



# THE 92ND TEXTILE INSTITUTE WORLD CONFERENCE PROGRAMME

3rd - 6th July 2023

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# World President's Welcome

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As World President of the Textile Institute I welcome you to The 92nd Textile Institute World Conference (TIWC 2023) which this year is being hosted by Conference Chairman Prof Parik Goswami CText FTI, the School of Arts and Humanities, and the Technical Textiles Research Centre (TTRC) at the University of Huddersfield, UK.

The conference theme, 'Sustainability of the Textile and Fashion Supply Chain – Transitioning to Zero Carbon and Zero Waste', is focused on identifying the current scenario as well as emerging sustainable practices and solutions throughout the whole supply chain of textile and fashion products, starting from raw materials to manufacturing processes, distribution and retailing, use by consumers and up to the end-of-life phases.

TIWC 2023 is the first international conference The Textile Institute has held since the COVID pandemic and it is a pleasure to welcome you all in person to this special event. The conference is an opportunity to network and share knowledge, discuss and make plans and to leave the conference with firm actions to transition to zero carbon and zero waste as set out by the TIWC 2023 theme.

The Textile Institute brings together designers, engineers, innovators, researchers, and practitioners from all textile and associated industries. I hope that this conference will help you to seek out new partnerships, collaborations, new friends, and work together to find solutions.

## **Malgorzata Zimmniewska**

### **TI President**

### **The Textile Institute**



# Conference Chairman's Welcome

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**Dear Delegates,**

On behalf of the organising committee, I warmly welcome you to the 92nd Textile Institute World Conference (TIWC) 2023 hosted by the University of Huddersfield.

The University of Huddersfield is dedicated to expanding the frontiers of human knowledge and aim to provide an exceptional environment for the development of researchers by encouraging multidisciplinary concentrations of research excellence such as institutes and research centres that are capable of providing first-class resources and attracting leading international collaborators. Over the last decade the University has won a number of awards and titles for its outstanding record for world-class teaching and developing students as independent learners and critical thinker. Some of the awards include the Times Higher Education University of the Year, and the first Global Teaching Excellence Award. Alongside, the University also has a growing reputation as a leader in the field of enterprise. In 2012 the University was awarded the prestigious Times Higher Education Entrepreneurial University of the Year and followed this up in 2013 and 2022 when it was awarded Queen's Awards for Enterprise: International Trade. We pride ourselves as being successful, global, and modern.

Indeed, the theme of this conference 'Sustainability of the Textile and Fashion Supply Chain – Transitioning to Zero Carbon and Zero Waste' is to address the biggest contemporary challenge that we face in today's world.

After oil and gas, the textile industry is the second most polluting industry globally and whilst initiatives such as Textiles 2030 in the UK are already causing consumers and industry to question what the future fashion-textile sector will look like as we head towards net zero, there is still a great opportunity to reimagine the wider textile landscape. After all, the global textile market was valued at \$993.6 billion in 2021 and is expected to grow at a compound annual growth rate of 4.0% from 2022 to 2030 and it will need strong leadership and initiatives to transition towards our Net Zero goal. Contrary to the popular believe, the fashion and textile industry has a huge impact even on the UK economy. In 2021, the industry generated a £62 billion gross value-added contribution to the UK's economy, supporting 1.3 million jobs and £23 billion in total tax revenue to the UK treasury.

However, whilst the industry makes enormous contribution to the economic growth and labour market engagement, it is also costly to our climate and ecosystem. It produces 8-10% of global CO<sub>2</sub> emissions, consumes 79 trillion litres of water per year, lead to ~20% of industrial water pollution from textile dyeing and other chemical processing, contributes to ~35% of oceanic primary microplastic pollution and produces >92 million tonnes of waste per year. Achieving net zero by 2050 is the biggest challenge the industry face today. Every challenge brings opportunities, but it will require all stakeholders from around the world to work together.

The ethos of this conference, hence, is solution-driven involving different stakeholders from divergent fields instead of just being subject-driven. Where best to host such a conference than Huddersfield in West Yorkshire!

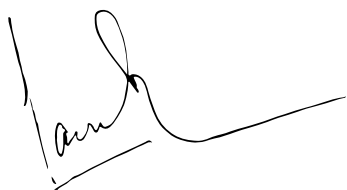
West Yorkshire is not only the centre of the UK textile industry, but arguably the longest established industrial cluster in the world, with the biggest concentration of textile activity in the UK. It is also a place of unparalleled scenic beauty. As the popular saying, "All work and no play doesn't just make Jill and Jack dull, it kills the potential of discovery, mastery, and openness to change and flexibility and it hinders innovation and invention", so please take some time to explore Huddersfield, and its beautiful surroundings. Based at the foothills of the Pennines and river Calder in the northeastern outskirts of the town, the landscape has exceptional scenic beauty! The rivers around the town provided soft water required for the textile industry during the early Victorian era making it a prominent mill town. Castel Hill is my particular favourite spot, but there are many more to explore. Please feel free to ask me and my colleagues and you will get a lot of suggestions.

