

2nd Sustainable Textile and Fashion Congress (STFC)

Day 1 – 28 July 2022

Programme

(GMT = Greenwich Mean Time, BST = British Summer Time)

Session 1 -- 09:00 - 10:30 GMT / 10:00 - 11:30 BST

Starts - Germany 11:00 / New York & Toronto 05:00 / India 14:30 / Bangladesh 15:00 / China 17:00

Chair - Dr. Abu Sadat Muhammad Sayem, Manchester Metropolitan University, UK

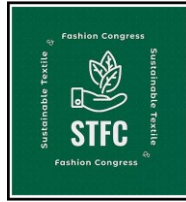
P1	Keynote - Second time around: Circular economy solutions for the fashion and textiles industry , Professor Natascha Radclyffe-Thomas, British School of Fashion, Glasgow Caledonian University, London Campus
P2	Keynote - S4S: Designing a Sensibility for Sustainable Clothing: Reimagining Fashionability as Sustainability , Professor Fiona Hackney, Manchester Fashion Institute, Manchester Metropolitan University
P3	Adopting Circular approaches for fashion and textile industry, challenges and way forward , Dr Saniyat Islam, School of Fashion and Textiles, RMIT University, Australia
P4	Innovation through SDGs , Mr. Mohammed Zahidullah, Head of Sustainability – DBL Group

Session 2 - 11:00-12:30 GMT / 12:00-13:30 BST

Starts - Germany 13:00 / New York & Toronto 07:00 / India 16:30 / Bangladesh 17:00 / China 19:00

Chair – Dr Saniyat Islam, School of Fashion and Textiles, RMIT University, Australia

P1	An Approach towards Sustainability: Pattu Weaving , Dr. Ankita Srivastava, National Institute of Fashion Technology, Jodhpur, India
P2	Sustainable Lifestyle - A way forward , Dr. Vikas Kumar, National Institute of Fashion Technology, Patna, India
P3	RE3Tex – a project to enhance circular economies in the textile and clothing industry, exemplifying a modular implementation , Ms Ida Marie Brieger and Ms. Natalie van Bentum, Center for Textile Logistics, Niederrhein University of Applied Sciences, Germany



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Session 3 - 13:30-15:00 GMT / 14:30-16:00 BST

Starts - Germany 15:50 / New York & Toronto 09:30 / India 19:00 / Bangladesh 19:30 / China 21:30

Chair - Dr. Abu Sadat Muhammad Sayem, Manchester Metropolitan University, UK

P1	<i>Onboarding blockchain: a roadmap for small scale fashion brands</i> , Dr Hilde Heim, Manchester Fashion Institute, Manchester Metropolitan University
P2	<i>Keynote - The Bangladesh story of the Readymade Garment Industry</i> , Dr. Rubana Huq, Vice Chancellor, Asian University for Women
P3	<i>Sustainable approaches in textile industry effluent treatment: Effectiveness of Membrane Bioreactor</i> , Mr. Md. Shammim Reza, University of Manitoba, Canada

Day 2 – 29 July 2022

Programme

(GMT = Greenwich Mean Time, BST = British Summer Time)

Session 4 -- 09:00 - 10:30 GMT / 10:00 - 11:30 BST

Starts - Germany 11:00 / New York & Toronto 05:00 / India 14:30 / Bangladesh 15:00 / China 17:00

Chair - Dr. Abu Sadat Muhammad Sayem, Manchester Metropolitan University, UK

P1	<i>Conceptualizing the Use of Post-consumer Textile Waste as an Alternate for Protective Packaging Material</i> , Ms. Nupur Chopra, National Institute of Fashion Technology, Gandhinagar, India
P2	<i>Fashion loop closing : Developing apparel from the recycled yarn</i> , Ms. Umme Salma Ferdousi, Bangladesh University of Textiles
P3	<i>Green approach to the creation of naturally dyed nylon and polyester with antimicrobial properties</i> , Dr. Anjali Agrawal, National Institute of Fashion Technology, Kolkata, India



2nd Sustainable Textile and Fashion Congress (STFC)

28 -29 July 2022 | Online Event

Abstracts

[Keynote]

Second time around: Circular economy solutions for the fashion and textiles industry

Natascha Radclyffe-Thomas

Professor of Marketing and Sustainable Business, British School of Fashion, GCU London

