



FUNCTIONAL TEXTILES & CLOTHING CONFERENCE

31st January - 2nd February, 2025

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Organized by

in Association with



IIT Delhi



WUD
WORLD
UNIVERSITY OF
DESIGN

WUD, Sonipat

Conference Venue:

Lecture Hall Complex (LHC), IIT Delhi, Hauz Khas, New Delhi - 110016.

31st January 2025

DAY

02:30 PM - 05:00 PM **FTC Sustainability and Circularity Workshop (University of Boras & IIT Delhi)**

Venue: LHC-213

4:30 PM onwards: **Registration and Tea**

Venue: Central Atrium, LHC, IIT Delhi

06:30 PM - 07:30 PM | Inauguration, FTC Excellence award ceremony

Keynote address-I

Prof. Tushar Ghosh

NC State University, USA

Biomimicry: An approach to Innovation in textiles

Venue: LHC-111

07:30 PM onwards | Inaugural Dinner

1st February 2025

DAY

Technical session-I | 09:00 AM - 11:00 AM

Parallel session 1A:
Digital Fashion

Venue: LHC-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 1B:
Education and Ergonomics

Venue: LHC-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 1C: **Clothing Design for special needs - I**

Venue: LHC-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 – 01:00 PM

Keynote address-II**Prof. Ashutosh Sharma**

Indian Institute of Technology Kanpur, India

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

Keynote address-III**Mr. Ajay Sardana**

President, Reliance Industries Ltd.

Opportunities & Potential of the Functional Textiles & Clothing for the Indian Textile Sector

Keynote address-IV**Prof. Britta Gammelgaard**

University of Southern Denmark

Social-ecological Perspectives of Sustainability

Keynote address-V**Prof. Parikshit Goswami**

University of Huddersfield, UK

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

Group Photograph | 01:00 PM – 1:15 PM | Front steps of LHC

01:15 PM - 02:00 PM | Lunch Break

Technical session-II | 02:00 PM – 3:30 PM

Parallel session 2A:
Sustainable & Circular Textiles

Venue: LHC-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: LHC-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. 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: LHC-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 | 03:30 PM - 04.00 PM

Technical session-III | 04:00 PM – 05:30 PM

Parallel session 3A:
**Traditional Textiles,
Craft and Design**

Venue: LHC-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

Mrs. 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: LHC-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 Mordants

Parallel session 3C:
**Clothing Design for
special needs - II**

Venue: LHC-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 | 05:30 PM – 06:30 PM

Functional Clothing contest and Fashion Show | 06:30 PM – 08:00 PM

Gala Dinner | 8:00 PM Onwards

2nd February 2025

3
DAY

Technical session IV | 09:30 AM – 11:00 AM

Parallel session 4A:
Sustainable and Circular Fashion

Venue: LHC-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: LHC-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 (ϵ -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

Mrs. 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: LHC-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. Shравan 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 UHMWPE 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 – 01:00 PM

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

Prof. Rudrajeet Pal
University of Borås, Sweden
Functionalizing textile circular economy: a concurrent engineering perspective

Keynote address-IX

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

Panel Discussion [Trail Blazers] | 01:00 PM - 01:45 PM

Lunch Break | 01:45 PM - 2:30 PM

Technical sessions V | 02.30 PM – 4.00 PM

Parallel session 5A: Smart and E-textiles

Venue: LHC-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: LHC-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: LHC-114

Chair : Dr. M. S. Parmar

SPEAKERS

Dr. Virendra Kumar Gupta

Role of Textile Finishing Chemical in Improving UPF of fabrics/ 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 and Prize Distribution | 04:00 PM – 04:30 PM | Venue: LHC-111

Closing Tea-Coffee | 04:30 PM - 05:00 PM