I would take this opportunity to thank my colleagues at the University of Huddersfield and from The Textile Institute for their teamwork, collaboration and tireless work for this event. I am not mentioning any names in the fear of missing someone, but you know who you are and how much I appreciate all your contribution to this event. I would also like to include and thank the UK Fashion and Textiles Association for their amazing support with the conference.

On behalf of the organising committee, we would like to thank all of the sponsoring organisations for providing their generous support. A special thanks to our media and knowledge partners.

While concluding, I would like to take the opportunity to welcome each one of you and express my gratitude to the conference keynote speakers, session keynotes, paper and poster presenters, workshop conductors and participants for their contributions who are the foundation of this conference.

**I am confident that you will all find this conference interesting, and a learning platform to collaborate with like-minded colleagues. Enjoy your time at the conference and in Huddersfield!**



**Professor Parik Goswami**  
**Conference Chairman**



# Sponsors

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Thank you to all of our sponsors who have made this year's conference possible.

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# Media Partners

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textiles



# Committee

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## Conference Chair:

**Prof Parik Goswami**

University of Huddersfield, UK

## Organising Committee:

**Prof Parik Goswami** University of Huddersfield, UK

**Dr Andrew Hewitt** University of Huddersfield, UK

**Rachel Mountford** University of Huddersfield, UK

**Kate Melaugh** University of Huddersfield, UK

**Nicola Chiles** University of Huddersfield, UK

**Nicola Redmore** University of Huddersfield, UK

**Lorna Ingram** University of Huddersfield, UK

**Andrew Hebden** University of Huddersfield, UK

**Tim Smith** University of Huddersfield, UK

**Dr Sohel Rana** University of Huddersfield, UK

**Dr Devabrata Paramanik** University of Huddersfield, UK

**Bill Macbeth** University of Huddersfield, UK

**Martin Jenkins** University of Huddersfield, UK

## TI Events Committee:

**Rob Woollin** University of Huddersfield, UK

**Prof Subhash Anand MBE** University of Bolton, UK

**Prof Elizabeth Barnes** Manchester Metropolitan University, UK

**Dr Xiaogang Chen** University of Manchester, UK

**Prof Mervyn Davies** The Textile Institute, UK

**Stephanie Dick** The Textile Institute, UK

**Dr Kim Gandhi** The Textile Institute, UK

**Robyn Ingham** The Textile Institute, UK

**Helen Rowe** The Textile Institute, UK

**Ian Smith** Textile Consult Ltd, UK

**Prof Xungai Wang** Australian Future Fibres Research and Innovation Centre, Australia

**Prof Malgorzata Zimniewska**

Institute of Natural Fibres & Medicinal Plants, Poland

## Programme Committee:

**Long Lin** University of Leeds, UK

**Prof Stephen Russell** University of Leeds, UK

**Abhijit Mujumdar** Indian Institute of Technology, India

**Amit Rawal** Indian Institute of Technology, India

**Adam Mansell** UK Fashion and Textile Association, UK

**Prasad Potluri** University of Manchester, UK

**Amanda McLaren** AW Hainsworth, UK

**Alan Williams** Camira Fabrics, UK

**Steve Westland** University of Leeds, UK

**Kevin Almond** University of Leeds, UK

**Prof Elizabeth Barnes** Manchester Metropolitan University, UK

**Abdel-Fattah Seyam** NC State University, USA

**Sanjay Gupta** World University of Design, India

**Dr Rudrajeet Pal** University of Borås, Sweden

**Special thanks to all of our staff and students at the University of Huddersfield who have helped to make this conference possible.**



# Programme

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## Monday 3rd July

**15:00 – 17:00 :** Early Registration - Barbara Hepworth Building.  
Beverages & cakes

## Tuesday 4th July

**08:00 – 09:00 :** Registration – Barbara Hepworth Building.

Welcome refreshments – Level 3.

**09:00 – 09:15 :** Level 3 – Welcome - Prof. Parik Goswami, University of Huddersfield.

**09:15 – 09:25 :** Level 3 – Conference Opening - Tracy Brabin, Mayor of West Yorkshire.

**09:25 – 09:40 :** Level 3 – Opening address - Malgorzata Zimniewska, Textile Institute World President.

**09:40 – 10:05 :** Level 3 – Keynote speech - Sean Tindale, Polygiene.

**10:05 – 10:30 :** Level 3 – Keynote speech - Kate Goldsworthy, University of the Arts London.

**10:30 – 10:50 :** Morning break & refreshments – Level 3

## Parallel Session 1: 10:50 – 12:30

### Level 3

#### Natural Fibres & Biomaterials (1)

#### Session Chair - Adam Mansell



Jane Scott

Newcastle University, UK

THE LIVING TEXTILES ECOSYSTEM: A LOCAL TEXTILE BIOFABRICATION STRATEGY.

