UET Textile Magazine

Department of Textile Engineering

UNIVERISTY OF ENGINEERING & TECHNOLOGY
LAHORE FAISALABAD CAMPUS

Volume : 3 (2023)

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Message of VC

Prof. Dr. Nasir Hayat
Vice Chancellor
UET Lahore

"University of Engineering and Technology (UET), Lahore, celebrated 100 years of its academic excellence on 20th November 2021. During these years, the university has played a key role in the development of engineering sector in Pakistan. The textile sector is the backbone of Pakistan's economy and Department of Textile Engineering, UET Lahore, Faisalabad Campus, has been putting its best efforts to support the textile academia and industry of the country for many years. "UET Textile Magazine" is another such effort by the department since 2022 and this is the third consecutive volume of the magazine. It is appreciated that each volume of the magazine is getting better technically. Creative thinking and writing are essential for success in today's challenging world and this magazine provides a great opportunity to the magazine team and the department to polish such skills. To make this magazine a constant source of guidance and inspiration for academics, students, practitioners, and the public at large, the work done by the team of the UET Textile Magazine is indeed worthy of appreciation. Their efforts should certainly serve as a source of motivation for other departments at the UET to initiate similar activities."

Message of Dean

Dr. Tauseef Aized
Dean Mechanical Engineering
UET Lahore

The Faculty of Mechanical Engineering is one of the oldest engineering faculties of UET with a proud history. The Textile Engineering Department is a comparatively new department in the faculty; however, the department has thrived at a rapid pace. It has already organized 6 international conferences in the last 6 years, and this will be the 3rd issue of their annual magazine in the last three years. 3rd issue of the "UET Textile Magazine" is a technical magazine with the coverage of the abstracts of the technical talk of the 6th International conference presenters, 5 technical articles from PhD faculty of the department as well as the coverage of the technical activities carried out by the department. The magazine's especial focus is on the very important area of textile sustainability, and I am sure it will be of great interest for academia and industry alike. As we celebrate the diverse accomplishments showcased in this magazine, let us also reaffirm our commitment to excellence in all facets of academia. I do congratulate the whole magazine team for their good work, which led to the publication of this magazine.

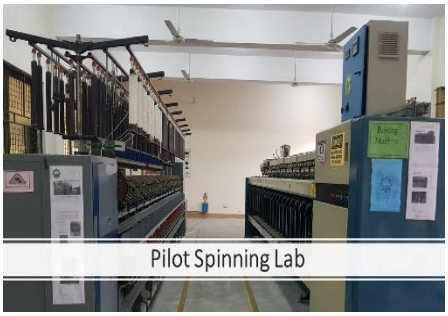
Message of Chairman

Prof. Dr. Muhammad Mohsin
Campus Coordinator
Chairman Textile Engineering
UET Lahore Faisalabad Campus

It is with profound pleasure, modesty, and anticipation that the Department of Textile Engineering has published its third annual "UET Textile Magazine" in so many years and I am sure it will serve as another great initiative from the Textile Engineering Department for the textile as well as relevant community and industry. I anticipate that "UET Textile Magazine" will be of interest to readers and professionals working in all areas of textile and related fields. I would like to acknowledge the services and dedication of the "Magazine Design Team" and all the article contributors. I would also like to thank Eng. Khurram Shehzad (Chief Editor), Mr. Faisal Rehman (Student Editor In-Chief), and Dr. Shaheen Sardar for their technical support in publishing this magazine issue.

Some Glimpse of State of the Art Textile Labs

Mini Spinning Lab



Pilot Spinning Lab

Weaving Preparatory Lab

Advance Weaving Lab

Weaving & Knitting Lab

Dyeing & Finishing Lab

Textile Wet Processing Research Lab

Textile Pattern Lab

Garment Lab

Textile Testing Lab

Textile Nano Material Lab

Textile Recycling Research Lab

SEM Lab

Smart Textile & Textile Digital Printing Lab

Textile Computer Lab

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Mr. Kashif Ahmad Zia

(Managing Director Lahore fashions (PVT) Ltd. Faisalabad)

Lahore Fashions (PVT) LTD.