Environmental pollution caused by textile waste is an increasing and urgent issue for the global fashion industry. The Ellen MacArthur Foundation highlights how every second, the equivalent of a rubbish truck load of clothes is burnt or buried in landfill. Faced with such bleak statistics on textile waste and negative environmental and social impacts associated with what should be a creative industry, many designers and fashion consumers wish to embrace more sustainable practices and are implementing circular design and systems thinking solutions along the fashion supply chain including material innovation, secondhand shopping, rental, upcycling and radical mending. This rethink of fashion's values and practices is also impacting fashion communication and piquing consumer's curiosity about how, where and from what their clothes are made. In this keynote Professor Natascha Radclyffe-Thomas will share her research on sustainable fashion and secondhand fashion consumption and her work with organisations including The Ellen MacArthur Foundation and Fashion Revolution highlighting the work of key innovators in the circular fashion space prefiguring a more just and sustainable fashion industry.



[Keynote]

S4S: Designing a Sensibility for Sustainable Clothing: Reimagining Fashionability as Sustainability

Fiona Hackney

Professor of Fashion, Manchester Fashion Institute, Manchester Metropolitan University

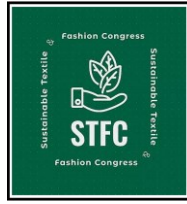
S4S (<https://s4sproject-exeter.uk/>) is an Arts and Humanities Research Council funded project which examines the quietly activist potential of women's everyday skills, knowledge and capabilities to address current problems in the fashion system. This keynote will examine the project's aims, methods, and findings and features a selection of short, reflective in-project films made by the research team and community participants.

Innovation through SDGs

Mohammed Zahidullah

Head of Sustainability – DBL Group, Bangladesh

This talk will highlight some of the innovative sustainability initiatives of DBL Group that address different sustainable development goals (SDGs) set by the United Nations. These include both social and environmental programmes in the areas of women empowerment, community safety, recycling, and responsible consumption.



An Approach towards Sustainability: Pattu Weaving

Ankita Srivastava and Ankur Saxena

National Institute of Fashion Technology, Jodhpur, India

Sustainability is the need of the hour and the world is now looking for the environment-friendly options while choosing the materials, techniques, processes and disposal systems. In textiles, handloom weaving is considered as the sustainable way of fabric manufacturing. Many ancient crafts clusters are still existing and re-inventing themselves to create sustainable products. The craft of '*Pattu weaving*' is one of them, which is known as a traditional weaving technique.

Pattu weaving is a traditional craft using extra weft weaving technique, which is widely practised by the weavers in India. Present study reviews the materials, tools, techniques and processes used in this craft, along with the challenges and opportunities for the upliftment of the craft. A comparative study of traditional and contemporary materials, colour palette, motifs and product range of the craft are also covered in this paper. Major part of the information and images have been collected during craft research documentation activity while visiting the craft cluster at Bhojasar and Karwa villages in Rajasthan, where Pattu craft is being practiced by the weavers since ages. Along with this, secondary research has also been included to strengthen the study.



Sustainable Lifestyle - A way forward

Vikas Kumar

National Institute of Fashion Technology, Patna, India

According to United Nations Environment Programme (UNEP), the world population would reach a staggering 10 billion by 2050. It would also accompany a huge leap in the needs and wants of the people in terms of shelter, transportation, and food. The world has always faced the problem of unlimited wants and limited resources and with given circumstances, it is going to be much worse in the next three decades. This calls for immediate attention to the existing lifestyle that we are leading and finding opportunities of making amends.

The study aims at learning about the lifestyle of an average Indian consumer and understanding its impact on the ecological footprint. The study would take a sample of consumers from different age groups, gender, profession, and geographical locations within India. The data related to their food, housing, and transportation collected through a structured questionnaire is analysed to calculate their impact on their ecological footprint.

This study would give insights into the existing situation and would serve as input to explore methods of maintaining sustained use of resources and providing a sustainable lifestyle. As the existence of natural resources is a concern for the humanity and entire planet, its relevance is stretched across all living beings.



RE3Tex – a project to enhance circular economies in the textile and clothing industry, exemplifying a modular implementation

Ida Marie Brieger and Natalie van Bentum

Center for Textile Logistics, Niederrhein University of Applied Sciences, Germany

RE3Tex stands for repair, reuse and recycle and aims at transforming business models in the (outdoor) fashion industry to promote a conscious and sustainable approach to the use of resources in the textile and clothing industry. It comprises an analysis of currently offered repair and recycling services of outdoor garments by retailers, the development of a manual to inform the industry about parameters that influence the potential for a circular textile value chain in garment production and the development of guidelines for a recirculation of outdoor fashion in terms of repair or recycling including a business model and logistics concept. The project is realized by partners of the industry and transferred to practice in modular steps. With the project RE3Tex, the CTL tries to enhance the product life cycle time in the textile and clothing industry by addressing various stakeholders such as fashion retailers, garment producers, end consumers, used textile collectors and recyclers.