Athanasios Angelis-Dimakis

University of Huddersfield, UK

ASSESSING THE ENVIRONMENTAL IMPACT OF RECYCLED WOOL TEXTILES.

Anna Kicińska-Jakubowska

Institute of Natural Fibres and Medicinal Plants-National Research Institute, Poland

ACOUSTIC AND THERMAL INSULATION MATERIALS DEVELOPED FROM WASTE BAST FIBERS AND LOCAL SHEEP WOOL.

Lynn Wilson

University of the Arts London, UK

A REVIEW OF THE UK WOOL SECTOR.

Subhadeep Paul

University of Huddersfield, UK

STRUCTURE-PROPERTY RELATIONSHIPS OF WOOL FROM COARSE FIBRE BREEDS OF SHEEP IN UNITED KINGDOM.

## Level 4

### Technical Textiles & Composites (1)

#### Session Chair - Kate Goldsworthy

Mangala Joshi (Session Keynote)

Indian Institute of Technology

A SUSTAINABLE APPROACH: RECOVERED SILK SERICIN BIOMACROMOLECULE AND ITS REUSE AS FILMS AND NANOFIBERS FOR BIOMEDICAL APPLICATION.

Jenny Banks

National Composites Centre, UK

COLLABORATIVE OPPORTUNITIES FOR TEXTILES IN UNLOCKING A CIRCULAR COMPOSITES INDUSTRY.

Shuchita Tomar

Indian Institute of Technology

STUDY ON CERIUM OXIDE-BASED TPU NANOCOMPOSITE FILMS FOR IMPROVED WEATHER-RESISTANCE PROPERTY.

Bharti Rana

Indian Institute of Technology

UV PROTECTION AND GAS BARRIER PERFORMANCE OF ZINC STANNATE BASED TPU NANOCOMPOSITES.

Sajida Gordon

Nottingham Trent University, UK

DECARBONISING BY CAPTURING EFFICIENT TEXTILE DATA ENABLING IMPROVEMENT ACTIONS IN ACHIEVING ZERO CARBON.

## Create Lab

### Business Models & Supply Chain (1)

#### Session Chair - Malgorzata Zimniewska

Dr Phoebe Apeagyei

Manchester Metropolitan University

'SUSTAINING FASHION' HOW CAN DESIGN COMMUNICATION HELP?

Guy McKelvey

University of Huddersfield, UK

AN INVESTIGATION INTO THE TRANSPOSING OF FASHION COMMUNICATION AND BRANDING CONCEPTS WITHIN THE METAVERSE FROM A CONSUMER PERSPECTIVE FOR STREETWEAR BRANDS.

Patrick Roth

Natific AG, Switzerland

TRANSPARENCY IN TEXTILE SUPPLY CHAIN – WHY REAL, ACCURATE DATA IS ESSENTIAL.

Sören Gry

August-Wilhelm Scheer Institute, Germany

TOWARDS AN AI BASED RECOMMENDATION SYSTEM FOR SUSTAINABLE RETURN MANAGEMENT IN TEXTILE SUPPLY CHAIN.

Charles Ross

Performance Sportswear Design, RCA, UK

REGENERATIVE AGRICULTURE APPLIED TO FIBRES. WILL THIS FLIP APPAREL'S REPUTATION FOR BEING BAD?

**12:30 – 13:30:** Lunch – Barbara Hepworth Building.

Drop-in Textile Institute Special Interest Session 13:00 – 13:30 (Level 3).

Drop-in at The Maker Space (Level 3) with the University of Huddersfield Enterprise Team.

**13:30 – 13:55:** Level 3 – Keynote speech – Adam Mansell, UKFT, Chaired by Parik Goswami.

# Parallel Session 2: 14:00 – 15:20

## Level 3

### Technical Textiles & Composites (2)

#### Session Chair - Athanasios Angelis-Dimakis



Deepti Gupta (Session Keynote)

Indian Institute of Technology

LIGNOCELLULOSIC BIOMASS AS A SOURCE OF INDUSTRIAL ABSORBENTS AND ADSORBENTS.

Salem Aldosari

Cranfield University, UK

MESOPHASE PITCH POLYETHYLENE AND GRAPHENE BLEND FIBRES WITH IMPROVED STRAIN TO FAILURE AS POTENTIAL CARBON FIBRE PRECURSORS.

Deepali Singhee

Jadavpur University, India

A COMPARATIVE STUDY ON PHOTO-DEGRADATION AND PHOTO-YELLOWING CHARACTER OF JUTE FABRICS TREATED WITH SELECTED UV-ABSORBERS AND ANTIOXIDANTS USING EXHAUST (IN BLEACH-BATH) AND PAD-BATCH-DRY PROCESS.

Juneyoung Minn

Sookmyung Women's University, South Korea

SCREENING FLAME-RETARDANTS FROM NATURAL SOURCES FOR BACTERIAL CELLULOSE FABRICS.