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Ms.Rukhsana Kousar

- Digital Media Head
- Philanthropist of GCWUF
- Chairperson standing committee Education FWCCI
- Chairperson of FHWYO
- Social Digital Media Activist Faisalabad
- Coordinator Lyallpur Sports Academy FSD
- Fluresent Human Welfare Youth Organization
- Towards Bright Positive & Definate Capability Awareness To Sport one & Another in Times of Difficulty

FWCCI

Learn and Earn organization is offering following programs for students (free of any cost)

- Graphic Designing Course
- IELTs Coaching Classes
- Video Editing Course
- Microsoft Office
- Social Media Marketing Skills
- Fiverr and Upwork Earning

Learn & Earn Institute

Brief Introduction of Textile Engineering Department

The department started functioning in 2013 with highly qualified and experienced faculty, staff, and well-equipped dedicated laboratories. More than 160 laboratory scale equipment has been installed at the department of textile engineering in its 16 laboratories. Graduates of the textile department are currently working in government organization as well as some of the top textile mills of the country like **Nishat, Sapphire, Interloop, Crescent, Ibrahim Fibers, Azgard 9, Sadaqat, Master, Artistic Denim, Masood, CBL, Cotton Web, Kamal, TTI and US denim** to name the few**.**

Since the last six years (2018 ,2019, 2020, 2021, 2022 and 2023), the department of textile engineering has organized three mega events of textile annually including international conference on sustainable textile, SDC-UK textile design competition for students (Pakistan chapter)/Textile sustainability competition, and all Pakistan textile brands exhibition) for the first time in Pakistan which were attended by hundreds of textile industries and university participants. The textile sector in Pakistan has an overwhelming impact on the economy, contributing 60% to the country's exports and 46% of the total industrial production. This sector also provides employment opportunities to 45% of country's workforce, which is one of the highest. In today's highly competitive global environment, the textile sector needs to upgrade its supply chain, improve productivity, increase sustainability and maximize the value-addition for its survival.

By hosting these events and facilitating knowledge exchange between industry players and academia, Department contributes to the sector's growth and innovation. Furthermore, these gatherings provide a platform for showcasing Pakistan's textile prowess and fostering partnerships for sustainable development. As the textile industry evolves, role of UET Textile Department in nurturing talent, promoting research, and driving industry transformation becomes increasingly pivotal for the sector's sustained success in the global market. The following **three-degree programs** are offered at the department.

5. BSc Textile Engineering
6. MSc Textile and Materials Engineering
7. PhD Textile Engineering

BSc. Textile Engineering course is based on outcome- based education (OBE) and accredited by PEC under level-2 (Washington accord based) since its first batch. This course of study is composite and covers all the four sections of Textile. Below are the textile specializations which every student of department of Textile engineering studies during his/her degree duration.

1. Spinning (Yarn Manufacturing)
2. Weaving & Knitting (Fabric Manufacturing)
3. Wet Processing
4. Garment Manufacturing

MSc. Textile and Materials Engineering program was started by the department in 2020. It is one of the unique MS programs of the country which aims at bringing the students abreast with the most recent developments in textile and materials engineering by enhancing their analytical skills and research capabilities. The program aims at preparing graduates for careers in R&D, teaching, management of academia, government, and industry. Paid research associate positions for MS students are also available.

PhD Textile Engineering program was started by the department in 2021, making it among very few textile departments of Pakistan to offer the highest degree in textile engineering. Previously, Department Chairman, Prof. Dr. Muhammad Mohsin has successfully supervised/Co-supervised 6 PhDs at various departments/institute on the topic of textile. This program aims at producing PhD Graduates with the attributes of innovation, scientific research and development coupled with advanced analytical skills in the field of textile engineering. The program will develop highly qualified professionals with the abilities to perform leading and advanced scientific research for the uplift of textile industry of Pakistan as well as to enhance the quality of textile related research at academic institutes. Currently, a good number of PhD students are enrolled at the department of textile engineering and doing active research in the areas of textile engineering and textile sustainability.

