics of Eco-Friendly
Sanitary Napkins

**Dr. Krishnasamy
Jagatheesan**

Study on flyout behaviour of
Polyester and Nylon Spindle
Tapes in Ring Spinning Drive
System

**Parallel session 4C:
Composites and Technical
Textiles****Venue: LH-114****Chair : Prof. R. Alagirusamy****SPEAKERS****Dr. Ranajit Kumar Nag**

Contribution of Fibre Lumen on
the Void Content of Jute Polyester
Unidirectional (UD) Composites

Dr. Shravan Kumar Gupta

A Study on Thickness Loss of Hand
Tufted Carpets after Prolonged
Heavy Static Loading

Dr. Ramachandran R

Extraction of helicteres Isora fibre
and its potential application in agro
Textiles

Mr. Siddhi Vardhan Singh Rao

Acoustic and Aesthetic
Characterisation of Polyester
Warp-Knitted Fabrics for Enhanced
Building Acoustics

Mr. Vikas Verma

Optimising Stuffer-to-Binder Ratio
in 3D Woven HMWPE Fabric
Composites for Enhanced
Mechanical Properties

Mr. Subhradeep Maitra

Packaging materials as marine fish
freshness indicator

Ms. Ritika Panwar

Effect of milling on the fly ash/OTES
treated cotton nonwoven fabrics
on oil- water separation applications

Tea Break | 11:00 AM - 11:30 AM

Plenary Session | 11:30 AM – 1:00 PM | Venue: LH-111

Keynote
address-VI

Prof. Malgorzata Zimniewska
Inst. of Natural Fibres & Medicinal Plants, Poland
Sustainability of natural fibre functional clothing

Keynote
address-VII

Prof. Amit Rawal
Indian Institute of Technology Delhi, New Delhi, India
Tensile Mechanics of Continuous and Disordered Fibrous Mats: A Tale of Two-Length Scales

Keynote
address-VIII

Mr. Ajay Sardana
President, Reliance Industries Ltd.
Opportunities & Potential of the Functional Textiles & Clothing for the Indian Textile Sector

Keynote
address-IX

Mr. Sudipto Mandal
Senior Manager, Oerlikon Textile India Pvt. Ltd.
Environment Friendly Recycling Solutions

FTC Trail Blazers Panel Discussion | 1:00 PM - 1:45 PM

Lunch Break | 1:45 PM - 2:30 PM

Technical Sessions V | 2.30 PM - 4.00 PM

**Parallel session 5A:
Smart and E-textiles**

Venue: LH-108

**Chair : Prof. Ashwini K.
Agrawal**

SPEAKERS

Mr. Robin Oberlé
Development of an NFC antenna
multiplexing system for the
application in smart textiles

Mr. Waldemar Lang
Development of a tactile
feedback system for the guidance
of independent rehabilitation in
Smart Textiles

Mr. Siddharth Shukla
Modulating the Wetting
Behaviour of Woven Gas
Diffusion Layers in Proton
Exchange Membrane Fuel Cells

Ms. Gethsia Judin L
Development of textile-based
surface electrode for bio-signal
monitoring

Ms. Anshika Agarwal
Awareness level of consumers
towards wearable e-textiles

Dr. Yamini Jhanji Dhir
Moisture management properties
of rib knit structures intended for
next to skin applications

**Parallel session 5B:
Natural Fibres**

Venue: LH-111

**Chair : Prof. Samrat
Mukhopadhyay**

SPEAKERS

Dr. Sankar Roy Maulik
Water Hyacinth: A Wearable Weed

Dr. Kartick K Samanta
Circular Economy in Nettle Fibre
Plant for Applications in Textile and
Other Industries

Mr. Vishwajeet
Investigating Effect of Blend Ratio
and Twist on Properties of Yarn
Made from Himalayan Nettle
(*Girardinia diversifolia*)
and Polyester Fibres

Ms. Aditi Kushwaha
Utilizing Pearl Millet (*Pennisetum
glaucum*) Crop Waste: A Journey
from Fibre Extraction to
Sustainable Yarn Development

Ms. Shivali Sahni
Effect of Chemical Treatment for
Extraction of Fibres from Indian
Industrial Hemp (*Cannabis sativa*)

Mr. Guddy Prajapati
Bleaching of Pearl Millet
(*Pennisetum glaucum*) Fibres

**Parallel session 5C:
Protective Textiles**

Venue: LH-114

Chair : Dr. M. S. Parmar

SPEAKERS

Dr. Virendra Kumar Gupta
Role of Textile Finishing Chemical
in Improving UPF of
abrics/Garments

Mr. Jyotirmoy Das
Development of Stab Resistant
Armour through Synergistic Effect
of Boron Carbide (B4C) Ceramic
Particles and Shear Thickening
Fluid Treated P-aramid Fabric

Dr. Roopam Chauhan
Analysis of impact energy
absorption and comfort
characteristics of 3D knitted
fabrics impregnated with shear
thickening fluid

Dr. Shalini Juneja
Application of Mosquito Repellent
Finish on Cotton Fabric

Mrs. Priya G
Development and characterization
of hydrogel infused flame retardant
fabric

Md. Azharul Islam
Evaluation of Tensile Failure and
Energy at break in Hybrid High-
Performance Yarns

Valedictory | 04:00 PM – 4:30 PM | Venue: LH-111

Closing Tea-Coffee | 4:30 PM - 5:00 PM

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