## Level 4

### Education & Policy (1)

#### Session Chair - Jo Conlon



Sanjay Gupta (Session Keynote)

World University of Design, India

ADAPT OR GET LEFT: PREPARING FASHION DESIGN STUDENTS FOR THE ZERO-CARBON FUTURE.

Rohana U Kuruppu

Sri Lanka Technological Campus Research University

DESIGNING A CURRICULUM TO DEVELOP A SUSTAINABLE WORKFORCE FOR THE TEXTILE/CLOTHING INDUSTRY.

Collette Paterson

University of Edinburgh, UK

GROWING, HARVESTING AND PROCESSING FLAX TO INSTIGATE FIBRE, MATERIAL AWARENESS, COMMUNITY AND CHANGE.

Abu Sadat Muhammad Sayem

Manchester Metropolitan University, UK

ECO-DESIGN FRAMEWORK FOR REDUCING FABRIC WASTE AND CONSUMPTION DURING FAST FASHION PRODUCTION.

## Create Lab

### Garment Research (1)

#### Session Chair - Rudrajeet Pal



Zeeshan Azam

University of Manchester, UK

SUSTAINABLE SPORTS COMPRESSION GARMENT PRODUCTION THROUGH SEAMLESS KNITTING.

Kasey Hatch

University of Manchester, UK

DEVELOPING SIZING METHODOLOGY FOR WOMEN'S SPORTS COMPRESSION GARMENTS.

Doris YinChing  
The Hong Kong Polytechnic University  
ERGONOMIC DESIGN OF BADMINTON-SPECIFIC SPORTS BRAS FOR ATHLETES.

Aaron Zidichouski  
Manchester Metropolitan University, UK  
FRAMEWORK FOR SAMPLE SIZE SMART GARMENT PROTOTYPING WITH SCALABILITY UNDER  
SUSTAINABLE PRODUCTION METHODS.

**15:20–15:40:** Afternoon break & refreshments – Level 3

## Parallel Session 3: 15:40 – 17:00

### Level 3

#### Textile Coloration & Processing (1)

##### Session Chair - Abu Sadat Muhammad Sayem



Russell Thorpe (Session Keynote)  
VeriVide Limited, UK  
TWINNED TECHNOLOGIES FOR THE CONNECTED WORLD.

Buddy Penfold and Sally Gaukrodger – Cowan  
De Montfort University, UK  
TASSEL LEARNING: VALUING SKILLS THROUGH A LONG TIME LENS.

Jason Kent  
British Textile Machinery Association  
THE TEXTILE MACHINERY COMPLEXITY INDEX FORMING CIRCULAR INDUSTRIAL REVOLUTIONS.

### Level 4

#### The Circular Economy & LCA (1)

##### Session Chair - Chenyu Du



Jo Conlon  
University of Manchester, UK  
EDUCATING FOR CIRCULARITY – ESTABLISHING A FRAMEWORK TO IDENTIFY AND ADDRESS THE PRIORITY  
KNOWLEDGE GAPS IN FASHION EDUCATION.

Mazed Islam  
University of Southampton, UK  
ENVIRONMENTAL SUSTAINABILITY OF FASHION PRODUCT MADE FROM POST-CONSUMER WASTE.

Rudrajeet Pal  
University of Borås, Sweden  
TOWARDS A DYNAMIC DECISION SUPPORT SYSTEM FOR CONFIGURING POST-CONSUMER TEXTILE-TO-TEXTILE  
RECYCLING VALUE CHAIN.

Lynn Wilson  
Circular Design Scotland, UK  
BUILDING A CIRCULAR MATERIALS REPOSITORY. CONVEYING THE COMPLEXITY OF  
MATERIALS FOR CIRCULARITY.

### Starting Level 0 Reception Exhibition & tour



Matthew Taylor  
University of Huddersfield, UK  
Textile Exhibition at Heritage Quay  
Leaving Level 0 reception in Barbara Hepworth Building at 15:40  
Limited places available, please reserve a place at reception if you wish to attend.

**17:05 – 17:10:** Level 3 – Closing of Day 1 and details of dinner arrangements - Andrew Hewitt, University of Huddersfield.

**From 18:00:** Coaches from University of Huddersfield, Location – Barbara Hepworth Building atrium.

**From 19:00:** Drinks, dinner and awards at The Venue, Barkisland - return coaches to University of Huddersfield after the event.

## Wednesday 5th July

**08:00 – 09:00:** Registration – Level 0 at the Barbara Hepworth Building Atrium.

Welcome refreshments – Level 3.