ANNUAL INTERNATIONAL CONFERENCE ON SUSTAINABLE TEXTILES

1st International conference on sustainable textile 2018 was organized by department of textile engineering. In which many foreigners including Mr. Paul Cowell (Archroma global head of business development), industrial experts and researchers have participated. SDC-UK student textile design competition (Pak region) and top Pakistani textile brands exhibition were also conducted along with international conference in which more than 200 students and different brands exhibited their products and ideas.

2nd International conference on sustainable textile 2019 was organized by textile engineering department. Over 1000 visitors including textile companies' owners, CEOs, industrial managers, and students attended the conference. Mr. Mujtaba Rahim (CEO, Archroma), SDC-UK Technical Director, Mr. Ignasi Cubina (Director, EIG C2C Spain), Ms. Aglaia Gomez (Consultant, EIG C2C Spain) as well as other top experts of the textile field have shared their knowledge at the international conference.

3rd International conference on sustainable textile 2020 was organized by department of textile engineering. Ms. Sussen Margaret Bolt (President, SDC-UK), Mr. Karl Bourghuls (MD, CSI) and Ms. Shelley Andree (Education & Engagement head, SDC-UK) along with other experts shared their thoughts in the conference. SDC-UK Student design competition (Pak region) and Top Pakistani textile brands exhibition were also conducted along with international conference in which more than 450 students and different brands exhibited their products and ideas.

4th International conference on sustainable textile 2021 was held online due to pandemic of corona virus on 19th May 2021. Different scholars, researchers, scientist, Industry representative and students attended this online conference. More than 20 international speakers from across the globe gave their presentations on recent trends and issues of textile industry. Topics of the technical talks cover production of sustainable raw material for textile industry, textile sustainability, wastewater treatment solutions, textile chemical waste & ZDHC etc.

5th International Conference on Sustainable Textile, held on Dec 1, 2022, attracted a diverse group of scholars and over 2,000 participants from industry and academia. The event featured presentations from 15 international speakers covering topics such as smart textiles, zero environmental impact missions, and the role of BCI in sustainability. The establishment of the Textile Sustainability Working Group, initiated by 8 founding members and joined by 270 industrial participants, marked a significant step forward, fostering discussions on operational strategies and future initiatives..

6th International Conference on Sustainable Textile took place on November 8, 2023, at UET Lahore, Faisalabad Campus. Guest of Honors included Prof. Dr. Waqar Mahmood, Dr. Khurram Tariq, representatives from Archroma-Switzerland, and PRGMEA. Prof. Dr. Muhammad Mohsin welcomed the guests and highlighted UET Lahore's efforts towards sustainability. Over 20 international speakers addressed topics like better cotton and eco-friendly processes, aiming to propel Pakistan's textile industry towards sustainability.

International Conference and Competition

6th International Conference on Sustainable Textile 2023

The 6th International Conference on Sustainable Textile was held on November 8, 2023, at UET Lahore, Faisalabad Campus. Guest of Honors for this international conference were Prof. Dr. Waqar Mahmood (Director KICS & CERAD), Dr. Khurram Tariq (President Faisalabad Chamber of Commerce and Industries- FCCI), Archroma- Switzerland (Mr. Paul Cowel), CEO Archroma (Mr. Mujtaba Rahim), Mr. Assad (Pakistan Readymade Garments Manufacturers and Exporters Association-PRGMEA). The conference convener, Chairman Textile Engineering Department & Campus Coordinator (Prof. Dr. Muhammad Mohsin) welcome the respected guests and top academia and industry representatives. Worthy Vice Chancellor UET Lahore's (Prof. Dr. Habib-Ur-Rehman) vision and efforts of UET towards environment-friendly steps and textile sustainability were also shared with the audience. More than 20 international and nationally renowned speakers have given technical speeches on the various topics of "Textile Sustainability" including better cotton, energy-efficient textile machines, eco-friendly textile processes, sustainable fibers, testing related to textile sustainability as well as how the Pakistani textile industry can move towards more textile sustainability. Eminent speakers from the USA, UK, Canada, Switzerland, Germany, Turkey, Egypt, Netherlands, Greece, Italy, Malaysia, and Australia share their technical knowledge with the textile industry and academia of the country. More than 2000 textile universities and industry representatives of the top textile mills and academia of Pakistan attended this international conference and competition. The event marked another successful endeavor toward advancing sustainable initiatives and fostering a global dialogue on textile sustainability.

