3rd Sustainable Textile and Fashion Congress (STFC)

Day 1 – 13 February 2024

Programme
(GMT = Greenwich Mean Time = UK Time in Winter)

Session 1A | 09:30 - 11:00 GMT	
Starts – Bangladesh 15:30 | Netherlands 10:30 | Thailand 16:30	
Chair - Dr. Abu Sadat Muhammad Sayem, Manchester Metropolitan University	
P1	**Keynote - *Supply Chain Due Diligence, Sustainability, Circularity: reflections from project implementation in Bangladesh***, Dr. Michael Klode, Project Manager, Programme for Sustainability in the Textile and Leather Sector (STILE), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
P2	***Developing SATIN, a Sustainability Assessment tool for Textile Industry***, Cristina Luján-Ornelas, María-Laura Franco-García, Michiel Heldeweg and Hans Bressers, Department of Governance and Technology for Sustainability, Faculty of Behavioural, Management and Social Sciences, University of Twente
P3	**A Revival for Thailand's Textile Traditions: New Value for Local Materials (Eri Silk),** Supawinee Charungkiattikul and Prof. Dr. Eakachat Joneurairatana, Faculty of Decorative Arts, Silpakorn University

Session 1B | 11:00-12:30 GMT	
Starts - Germany 12:00 | India 16:30	
Chair - Prof. Dr. Bastian Quattelbaum, Hochschule Niederrhein University of Applied Sciences	
P1	**Keynote - *Impact of Global Clothing Retailers' Unfair Practices On Bangladeshi Suppliers During Covid-19***, Professor Muhammad Azizul Islam, Professor in Sustainability Accounting & Transparency, University of Aberdeen Business School
P2	***Quality Circle Fashion and Textiles: A Didactic Approach to Sustainable Consumer Behavior,*** Professor Anne-Marie Grundmeier and Nadine Kitzlinger, University of Education Freiburg
P3	***An empirical study of laser processing of denim as a sustainable alternative to conventionally washed denims***, Dr. Girija Jha (1), Ms.Radhika Machetti (2), Shubham Ingle (1), 1) National Institute of Fashion Technology, New Delhi, 2) Lumilab (Future Innovations)

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Day 1 – 13 February 2024

Programme
(GMT = Greenwich Mean Time = UK Time in Winter)

Session 1C | 13:30-15:00 GMT	
Starts – North Carolina & Michigan, USA 8:30	
Chair – Dr. Mazed Islam, University of Manchester	
P1	***Climate Change related health and safety risks to workers in Sri Lankan small, and medium scale apparel firms***, Devathanthrige Janaka Chamara Harshana Senadeera, Manchester Metropolitan University.
P2	***Consumer Perceived Value of Circular Apparel: A Systematic Literature Review****,* Md. Hasan Sheikh and Dr. Jin Su, University of North Carolina at Greensboro
P3	***Regulation for promoting circular economy in the field of fashion***, Dr. Meital Peleg Mizrachi, Yale University
P4	***Investigating Consumer Behavior of Bangladeshi College Students towards Sustainable Apparel Labels,*** Dr. Jin Su, *University of North Carolina at Greensboro*; Arif Iqbal, *California State Polytechnic University*, Farhan Haque, *University of North Carolina at Greensboro*; Hasan Sheikh, *University of North Carolina at Greensboro*; and Maeen Md Khairul Akter, *Stony Brook University*

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Day 2 – 14 February 2024

Programme
(GMT = Greenwich Mean Time = UK Time in Winter)

Session 2A | 09:30 - 11:00 GMT	
Starts - Netherlands 10:30 | Germany 10:30	
Chair – Dr. Rishad Rayyaan, University of Leeds	
P1	**Invited Talk - *How Collective Action is transforming an Industry***, Mariella Noto, Senior Implementation Manager Implementation HUB, Roadmap to Zero Programme
P2	***Configurations of sustainability-oriented textile partnerships,*** Tulin Dzhengiz, Andra Riandita and Anders Broström, Manchester Metropolitan University
P3	***The facilitation practices of implementing education for sustainable development (ESD) in fashion design studies in Germany and Iran,*** Hanieh Choopani, Dr. Anne-Marie Grundmeier, Martina Glomb, University of Education Freiburg, University of Applied Sciences and Arts Hannover