**09:00 – 09:40:** Level 3 – Keynote event – Katie Greenyer roundtable with Joachim Sedelmier (Paul Smith).

**09:40 – 10:05:** Level 3 – Keynote speech – Prof. Stephen Russell, University of Leeds.

**10:05 – 10:30:** Level 3 – Keynote speech – Andrew Martin, Sustainable Apparel Coalition.

**Chaired by: Jess Power, University of Salford**

**10:30 – 10:50:** Morning break & refreshments – Level 3.

## Parallel Session 4: 10:50 – 12:30

### Level 3

#### **The Circular Economy & LCA (2)**

#### **Session Chair - Bhupendra Singh Butola**

Rachel Kelly

Manchester Metropolitan University, UK

CLOSING THE LOOP THROUGH CIRCULAR DESIGN EDUCATION.

Laetitia Forst

University of the Arts London, UK

BIOBASED MATERIALS LIFECYCLES: LEARNING FROM THE HEREWEAR SAMPLE COLLECTION.

Teena Antony

London College of Fashion, UK

POST-CONSUMER POLYESTER WASTE RECYCLING IN EUROPE; CHALLENGES AND OPPORTUNITIES OF CLOSED-LOOP PRACTICES.

Mazed Islam

University of Southampton, UK

EMERGING CONCEPTS AND IMPLICATIONS OF CIRCULAR ECONOMY AND SUSTAINABILITY TERMINOLOGIES IN FASHION AND TEXTILES.

Dr Saniyat Islam

RMIT University, Australia

A CRITICAL REVIEW OF LIFE CYCLE ASSESSMENT OF FASHION PRODUCTS.

### Level 4

#### **Natural Fibres & Biomaterials (2)**

#### **Session Chair - Katie Greenyer**

Jane McCann

Consultant, UK

HOW TO GUIDE DESIGNERS IN ADOPTING A MORE SUSTAINABLE, TEXTILE ORIENTED, PRODUCT DEVELOPMENT PROCESS?

Prabhuraj Venkatraman

Manchester Metropolitan University, UK

EVALUATION OF ANTIMICROBIAL PROPERTIES OF DENIM FABRIC FINISHED WITH PLANT-BASED NANO-EMULSIONS.

Abu Sadat Muhammad Sayem

Manchester Metropolitan University, UK

FRAMEWORK FOR ENVIRONMENTALLY SUSTAINABLE FASHION AND TEXTILE PRODUCTION TO ACHIEVE UNITED NATION (UN) SUSTAINABLE DEVELOPMENT GOAL (SDG) 12.

Janet Wilson

Classic & Modern Fabrics, UK

ARE TEXTILE GRADUATES ADEQUATELY PREPARED FOR TODAY'S RAPIDLY CHANGING WORKPLACE?

Monika Rom

University of Bielsko-Biala

WOOL FROM LOCAL SHEEP BREEDS - ZERO WASTE PLAN FOR LOCAL COMMUNITIES.

### **Create Lab**

#### **Technical Textiles & Composites (3)**

##### **Session Chair - Stephen Russell**



Elizabeth Amir

Shenkar College, Israel

SURFACE FUNCTIONALIZATION OF TEXTILE AS A TOOL FOR FABRICATION OF SMART FABRICS.

Goutam Bar

National Institute of Fashion Technology, India

EXTRACTION OF TEXTILE GRADE BAUHINIA VAHLII FIBRE AND CHARACTERISATION OF ITS ESSENTIAL PROPERTIES.

Kuldip Singh

Indian Institute of Technology

OPTIMUM CONDITIONS FOR THE CARBONIZATION OF KEVLAR FABRIC FOR ELECTROMAGNETIC INTERFERENCE SHIELDING.

Debra Carr

DSTL

EFFECT OF QUILTING THREAD AND PITCH ON BALLISTIC PROTECTIVE PERFORMANCE OF PARA-ARAMID FABRIC.

Saikat Ghosh

University of Huddersfield, UK

IN-SITU SYNTHESIS OF ZNO NPS USING NITRATE SALT.

**12:30 – 13:30 :** Lunch – Barbara Hepworth Building.

Drop-in Textile Institute Meet The Editors Session 13:00 – 13:30.

Drop-in at The Maker Space (Level 3) with the University of Huddersfield Enterprise Team.

## **Parallel Session 5: 13:30 – 15:10**

### **Level 3**

#### **Business models & supply chain (2)**

##### **Session Chair - Abhijit Majumdar**



Veronika Kapsali (Session Keynote)

London College of Fashion, UK

TRANSITIONING TO ZERO WASTE AND NET ZERO: LESSONS FROM BIOLOGY.

Anja Connor-Crabb

University of Leeds, UK

AN INVESTIGATION INTO THE IMPACTS OF BREXIT, COVID-19 AND CLIMATE CHANGE ON THE UK FASHION AND TEXTILE INDUSTRY.

Microfibre Research

Anna Marchiani – Reckitt & Helen Hill

Helen Hill – Nottingham Trent University

USING A LAUNDRY BOOSTER TO REDUCE THE ENVIRONMENTAL FOOTPRINT AND ENHANCE CLOTHING LONGEVITY.