Mujtaba Rahim
CEO, Archroma Pakistan

Mr. Mujtaba Rahim leads Archroma as CEO, driving innovation and sustainability in specialty chemicals for textiles, packaging, and paper industries. With extensive experience along with his visionary leadership has positioned Archroma as a global frontrunner in delivering high-performance and eco-friendly solutions.

Prof. Dr. Waqar Mehmood was one of our honorable chief guest. He has also worked with us in the past years and have attended our mega events. His welcoming remarks and discussion boosted up the audience and set the tone for the rest of the conference. He enlightened the conference audience with the role of IT and energy for textile. He also shares his vast experience in above two fields and how textile industry can get the best out of it in these two fields.

Prof. Dr. Waqar Mahmood
Director, KICS & CERAD

Dr. Khurram Tariq
President, FCCI

Dr. Khurram Tariq is the President of the Faisalabad Chamber of Commerce and Industry (FCCI), a key organization representing huge industry of Faisalabad. With extensive experience and strategic leadership, Dr. Khurram Tariq advocates for business interests, sustainability and fosters economic growth in Faisalabad. His efforts aim to empower entrepreneurs and drive sustainable development in the region.

Key Speaker-6th International Conference on Sustainable Textile

Mr. Paul Cowell

Head of Global Business Development & BPT, Archroma, Switzerland

Transforming our industry towards a more sustainable world

"Through our innovative approach to denim dyeing, we are championing sustainability by optimizing resources, reducing environmental impact, and delivering authentic, secure, and sustainable denim jeans for brands and retailers"

The conference emphasizes the importance of collaboration among brands, mills, and suppliers to address common challenges and work towards shared environmental and health objectives. A leading company in denim dyeing is at the forefront of this effort, advocating for a comprehensive approach to innovation that optimizes resources and reduces environmental footprint.

Their approach involves a condensed yet efficient system that significantly cuts down on water consumption, energy usage, and CO2 emissions compared to traditional methods. What sets them apart is their utiliz The conference emphasizes the importance of collaboration among brands, mills, and suppliers to address common challenges and work towards shared environmental and health objectives. A leading company in denim dyeing is at the forefront of this effort, advocating for a comprehensive approach to innovation that optimizes resources and reduces environmental footprint.

Their approach involves a condensed yet efficient system that significantly cuts down on water consumption, energy usage, and CO_2 emissions compared to traditional methods. What sets them apart is their utilization of diresul dyes, offering a broader spectrum of colors and greater flexibility than conventional denim manufacturers.

Moreover, the company is dedicated to sustainability, as evidenced by their number of sustainable eco system, which not only reduces water usage but also simplifies the overall dyeing process. They offer a variety of dyeing systems such as swift weave, one denim, just color, Arko fix new, Arko fix rub, Opti fix rub, and siligen sih-s lip/nmw lip c, catering to different needs and preferences in the market.