Session 2B | 11:00-12:45 GMT	
Starts – Poland 12:00 | Pakistan 16:00	
Chair – Dr. Abu Sadat Muhammad Sayem, Manchester Metropolitan University	
P1	**Keynote - *Circular Economy Transition Challenges: Reflections from Bangladesh's Apparel Industry***, Assoc Professor Dr. Mohammad Bakhtiar Rana, Aalborg University Business School & Project Lead, Circular Economy in Bangladesh's Apparel Industry (CREATE)
P2	***Sustainable Industrial Design of Textile Structures for Composites***, Dr. Tsegaye Lemmi, Marcin Barburski, Lodz University of Technology and Nawar Kadi, University of Borås.
P3	**Textile Sustainability: Agriculture Waste Recycling into Value-added Textile,** Prof. Muhammad Mohsin, University of Engineering and Technology (UET) Lahore
P4	**Introducing FASHTRAX.org: The Knowledge Exchange Platform for Digitising Supply Chain Transparency**, Hilde Heim and Julie Hodson, Manchester Fashion Institute, Manchester Metropolitan University

Abstracts

(Keynote)

Supply Chain Due Diligence, Sustainability, Circularity: reflections from project implementation in Bangladesh

Michael Klode

Programme for Sustainability in the Textile and Leather Sector (STILE), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

The presentation refers to the experiences of unfolding supply chain due diligence in Bangladesh and its interaction with the national administration on occupational safety, environmental protection and others. It also addresses the connection with other national, international and global regulations on Circular Economy, the EU Green Deal, or others. It tries to draw a realistic picture between the normative aspirations and the rightsholders claims.

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Developing SATIN, a Sustainability Assessment tool for Textile Industry

Cristina Luján-Ornelas, María-Laura Franco-García, Michiel Heldeweg and Hans Bressers

Department of Governance and Technology for Sustainability, Faculty of Behavioural, Management and Social Sciences
University of Twente, Enschede, The Netherlands

Performance evaluation in companies and organisations is essential to transition to sustainable production patterns, particularly for SMEs that frequently lack the information and resources to face sustainability challenges. Currently, there are various tools to assess the sustainable performance of the industry. However, they focus only on product development or a single dimension of sustainability; they are focused on large companies, or paying high fees to access them is necessary. This paper presents the design and development of SATIN (Sustainability Assessment of Textile Industry), a free-access self-assessment tool to diagnose the sustainable performance of textile manufacturing companies. SATIN's goal is to facilitate the integration of sustainable practices in the environmental, social, economic and business management dimensions. Based on Life Cycle Assessment, Corporate Sustainability and key indicators, SATIN encourages systematic data collection and the integration of continuous improvement strategies. SATIN helps bridge the concept of sustainability and the actions to implement it. The company obtains a diagnosis of its sustainable performance and valuable information for decision-making. The tool's applicability has been tested in various textile companies, obtaining favourable results. SATIN is expected to accelerate the learning curve of textile companies and support the transition towards sustainable production schemes.

A Revival for Thailand's Textile Traditions: New Value for Local Materials (Eri Silk)

Supawinee Charungkiattikul and Eakachat Joneurairatana

Faculty of Decorative Arts, Silpakorn University

This research is aimed at presenting information about Thai textiles as well as proposing practical guidelines on preservation and revival of Thailand's artistic tradition of textiles knowledge in order to enhance the value of local material Eri Silk. With employed research methods, the researcher conducted literature review from various sources of book and online material as well as field observation from a case study to summarize and analyze the data. This research purpose is to understand material knowledge in textiles context and to highlight the significance of local material value. This paper presents the current status of Eri Silk in Thailand and important aspects of Eri Silk. It is a local material used by weavers in the Northeast of Thailand with its unique fibrous properties such as sustainable material, performance qualities and ethical merit status. This study will point out the importance of the development of textile in Thailand based on Sufficiency Economy Philosophy, which intends to align with the Sustainable Development Goals and conforms with Bio-Circular-Green Economy. It is anticipated that the findings may help raise the material knowledge and contribution to the sustainable development in textile and fashion cultures in Asia, as well as in our contemporary world.

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(Keynote)

Impact of Global Clothing Retailers' Unfair Practices On Bangladeshi Suppliers During Covid-19

Muhammad Azizul Islam

Sustainability Accounting & Transparency, University of Aberdeen Business School

Professor Muhammad Azizul Islam's talk covers his research findings on the impacts of unfair purchasing practices by UK fashion retailers on garment suppliers and workers in Bangladesh. Based on survey and Interview methods, his research shows how unfair purchasing practices by UK fashion retailers caused the vulnerability of workers in the Bangladeshi garment sector. *Aziz is a Professor in Sustainability Accounting & Transparency at the University of Aberdeen Business School. Aziz is one of the world's leading sustainability accounting researchers investigating some of the specific issues, including human rights disclosures, corporate transparency on modern slavery, SDGs & social audits. His research collaborations are currently underway with international institutions and researchers based in Australia, Bangladesh, Canada, Egypt, New Zealand, Nigeria, Portugal, and the USA. He is actively engaged in doctoral and postdoctoral supervision. His research findings attract widespread media attention and influence policy changes. His research findings and opinions appear in The Guardian, BBC, Aljazeera, Sunday Post, Conversation, The Age, Sydney Morning Herald, Prothom Alo, The Times-Raconteur, IFAC-Gateway, ICAEW feature articles.*