Alice Hazlehurst  
University of Leeds, UK  
QUANTIFICATION OF MICROFIBRE RELEASE IN LAUNDERING

Elisabeth Allen  
University of Manchester, UK  
MICROFIBRE POLLUTION: SOURCE DIRECTED INTERVENTIONS THROUGH DESIGN.

#### **Level 4**

##### **Textile Coloration & Processing (2)** **Session Chair - Elizabeth Gaston**



Jeroen Schotsaert (Session Keynote)  
AGC Plasma Technology Solutions, Belgium  
GLASS MEETS TEXTILES - THE USE OF VACUUM PLASMA COATING FOR THE FUNCTIONALISATION OF TEXTILES.

Robert Mather  
Heriot-Watt University, UK  
Robert Dewhurst  
DISPELLING DOUBTS ABOUT TEXTILE PLASMA TREATMENTS.

Jasminder Kaur  
Banaras Hindu University, India  
SUSTAINABILITY APPROACH OF BANARASI BROCADE.

Peter Vickers  
Vickers Oils, UK  
SUSTAINABILITY: IMPACT ON TEXTILE LUBRICATION.

#### **Workshop sessions**

Limited places available, please reserve a place at reception if you wish to attend.

**15:20 – 15:40 :** Afternoon break & refreshments – Level 3.

**15:30 – 15:55 :** Level 3 – Interactive event – “Why the UK? West Yorkshire – leading the way in zero-carbon investments” with West Yorkshire Combined Authority

## **Parallel Session 6: 16:00 – 17:20**

#### **Level 3**

##### **Natural Fibres & Biomaterials (3)** **Session Chair - Mark Jarvis**



Laura Solomon  
University of the Arts London, UK  
EMBEDDING LIFECYCLE ASSESSMENT INTO THE INNOVATION PROCESS FOR A NEW BIODEGRADABLE TEXTILE MADE OF PINEAPPLE LEAF FIBRE.

Prabhuraj Venkatraman  
Manchester Metropolitan University, UK  
POTENTIAL OF NATURAL SUSTAINABLE BIOPOLYMERS WITH ANTIMICROBIAL PROPERTIES.

Malgorzata Zimniewska  
Institute of Natural Fibres and Medicinal Plants-National Research Institute, Poland  
LINEN AND HEMP FOR SUSTAINABLE TEXTILES.

## Level 4

### Technical Textiles & Composites (4)

#### Session Chair - Holly Morris



Bhupendra Singh Butola (Session Keynote)

Indian Institute of Technology

OPTIMISATION OF DISENTANGLED POLYETHYLENE LAMINATE STRUCTURE FOR SOFT BODY ARMOUR APPLICATIONS.

Hyunjin Kim

Sookmyung Women's University, South Korea

DEVELOPING SUSTAINABLE BACTERIAL CELLULOSE COMPOSITES USING MARINE POWDERS.

Debarati Bhattacharyya

Indian Institute of Technology

A STUDY ON THE CREEP BEHAVIOUR OF OZONE TREATED JUTE FABRIC/EPOXY COMPOSITES FILLED WITH OZONIZED AND PULVERIZED SISAL FIBRES.

#### Workshop sessions

Limited places available, please reserve a place at reception if you wish to attend.

**17:25 – 17:30:** Level 3 – Closing of Day 2 and details of show arrangements.

Nicola Redmore, University of Huddersfield.

**From 17:45:** Drinks reception and canapes at Oastler Building followed by Fashion & Costume show.

## Thursday 6th July

**08:00 – 09:00:** Registration - Barbara Hepworth Building Atrium

Welcome refreshments – Level 3.

**09:00 – 09:15:** Welcome – Andrew Hewitt

## Parallel Session 7: 09:20 – 10:40

### Level 3

#### Defined Applications

#### Session Chair - Andrew Hewitt



Adrian Wilson (Session Keynote)

Journalist, UK

THE UNIQUENESS OF DISPOSABLE NONWOVENS FOR HYGIENE AND THE CASE FOR THEIR SEPARATE CATEGORISATION.

Elizabeth Gaston

Northumbria University, UK

MODULAR KNITTED ARCHITECTURE

Holly V Morris

Pulvertaft Hand Centre, UK

MEDICAL TEXTILES IN THE GREENER OPERATING THEATRE.

The Circular Economy & LCA (3)

Hannah Auerbach George

Victoria and Albert Museum, UK

HARNESSING HISTORICAL TECHNOLOGIES IN THE DEVELOPMENT OF A CIRCULAR TEXTILE MODEL: THE FUTURE OF REGENERATED PROTEIN FIBRES.

## Level 4

### Technical Textiles & Composites (5)

#### Session Chair - Deepti Gupta

Jane Wood (Session Keynote)

University of Manchester, UK

COMMON APPAREL PERFORMANCE CHARACTERISTICS OF BACTERIAL CELLULOSE GROWN FROM KOMBUCHA.