Key Speaker-6th International Conference on Sustainable Textile

Mr. Mujtaba Rahim

CEO Archroma Pakistan

Archroma contribution for textile sustainability

"Archroma's commitment to sustainability, innovation, and customer satisfaction, have positioned the company as a global leader in providing high-quality, eco-friendly chemical solutions for diverse industries"

During his presentation at the 6th conference, Mr. Mujtaba Rahim, representing Archroma, highlighted the company's unwavering commitment to sustainability and innovation within the textile and chemicals industry. With a global footprint spanning over 90 countries, Archroma has established itself as a leading provider of end-to-end solutions tailored to meet the diverse needs of its customers. Mr. Rahim emphasized Archroma's renowned technical expertise and the quality of its products, which have garnered industry recognition, including prestigious accolades such as the Platinum EcoVadis award.

Furthermore, Mr. Mujtaba Rahim underscored Archroma's strategic collaborations with renowned brands like VOGUE COLLECTION and G-Star RAW, underscoring the company's leadership position and its keen focus on merging fashion with cutting-edge technology. He highlighted Archroma's production facilities, particularly its two plants in Jamshoro, as centers of innovation and excellence, where the company continues to drive forward-thinking solutions. Mr. Rahim also stressed Archroma's diverse portfolio, which spans across various sectors, ranging from Textile Specialties to Packaging & Paper Specialties, catering to a wide array of markets. He emphasized that through its system solutions and technical expertise, Archroma is committed to ensuring customer satisfaction and value creation, with an unwavering emphasis on safety and quality in all its products. Furthermore, Mr. Rahim highlighted Archroma's dedication to sustainability, showcasing the company's sustainable practices and clean chemistry approach. He pointed out strategic acquisitions, including those involving Clariant and Huntsman, as instrumental in bolstering Archroma's position as a global solutions provider. Finally, Mr. Rahim reiterated that Archroma's focus on research and development, coupled with its expertise in system solutions, remains crucial enablers for its sustained success in the industry.

Key Speaker-6th International Conference on Sustainable Textile

Dr. Mattia Bartoli

Center for Sustainable Future Technologies-CSFT, Torino, Itlay

Phytic acid and biochar: An effective all bio-sourced flame-retardant formulation for cotton fabrics

"Embracing biochar and eco-friendly materials in flame retardant formulations signifies a move towards safer and sustainable textile manufacturing, thus reducing risks to both human health and the environment posed by conventional materials"

Dr. Mattia Bartoli's presentation was a deep dive into the realm of innovative materials for flame retardant formulations, with a particular emphasis on carbon and biochar. He highlighted the pivotal role of materials throughout history in propelling human progress, underscoring the transformative impact of polymers and composites across diverse industries. While carbon, especially in the form of carbon black, has been extensively utilized and its environmental implications present significant challenges. In contrast, biochar, derived from biomass waste, emerges as a promising and sustainable alternative for flame retardant applications. Dr. Bartoli elucidated the intricate combustion process and emphasized the critical role played by flame retardants in preventing the escalation of fires to their full intensity. One of the focal points of the presentation was a comprehensive study that integrated biochar with a phosphorus-based material to develop flame-retardant cotton textiles. The research findings showcased remarkable efficacy in reducing combustion, thereby highlighting the potential of biochar-based formulations in enhancing fire safety standards. Moreover, the study demonstrated the sustained flame-retardant properties of these textiles even after undergoing multiple wash cycles, underscoring their durability and longevity. Embracing biochar and eco-friendly materials in flame retardant formulations signifies a move towards safer and sustainable textile manufacturing, thus reducing risks to both human health and the environment posed by conventional materials.

Dr. Bartoli's presentation underscored the importance of ongoing research in leveraging biochar and eco-friendly materials for flame retardant applications, aligning with sustainability goals in the textile industry. His work promotes a future where fire safety and ecological considerations are seamlessly integrated into material design and production processes.