Quality Circle Fashion and Textiles: A Didactic Approach to Sustainable Consumer Behavior

Anne-Marie Grundmeier and Nadine Kitzlinger

Fashion and Textile Education, University of Education Freiburg

The fashion industry is one of the largest and still growing consumer goods sectors in the world. Based on an international division of labor and digitalization, the acceleration of fashion consumption is the most prominent feature in the last two decades. In view of the demand for sustainability, the textile and fashion industry must reorient itself, which is not possible without a transformation of consumers. They are confronted with a high level of product complexity in their purchasing decisions simply because of the constant change in textiles and clothing. Even if consumers want to make responsible and reflective decisions based on information, they are often confronted with a product complexity that can be perceived as overwhelming and inscrutable. In the use phase, this extends into private life through demands on wearing behavior, care, repair and disposal, and can mean an increasingly high mental load. Fashion consumption is connected with numerous personal, situational, ecological and ethical decisions and requires a corresponding assessment competence. A quality-circle as a tool for assessment competence developed with and evaluated by students as part of subject didactic research, based on the didactic approaches of Education for Sustainable Development and Consumer Education, will be presented.

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An empirical study of laser processing of denim as a sustainable alternative to conventionally washed denims

Girija Jha[1], Radhika Machetti[2] and Shubham Ingle[1]

[1]National Institute of Fashion Technology, New Delhi, India;

[2]Lumilab (Future Innovations), Bengaluru

This Paper is an exploratory study of laser processing of denim as a sustainable alternate to conventionally washed denims It investigates how denim if treated with laser instead of conventional washes can be a promising sustainable alternate. The methodology used in the paper is primary investigation and comparative analysis of conventionally washed denims with laser treatment of denims was done to conclude the perceived benefits of laser treated denim. Primary investigation and comparative analysis was done to conclude the perceived benefits of laser treatment of denims. To name a few- minimal/ zero water, no chemicals pollution, lower noise level, fumes which are emitted are sucked by system and released into the air by purifying etc. Higher productivity- hourly output ranging from 90 - 110 garments makes the system more efficient hence sustainable. To conclude, the study established in the case studied that laser treatment of denim is a sustainable alternate to conventionally washed and treated denim. So where does the problem lie. When we "live in it" why doesn't it let us live. Let it fade as per our body contours. Let denim bleed Green instead of bleeding blue. After all "All that Fades is Denim".

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Climate Change related health and safety risks to workers in Sri Lankan Small, and Medium scale Apparel Firms

Devathanthrige Janaka Chamara Harshana Senadeera

Manchester Metropolitan University

Sri Lanka, a small island nation located between 6ºN and 10ºN latitude and 80ºN and 82ºN longitude, is highly vulnerable to climate change impact. Despite the significant impact on workplace health and safety from adverse weather conditions caused by climate change, there is a dearth of research on the impact on workplace health and safety in industries in Sri Lanka from these adverse weather conditions. The objective of this study was to address this dearth of research by identifying and analysing the impact on workplace health and safety in small and medium-scale firms in the Sri Lanka apparel manufacturing industry of adverse weather conditions caused by climate change, identifying the existing strategies adopted by these firms to mitigate this impact, and assessing the effectiveness of these strategies. Data for the study was collected from a semi-structured questionnaire survey, which was distributed to a sample of 346 employees representing six small and medium-scale apparel manufacturing companies in Sri Lanka. The quantitative data collected from the questionnaire survey was analysed using statistical measures, and the qualitative data collected from this instrument was analysed using NVivo. The findings from the study revealed that the main adverse weather conditions that are impacting the workplace health and safety of small and medium apparel manufacturing companies in Sri Lanka are extreme heat and adverse weather events such as extreme precipitation and flooding. The workplace health and safety impacts arising from these adverse weather conditions include the impact on the physical health of workers, such as the increase in cases of cardiovascular diseases, respiratory diseases, and fatigue levels amongst workers, and the impact on the mental health of workers, such as the increase in cases of stress, anxiety, and reduced cognitive function amongst workers. The findings also revealed that while several strategies have been adopted to mitigate the impact on workplace health and safety from adverse weather conditions caused by climate change, findings conclude that these strategies have not been effective.