Onboarding blockchain: a roadmap for small scale fashion brands,

Hilde Heim

Manchester Fashion Institute, Manchester Metropolitan University, UK

Fashion firms are aiming to optimise their supply chain transparency through digitalisation. However, very few have actually done so – especially in the small-scale sector. Although the technology and willingness to adopt exists, several barriers still hinder supply chain stakeholders up and down the value chain from adopting Web 3.0 technologies such as blockchain and smart tags. One challenge is the lack of appropriate user facing applications or platforms. If firms do find a platform, they are unsure if it is suitable for their business model; they do not have their data correctly prepared to take part; there is no guarantee of security; and their in-house technical staff may not know how to integrate with the platforms, among other barriers. The difficulty for brands and retailers in resolving traceability issues in their supply chain and collecting (and validating) the data required to demonstrate their sustainability metrics can be formidable. As a result, there is an increasingly strong call from industry for an ‘education piece’ – which would develop the digital literacy of stakeholders so that they can participate in the digital optimisation of the supply chain.

The UNECE have developed a Sustainability Pledge initiative calling for interested parties to develop proposals that facilitate improved transparency across the industry. The Manchester Fashion Institute’s Textiles Transparency (MFITT) team has been working with several partners including local industry and fashion specific blockchain tracking and tracing platforms. This presentation describes the MFITT x UNECE Sustainability Pledge project. This project aims to develop an onboarding-to-blockchain roadmap – or ‘education piece’ for small scale fashion brands. Based on empirical research with small scale firms, this streamlined and accessible protocol for industry aims to lay out concrete steps that brands can take in order to become blockchain ready and begin digital transformation. This includes understanding the capabilities and limitations of the technology; the management of already stretched resources; building digital skills in the workforce; and addressing cultural organisational shifts and digital mindset. The MFITT x UNECE Sustainability Pledge project aims to build digital literacy among SMFEs in the fashion supply chain and ensure that digital transformation can take place as smoothly and rapidly as possible so that firms can fulfil their corporate social responsibilities through optimised transparency.



[Keynote]

The Bangladesh story of the Readymade Garment Industry

Rubana Huq

Vice Chancellor, Asian University for Women and Fellow at NYU and Harvard Asia Center

How did a country, which was among the poorest in the world at its independence in 1971, Bangladesh, become one of the biggest exporters of readymade garments (RMG)? News about a devastating fire in an eight-story garment factory made big headlines in 2013. What has happened since to improve factory safety? When the world shot down due to COVID19, many international fashion brands cancelled contracts. The ones who took the hardest hit were at the end of the fashion supply chain, the RMG factory worker in Bangladesh.

Our keynote speaker is Dr. Rubana Huq, is a businesswoman, a poet, and academic. She is the immediate past President of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), and the first women to occupy the post in four decades. She is the Managing Director of Mohammadi Group, a family business conglomerate whose journey began exporting readymade garments, and has since diversified into software, digital distribution, real estate, power generation and the group's latest is the launch of a television channel called Nagorik. She represents the global manufacturers in the UNFCCC fashion industry charter for Climate Action for the period of 2021-22. Dr. Rubana Huq has a deep understanding of the RMG sector in Bangladesh and globally and offers a unique perspective. Join us for the conversation. Currently she is also a fellow at NYU and Harvard Asia Center. She is also the Vice Chancellor of Asian University for Women.



Sustainable approaches in textile industry effluent treatment: Effectiveness of Membrane Bioreactor

Md. Shammim Reza, *University of Manitoba, Canada;*

Md Mazedul Islam, *Department of Materials, The University of Manchester, UK;*

K.M Abdun Noor, *FABRIC project by GIZ, Bangladesh; and*

Md Tahmidul Islam Molla, *Assistant Professor of Practice, Marquette University, USA*