Key Speaker-6th International Conference on Sustainable Textile

Prof. Dr. Seshadri Ramkumar

Texas Tech University, USA

Sustainable Nonwoven Products

"Emphasized the sustainability related to the fiber sector, showcasing innovative applications of non-woven materials and the superior oil absorbency of low micronaire cotton"

During the keynote lecture at the sixth international conference on sustainable textiles, the speaker from Texas Tech University, USA, delved into the critical aspects of sustainability within the fiber sector, with a specific focus on non-woven products. The presentation emphasized the multifaceted nature of sustainability, encompassing material, energy, and economic considerations. Notably, there was a significant emphasis on the transition from plastic-based materials to natural fibers, driven by the imperative to reduce environmental impact.

A pivotal aspect highlighted in the lecture was the application of non-woven materials in various sectors such as hygiene, medical, and defense. Of particular interest was the innovative use of mechanically processed clean cotton, inspired by the Gulf of Mexico oil spill in 2010. This research initiative aimed to address environmental challenges while simultaneously catering to practical needs in oil absorbency.

The speaker elucidated the methodology employed, utilizing high volume instrumentation and bet surface area analysis to assess the oil absorption capabilities of low micronaire cotton compared to base-range cotton. The results showcased a significant statistical difference, affirming the superior oil absorption capacity of low micronaire cotton. Furthermore, the lecture delved into the mechanism underlying oil absorption and elucidating how low micronaire cotton effectively captures oil contaminants. This understanding opened doors to potential applications in oil refineries and industrial oil spill cleanup efforts, where the use of sustainable materials can significantly enhance efficiency while mitigating environmental harm.

Key Speaker-6th International Conference on Sustainable Textile

Mr. Asad Bajwa
PRGMEA & CEO, South Asia Sourcing

Effort of Prgmea in achieving textile sustainability

"South Asian Sourcing Pvt. Ltd is the first and largest Fairtrade and organic certified cotton producer in Pakistan, emphasizing sustainable cultivation, community support, and environmental stewardship, while PRGMEA promotes comprehensive sustainability assessments among its members, contributing significantly to various Sustainable Development Goals (SDGs) such as poverty reduction, education, climate action, and sustainable partnerships"

South Asian Sourcing Pvt. Ltd. and PRGMEA are both leading the charge in promoting sustainability within the textile industry, each with distinct yet impactful approaches. South Asian Sourcing Pvt. Ltd. sets itself apart by being the pioneer and largest Fairtrade and organic certified cotton producer in Pakistan. Their commitment to sustainable cotton cultivation goes beyond mere certification, encompassing a holistic approach that prioritizes community support and environmental stewardship. Initiatives such as waste reduction, water conservation, and carbon emission minimization underline their dedication to reducing environmental impact. Moreover, their investments in community education and welfare, including the distribution of school supplies and demonstrate a commitment to social responsibility. Notably, their afforestation projects aimed at reclaiming land and showcase proactive efforts to mitigate environmental degradation.

On the other hand, PRGMEA adopts a broader approach to sustainability, focusing on comprehensive assessments and strategies among its members. Emphasizing emission calculations and mitigation strategies, PRGMEA encourages its members to adopt practices that minimize their carbon footprint. Advocating for initiatives such as afforestation, organic cotton adoption, recycling, and the promotion of circular fashion concepts, PRGMEA contributes significantly to various Sustainable Development Goals (SDGs). These efforts extend beyond environmental concerns, addressing social issues such as poverty reduction, education, and fostering sustainable partnerships within the industry. Both companies play vital roles in advancing sustainable development within the textile industry and beyond. While South Asian Sourcing Pvt. Ltd. excels in on-the-ground implementation of sustainable practices at the production level, PRGMEA'S focus on comprehensive assessments and advocacy among industry members for the systemic change. Together, their efforts contribute to a more sustainable future for the industry.