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Consumer Perceived Value of Circular Apparel: A Systematic Literature Review

Md. Hasan Sheikh and Jin Su

Department of Consumer, Apparel and Retail Studies, University of North Carolina at Greensboro

Despite the rapidly increased attention from consumers about apparel sustainability issues, consumer perceived value of circular apparel was not examined systematically in the literature. This study aims to understand consumers' perceptions of circular apparel and identify the different dimensions of consumer perceived value of circular apparel. Two objectives of the study include (1) to identify consumer perceived value pertinent to circular apparel and (2) to develop a conceptual framework to examine the relationship between consumer perceived value and attitude toward circular apparel. This study uses a systematic literature review approach and epistemologically reviews the literature conducted over the past 22 years (2000–2022). A total of 66 articles relevant to consumer perceived value of circular apparel were selected to be included in this review. The findings confirmed Sheth et al. (1991)'s five dimensions of consumption value: functional, conditional, epistemic, social, and emotional, and found three more dimensions that are particularly relevant to circular apparel: economic, aesthetic, and green. As a systematic exploration, this research fills a significant gap in the literature and offers practical insights that can drive sustainable innovation and practices in the apparel and retail industry.

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Regulation for promoting circular economy in the field of fashion

Meital Peleg Mizrachi and Alon Tal

Department of Economics, Yale University and Department of Public Policy, Tel Aviv University

Given the increasing concern about the fashion industry's contribution to the climate crisis, fast-fashion constitutes an environmental-social challenge that requires a solution in the form of dedicated public policies. Indeed, in recent years, decision makers and government officials worldwide have begun to promote sustainable fashion through regulation. This descriptive study reviews the main barriers facing a circular economy in general and the fashion industry. It considers nascent regulations emerging throughout the world in the field of fashion, with reference to political dynamics, legislation and international bodies, with the purpose of evaluating the best policy. Four categories of policy proposals are evaluated: Command and Control Interventions, Educational Initiatives, Incentives and Certification. The study ranks them according to criteria of effectiveness, sustainability, feasibility, equity and compliance. The ranking process was based on an elicitation of expert judgments among a panel with expertise from the business sector, academia and civil society. Policy alternatives for the promotion of sustainable fashion are recommended in the form of incentives, sanctions and informational programs. The alternatives are evaluated according to the criteria of economic viability, sustainability, fairness and efficiency. The alternative that was found to be most effective is informational programs in the form of educational programs.

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Investigating Consumer Behavior of Bangladeshi College Students towards Sustainable Apparel Labels

Jin Su[1], Arif Iqbal[2], Farhan Haque[1], Hasan Sheikh[1] and Maeen Md Khairul Akter[3]

[1]University of North Carolina at Greensboro; [2]California State Polytechnic University; [3]Stony Brook University

Sustainable apparel labels serve as a communication medium between apparel brands and consumers regarding products' environmental and social impacts. This study explores the consumer behavior of young Bangladeshi consumers towards apparel with sustainable labels. The objectives of the study are to understand young Bangladeshi consumers' beliefs about apparel sustainability and their consciousness about the information on apparel labels. The study employed a quantitative research method and analyzed 377 responses collected through an online survey across 12 colleges in Bangladesh. Overall, the results suggest that young Bangladeshi consumers have fair to high level of apparel sustainability knowledge and a high level of concern about apparel sustainability issues. Comparison analysis between lowerclassmen and upperclassmen shows that although there are no significant differences between the two groups regarding their perspectives of sustainable labels, upperclassmen had a higher possibility to purchase clothing that is labeled "100% Cotton", "Organic," and "Ethically Sourced." Further regression analysis results show that apparel social sustainability knowledge is the best predictor of young consumers' purchase intention toward apparel with sustainable labels. This study contributes to the literature by providing insights about sustainable labels from young consumers in Bangladesh, an emerging consumer market and a major apparel production country.

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Configurations of sustainability-oriented textile partnerships

Tulin Dzhengiz, Andra Riandita and Anders Broström

Manchester Metropolitan University

Firms configure their sustainability-oriented partnerships differently depending on the sustainability issue, partnership types, and mechanisms (product, process, policy, and awareness raising) and target change at various levels (firm, industry, supply chain, and society). We study how sustainability-oriented partnerships in the textile industry are configured by analyzing 444 partnerships using a mixed-method approach. Textile firms partner to tackle environmental issues such as circularity, waste, and sustainable materials, utilizing product and process mechanisms and create firm-level change. In contrast, these firms address social issues such as education and job development, labor and working conditions, poverty, and inequality through cross-sector partnerships that target change beyond firm boundaries. We discuss these findings critically by drawing on and contributing to two literature areas: sustainability-oriented partnerships that study partnership configurations and the sustainability in textiles. Our findings highlight the importance of issue and context specificity when partnering for sustainability.