Shubham Srivastava

Madhav Institute of Technology and Science, India

RECYCLED PARA-ARAMID YARN FOR PROTECTION AGAINST THERMAL HAZARDS.

Malindu Ehelagasthenna

Nottingham Trent University, UK

A NEURAL NETWORK APPROACH FOR PREDICTING THE OPTIMUM DESIGNING PARAMETERS FOR AN ACTIVE COMPRESSION TEXTILE.

Anna Doersam

University of Manchester, UK

TEXTILE-BASED SCAFFOLDS OF ELECTROSPUN PCL-PLA CORE-SHEATH NANOFIBER YARN FOR TISSUE ENGINEERING APPLICATIONS.

## Create Lab

### Garment Research (2)

#### Session Chair - Nicola Redmore

M S Cheema

University of Manchester, UK

DEVELOPMENT OF NONWOVEN GARMENT BY ADOPTING SPECIAL TECHNIQUE OF PATTERN AND 3D TECHNOLOGY, ENABLED NONWOVEN GARMENT ACCEPTABLE IN THE GARMENT INDUSTRY.

Ruqey Alhassawi

University of Manchester, UK

ANALYSIS OF ALGORITHMIC CLUSTERING OF 3D SCAN DATASET TO DEVELOP GARMENT SIZE.

Kristina Brubacher

University of Manchester, UK

THE SPORTS COMPRESSION GARMENT USER NEEDS MODEL: A NEW MODEL FOR USER-CENTRED DESIGN.

Phoebe Apeagyei

Manchester Metropolitan University, UK

SUSTAINABLE PROCEDURES IN COLLECTING ANTHROPOMETRIC DATA: EFFICACY IN REMOTE BODY MEASUREMENT OF SCHOOL CHILDREN FOR CLOTHING SIZING.

**10:40 – 11:15 :** Morning break & refreshments – Level 3.

**11:15 – 12:25 :** Panel discussion on the roadmap to Net-Zero chaired by Professor Parik Goswami. The panel members will be Mr Adam Mansell (CEO UKFT), Mr Alan Williams (CEO Camira Fabrics), Dr Richard Davies (Innovation, Technical, and Design Director, A W Hainsworth & Sons Ltd), and Professor Kate Goldsworthy (Chair of Circular Design & Innovation, University of the Arts London).

**13:00 – 13:45 :** Lunch – Barbara Hepworth Building.

Drop-in at The Maker Space (Level 3) with the University of Huddersfield Enterprise Team.

**13:45 – 14:10 :** Level 3 – Keynote speech – Abhijit Majumdar

# Parallel Session 8: 14:15 – 15:00

## Level 3

### Garment Research (3)

#### Session Chair – Jason Kent



Devabrata Paramanik

University of Huddersfield, UK

EXPLORING MOTION CAPTURE TECHNOLOGY TO TRANSFORM BOTH THE METHOD OF CREATING DESIGN AND PATTERN CUTTING FOR SUSTAINABLE FASHION DESIGN.

## Level 4

### Fashion & Textiles in Mourning

#### Session Chair – Adrian Wilson



Kevin Almond

University of Leeds, UK

THE DECLINE OF FEMALE MOURNING WEAR: A CASE STUDY ANALYSIS OF FREDERIC FORSTER'S MOURNING WAREHOUSE 1849-1923 IN LEEDS, UK.

Claire Barber

University of Huddersfield, UK

CRAFTING SORROW: THE USE OF TEXTILES IN CONTEMPORARY ART PRACTICE TO PERFORM MOURNING.

### Workshop sessions

Limited places available, please reserve a place at reception if you wish to attend.

**15:00 – 15:10:** Conference Closing Ceremony

# Conference Poster List

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Name	Institution	Title
Laura-Ann Kavanagh	University of Manchester	KNIT FOR FIT: DEVELOPING SUSTAINABLE BESPOKE KNITWEAR PROCESSES
Guy McKelvey	University of Huddersfield	SOLE RESPONSIBILITY'S CORPORATE SOCIAL RESPONSIBILITY (CSR) IN ACTION: PEOPLE, PLANET AND PROFIT , HARNESSING FASHION FOR GOOD
Monika Rom	University of Bielsko-Biala	SUSTAINABILITY AND SAFETY OF POLISH MOUNTAIN SHEEP WOOL
Helen Ashmead	Lincoln Agritech Ltd	NOVEL CELLULOSE FIBRES FROM WHOLE PLANT MATERIAL
Phoebe Apeagyei	Manchester Metropolitan University	SUSTAINABLE PROCEDURES IN COLLECTING ANTHROPOMETRIC DATA: EFFICACY IN REMOTE BODY MEASUREMENT OF SCHOOL CHILDREN FOR CLOTHING SIZING
Claire Evans	University of Huddersfield	EMBRACING CHANGE: AN EXPLORATORY STUDY TILTING GARMENT PATTERN GRAINLINES TO IMPROVE FABRIC EFFICIENCY
Zhang Li Ying	Hong Kong Polytechnic University	THE OFFLOADING EFFECTS OF METATARSAL PADS: A COMPARISON OF METATARSAL PAD DESIGNS
Hye Rim Kim	Sookmyung Women's University	SUSTAINABLE GREEN TEA DYEING OF BACTERIAL CELLULOSE
Debbie Allsop	University of Huddersfield	SCHOOL UNIFORM LIFESPAN: ACQUISITION, MAINTENANCE AND DISPOSAL
Hafiza Hifza Nawaz	University of Manchester	NANOFILTRATION OF TEXTILE WASTEWATER BY SUPER HYDROPHILIC GRAPHENE OXIDE NANOCOMPOSITE MEMBRANES
Guy McKelvey	University of Huddersfield	THE QUIET LUXURY TREND: WILL THE LOGO'S GET SMALLER WITH A MORE SUSTAINABLE APPROACH TO LUXURY FASHION CHOICES?