Key Speaker-6th International Conference on Sustainable Textile

Prof. Dr. Mehmat Karahan
Uludag University Bursa, Turkey

Green fibers and their properties as an alternative for composites reinforcement

"The study examines jute, hemp, linen, sisal, and banana fibers for composite reinforcement, revealing their distinct properties like jute's hollow structure and hemp's rot-like nature. These findings support the increasing use of natural fiber-based composites in various manufacturing sectors"

In the study conducted by the Department of Materials Sciences, the focus was on exploring green fabrics as viable alternatives for composite reinforcement. The research compared five distinct natural fibers: jute, hemp, linen, sisal, and banana fibers, evaluating their potential as reinforcement materials in composite structures. To thoroughly analyze the characteristics and properties of these fibers, a range of characterization methods were employed. These include scanning electron microscopy (SEM) to examine surface morphology, ancillary testing for mechanical properties, Fourier transform infrared spectroscopy (FTIR) for chemical composition analysis, Thermo gravimetric analysis (TGA) for thermal stability assessment, Differential scanning calorimetry (DSC) for thermal transitions, Energy dispersive X-ray spectroscopy (EDS) for elemental analysis, and Raman spectroscopy for molecular structure characterization. The results of the study provided valuable insights into the unique properties of each natural fiber. For instance, jute fibers were observed to have a hollow structure, which can influence their mechanical properties and suitability for specific applications. Hemp fibers exhibited a "rot-like" appearance with notches on their surfaces, potentially affecting their adhesion characteristics in composite materials. Linen fibers were noted for their softness, making them particularly desirable for clothing fabrics, especially in women's apparel. On the other hand, banana fibers were found to offer practical advantages such as improved moisture management and air permeability, which could enhance comfort in textile applications. The research emphasized the rising significance of natural fiber-based composites in diverse industries due to their sustainable nature, utilizing renewable and biodegradable resources. These findings enhance our comprehension of natural fibers' applicability in composites, facilitating the advancement of eco-friendly materials in textiles and other sectors.

Key Speaker-6th International Conference on Sustainable Textile

Prof. Dr. Elsayed Ahmed Elnashar
Ex-dean & current Professor of Textile& Apparel, kafer el sheikh university, Egypt

Technology banks: a fifth-generation of automation control systems for compact of old machines in textile industries

"The sixth conference highlighted sustainable advancements in the 5th generation of textile automation, emphasizing efficiency and resource optimization through mechatronics and repair systems like weaving and 3D printing"

At the sixth conference, the presenter highlighted the significant advancements in 5th generation automation within the textile and clothing industries, with a particular emphasis on integrating technology to enhance sustainability practices. This new wave of automation encompasses a wide range of cutting-edge technologies, including mechatronics, sensor dynamics, and energy-efficient systems, all geared towards maximizing the utilization of natural resources and renewable materials while minimizing environmental impact.

Compared to previous generations, such as the 4th generation, 5th generation automation technology exhibits greater complexity, shorter development times, and expanded capabilities. It incorporates advanced sensor technologies, radar systems, and multi-axis covert manipulation, enabling more precise and efficient operations within textile manufacturing processes.

A notable aspect highlighted in the presentation is the integration of repair systems, such as weaving and 3D printing, into the automation framework of the textile industry. These systems play a crucial role in enabling intelligent manufacturing and production by facilitating on-the-fly repairs and customization, thereby enhancing efficiency and reducing waste.

Overall, the presenter underscored the transformative potential of 5th generation automation technology in revolutionizing the textile and clothing industries towards more sustainable practices. By harnessing advanced technologies and integrating them seamlessly into manufacturing processes, the industry can optimize resource utilization, minimize environmental impact, and pave the way for a more sustainable future.

Key Speaker-6th International Conference on Sustainable Textile

Prof. Dr. Muhammad Mohsin
Chairman, Textile Eng. Dept, Faisalabad Campus

Progress on textile sustainability and way forward

"UET's Textile Department engages in comprehensive sustainable textile research, encompassing innovations in sustainable dyeing processes, textile bleach recycling, fluorine free repellents, halogen and formaldehyde free fire-retardants, agro waste-based fibers, waste recycling into various products, and a commitment to non-toxic, bio-based processes, demonstrating a focus on water, chemical, and cost efficiency in their initiatives"