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The facilitation practices of implementing education for sustainable development (ESD) in fashion design studies in Germany and Iran

Hanieh Choopani, Anne-Marie Grundmeier, Martina Glomb

University of Education Freiburg, University of Applied Sciences and Arts Hannover

Various tools (Abner & Baytar, 2019) and teaching strategies (Armstrong, 2011) are utilized to facilitate students' pro-environmental attitudes through ESD concepts (Abner et al., 2019). This paper investigates the perspective of fashion design education experts on the practices for implementing education for sustainable development (ESD) in the higher education studies of fashion design field in Germany and Iran. To accomplish this objective, problem-centered (Döringer, 2020) expert interviews (in progress) with 9 professors in Germany and 5 professors in Iran have been conducted in fashion and apparel design. The interviews have been transcribed and interpreted using Mayring's (2014) qualitative research analysis method and MAXQDA software. The research questions address: 1. Which techniques, methods, strategies, and tools are employed in the fashion design courses for ESD implementation? 2. What are the challenges and barriers to implementing ESD as a guiding principle in the higher education of fashion design in the respective countries? The paper improves comprehension of how to facilitate ESD as a didactic approach and its integration into fashion design courses.

Circular Economy Transition Challenges: Reflections from Bangladesh's Apparel Industry

Mohammad Bakhtiar Rana

Aalborg University Business School & Project Lead, Circular Economy in Bangladesh's Apparel Industry

Sustainable Industrial Design of Textile Structures for Composites

Tsegaye Lemmi, Marcin Barburski and Nawar Kadi

Lodz University of Technology and University of Borås

In recent years, textile-reinforced composite materials have gained significant attention in various industries, primarily in automotive, construction, and aviation, due to their lightweightness and good mechanical properties. However, these composites are mainly produced from inorganic fibers (carbon and glass fibers) and petroleum-based thermoplastic and thermoset polymer matrices. Even though these composites offer excellent properties, they impose environmental concerns related to the recyclability of the composites. Recent regulations force manufacturers and research institutes to develop environmentally friendly products from renewable resources. Therefore, this work aimed to develop lightweight and fire-resistant sustainable textile composites from natural fibers and bio-based polymer matrices. In this work, nonwoven fabrics were produced from wool fibers and poly (lactic acid) (PLA) with three different proportions of wool and PLA fibers. The natural fiber-reinforced PLA composites were prepared from five layers of nonwoven fabrics using a hot compression molding technique. The composite samples were subjected to various experimental investigations, including tensile, bending, interlaminar shear strength, flammability, and thermal property tests. The research finding revealed that the wool-PLA nonwoven fabric reinforced composites have shown good fire resistance for the composites produced from a high proportion of wool fibers (60% wool, 40% PLA) in the nonwoven fabric composition. In addition, this variant showed a tensile strength of 15.90 ± 0.79 MPa tested in 0 degrees, which is higher than other variants.

Textile Sustainability: Agriculture Waste Recycling into Value-added Textile

Muhammad Mohsin

University of Engineering and Technology (UET) Lahore

(No abstract available)

Introducing FASHTRAX.org: The Knowledge Exchange Platform for Digitising Supply Chain Transparency

Hilde Heim and Julie Hodson

Manchester Fashion Institute, Manchester Metropolitan University

The current fundamental lack of transparency throughout the various stages of the supply chain is one of the most significant barriers preventing organisations from implementing more sustainable, accountable practices and consumers from shopping more responsibly (UNECE, 2020). Due to the significant manual effort required to share data with the rest of the ecosystem, parties have had little incentive to do so. Additionally, the detail required to comply to forthcoming circular economy legislation will not be possible without automation. The Manchester Fashion Institute's Textiles Transparency Team (MFITT) are creating an online knowledge exchange platform called FASHTRAX. The platform is an industry facing, fashion transparency innovation exchange site for the dissemination of research and advancements in the field of digitalising supply chain transparency. Garment manufacturers are seeking guidance on how to adopt and integrate digital technologies in a non-disruptive way into their existing operations. The FASHTRAX knowledge exchange platform will signpost several emerging technology solutions, such as blockchain, AI, and sensors, that digitalise the supply chain's key processes, while aligning these with forthcoming legislation including digital product passports. We propose to introduce this initiative to academic communities in business and fashion studies.