In recent years, membrane bioreactor has gained attention over conventional wastewater treatment techniques due to their tremendous benefits. Existing literature has given limited focus, particularly on the effectiveness of membrane bioreactor in the textiles industry waste-water treatment and its benefits. We conducted a case study that investigates the viability of a membrane-ultrafiltration with a nominal pore size of 0.04 μ m considering a textile biological treatment plant in Bangladesh. The wastewater quality at three different stages e.g., inlet, after biological/ before Membrane Bioreactor (MBR), and at discharge point were analyzed. The water parameters such as pH, BOD (Biological oxygen demand), COD (Chemical oxygen demand), TDS (Total dissolved solids), and TSS (Total suspended solids) were observed. Results were compared with the standard local and international regulations including Bangladesh Effluent Discharge Regulations (ECR 1997) and the ZDHC wastewater guideline. Findings show that the BOD removal percentage at the discharge point was 90.26, whereas the COD, TDS, and TSS removal percentages were 90.01, 59.61, and 99.53, respectively, and meet both ECR 1997 and ZDHC standards. The membrane bioreactor used in the effluent treatment plant is more efficient, especially in improving wastewater quality. The findings will inspire textile industries to adopt membrane bioreactors that foster sustainable approaches in wastewater treatment as a promising alternative.



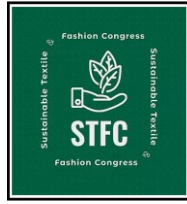
Conceptualizing the Use of Post-consumer Textile Waste as an Alternate for Protective Packaging Material

Gareema Verma, Aman Prakash and Nupur Chopra

National Institute of Fashion Technology, Gandhinagar, India

Bubble wrap, one of the most widely used protective inner packaging materials in e-commerce, has been irreplaceable for most of its functions in packaging for consuming less space, being a featherweight, and its shock absorption abilities. However, it causes a significant environmental impact and has proven hazardous for eco life. On the other hand, garment end-of-lifecycle became a significant part of academic inquiries. The growing economy and increased consumer spending power in matured economies have led to an increase in clothing production, which has approximately doubled in the last fifteen years. At the current level of post-production, solid waste generation and post-consumption fashion industry's waste is expected to be 148 million tons (a 60% increase from 2015 to 2030). The low recovery rate with the increasing quantity of textiles directly booms the environmental loading of post-consumer textile waste (PCTW) disposal. A system of material recovery of PCTW into upcycled products is a way to address the issue of PCTW management and resource recovery.

The current research tried to serve a double purpose. It explores the possibilities of developing alternative sustainable protective packaging materials similar to bubble wrap using post-consumer textile waste. An extensive review of the literature was conducted to understand the characteristics of suitable inner packaging materials and to identify similar structures and abilities among the textile material. Identified cushioning techniques were compared through the weighted average method, and the design concepts were formed using three different approaches. The research acknowledges the potential to develop a novel approach and research area for PCTW recycling which may further increase the recycling rate.



Fashion loop closing: Developing apparel from the recycled yarn

Umme Salma Ferdousi, Sati Irtifa and Dewan Murshed Ahmed

Department of Fabric Engineering, Bangladesh University of Textiles.

The fashion loop today is an open one in most cases. To close the loop, we used recycled yarn to develop new apparel. We collected the recycled yarn (composition-95%cotton and 5% polyester) from the used garments. We did a pilling test and found the pilling performance quite disappointing. For 125 cycles, it achieved grade 4. For 500 cycles, it achieved grade 3. Finally, for 1000 cycles, it achieved grade 2. This unsatisfactory result happened due to our wrong material selection for the weft yarn. Acrylic and cotton as weft and warp yarn were not a good combo to recommend. Abrasion test performance was quite good; it withstood up to 26000 cycles. We used recycled yarn only as warp yarn because of the resource limitation. Though these obstacles, it was possible to develop fashionable outerwear.

Green approach to the creation of naturally dyed nylon and polyester with antimicrobial properties

Anjali Agrawal, *Department of Textile Design, National Institute of Fashion Technology, Kolkata, & Deepali Rastogi*, *Department of Fabric and Apparel Science, Lady Irwin College, University of Delhi*

The recent pandemic has increased the interest of researchers in the discovery of new health and hygiene related products. The growth of the synthetic fabrics like nylon and polyester has propelled over the last years, because of the excellent strength and resiliency. At the same time, the demand of natural colourants for the dyeing of these fabrics is gradually increasing due to a greater emphasis on a cleaner and greener production process. The dyeing of nylon and polyester with natural dye, Ratanjot is a novel process that has been extensively studied in this article. To this end, the dyeing of fabrics with Ratanjot was conducted without using hazardous metallic mordants. The dyeing performance was investigated in terms of depth of shade, colour fastness and antimicrobial properties. The findings suggested that dyeing of polyester and nylon with Ratanjot dye without any metallic mordants is a promising approach to get the excellent antimicrobial activity, thus opening up the avenue for green dyeing and medical textiles.