# Social Programme-Woven

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WOVEN in Kirklees is a biennial festival that celebrates innovation in textiles across Kirklees, Yorkshire. The theme of this year's programme is sustainability – with core strands that focus on reducing waste and environmental impact whilst retaining creativity.

Kirklees is built on the textiles industry, from humble domestic spinning and weaving beginnings to large-scale mill production and trading; WOVEN celebrates it all. The programme is a true reflection of the district's textile heritage and cutting-edge developments in industrial production, university research and creative expression. WOVEN's themes will also explore generations of innovators, connecting the past, present and future of textiles.

There have been several long-term programmes that have culminated in this year's festival Growing Colour Together a programme of 7 artists in residency across three areas of Kirklees. The artists have helped each area to develop a natural dye garden and to understand how those plants can be used to make beautiful art works as well as refreshing old textiles for future use. These art works have been displayed in each of the areas for their community to showcase as a core part of the WOVEN festival programme. Funded by Arts Council England and The Mayors Safer Communities Fund.

**Mission to Mend** Roadshows aim to address pressing issues for people and the planet, drawing inspiration from the rich unique textile heritage Kirklees. Mission to Mend has been travelling across Kirklees inviting the local community to come together and learn more about how they can be more sustainable with their garments, repairing instead of replacing for the future. Focusing on teaching textile repair skills to instil a sustainable outlook of 'buying once, buying well', for future generations. Supported by National Heritage Lottery Funding.

Continuing the theme of celebrating the stitch Quilted: **Community, Creativity and Care** – is a free exhibition exploring the powerful art of community quilt making, from the Threads of Survival quilts made during the COVID pandemic to quilts stitched by individuals and communities in Kirklees alongside local professional quilters and community quilts made by talented community makers in Kirklees.

The festival final event on the 8th of July is in partnership with the University of Huddersfield. Closing the festival and looking forward is Textile Futures, a two-day event featuring a series of talks, workshops and meet and greets, exploring the latest innovations and trends in the world of textiles, as well as the vast career opportunities the industry brings to young people.

#WOVEN23 #GrowingColourTogether

| [Facebook page](#) | Instagram [@WovenInKirklees](#) | Twitter [@WovenInKirklees](#)







Buildings

3M Buckley Innovation Centre (BIC)	15	Joseph Priestley East Building (JPE)	39	Schwann Building (SB)	07
Atkinson Holt (AH)	35	Joseph Priestley South Building (JPB)	24	Sir John Ramsden Court (JR)	33
Barbara Hepworth Building (BH)	36	Joseph Priestley West Building (JPW)	38	Sir Patrick Stewart Building (PS)	21
Brontë Lecture Theatres (BL)	03	Laura Annie Wilson Building (LW)	08	Sovereign Design House (SDH)	41
Charles Sikes Building (CS)	09	Library	07	Sparks Jones Building (SJ)	16
Cockcroft Building (CO)	23	Lockside Building (LS)	27	Stewart Film Studios (SFS)	42
Diamond Jubilee Lecture Theatre (CS1/01)	09	Media, Journalism and Film Building (JM)	29	Student Central (SC)	34
Edith Key Building (EK)	18	Oastler Building (OA)	37	St. Paul's Hall (PLG)	26
Harold Wilson Building (HW)	02	Percy Shaw House (SH)	32	The Sir George Buckley Lecture Theatre (RH)	18
Hastlett Building (HA)	14	Queen St. Building (QSB)	20	University Health Centre	34
Heritage Quay	07	Ramsden Building (R)	22	University Reception	01
Holocaust Centre North	07	Researcher Hub (RH)	18	University Vailt Opticians	40
Jo Cox More In Common Centre (JC)	19	Richard Steinritz Building (RS)	31		

Please note

- An accessible route map for navigation around the campus, as well as directions to the University, are available on our website at: [www.hudd.ac.uk/about/maps](http://www.hudd.ac.uk/about/maps)
- Car parking for visitors is only available on prior arrangement

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