During the campus coordinator presentation, the sustainable textile research efforts at UET's Textile Department were thoroughly elaborated upon, showcasing a diverse array of innovative initiatives aimed at promoting sustainability across various aspects of textile production and processing. The presentation highlighted groundbreaking advancements in finishing processes, with a particular focus on developing non-toxic and bio-based finishes and finishing process. Sustainable dyeing as well as department patented natural dyeing were also highlighted by the presenter. These efforts align with the department's commitment to minimizing environmental impact while ensuring vibrant and durable coloration in textiles. Additionally, research into bio mosquito repellents, bio fire retardants (halogen and formaldehyde free), bio oil and water repellents (fluorine free), and bio anti-viral and anti-microbial (metal free) finishes underscored a holistic approach towards enhancing textile functionality while addressing pressing societal and environmental challenges. A significant aspect of the presentation was the exploration of alternative raw materials derived from agro waste, such as okra and banana fibers. By leveraging these renewable resources, the department aims to reduce dependence on conventional fibers while simultaneously promoting waste valorization and circular economy principles. Moreover, initiatives focusing on waste (textile industry, pos consumer etc.) recycling into valuable products like carbon black, conductive inks, composites, and bio-oil by using department innovative patented technology highlight the department's commitment to resource efficiency, value addition, sustainability and waste management. The emphasis on sustainable practices throughout the textile production chain was evident, with initiatives spanning from new and agro fibers, spinning and weaving, bealach recycling, dyeing and finishing processes to wastewater treatment, new water and energy efficient machine development and waste recycling. Novel techniques such as foam dyeing, nano bubble dyeing and finishing, digital printing and finishing, and water-less dyeing and finishing exemplify the department's proactive approach towards adopting environmentally friendly technologies that conserve water, reduce chemical usage, and optimize cost efficiency.

Furthermore, the department's commitment to environmental stewardship extends beyond research endeavors to practical initiatives such as plantation drives, urban forests, and creating a green campus environment. These efforts underscore a holistic approach towards sustainability that encompasses both academic pursuits and tangible actions aimed at fostering a greener and more sustainable future for the textile industry and the wider community.

Key Speaker-6th International Conference on Sustainable Textile

Dr. Shafiq Ahmad

Country Manager (Pakistan), Better Initiative

BCI role and sustainability

"The primary goal of Better Cotton, the world's largest cotton sustainability initiative, is to support the survival and prosperity of cotton communities while preserving and rehabilitating the environment, achieved through sustainable methods, an impact Marketplace to increase farmer incomes, and a coalition of change makers focusing on climate and biodiversity efforts at various levels."

At the 6th conference, Better Cotton, the foremost initiative for promoting sustainability in the cotton industry globally, reiterated its commitment to enhancing the well-being of communities engaged in cotton cultivation while also safeguarding the environment. The initiative's core objective is to achieve this by advocating for and promoting sustainable practices that cater to the needs of both the cotton industry and the farmers involved. To further support its members in fulfilling their Science Based Targets (SBT) commitments and maximizing the effectiveness of their allocated resources, Better Cotton is in the process of developing an Impact Marketplace. This digital platform is envisioned to serve as a centralized hub for various activities, including bolstering farmer incomes, expediting progress in sustainability endeavors, utilizing verified data to stimulate market demand, and recognizing the intricate interdependence between humanity and the natural world.

Moreover, Better Cotton is actively in the process of assembling a coalition of change makers to spearhead initiatives aimed at accelerating efforts related to climate action and biodiversity conservation. This coalition will play a pivotal role in offering guidance, fostering collaboration in the development of impactful programs, providing financial support to accelerate progress, and operating across multiple levels, from individual farm practices to broader community and systemic interventions. Through its concerted efforts in bringing together diverse stakeholders and facilitating collaborative endeavors, Better Cotton aims to generate meaningful and enduring positive impacts for cotton-producing communities and the environment alike. By fostering cooperation, innovation, and collective action, Better Cotton seeks to drive significant progress towards a more sustainable future for the cotton industry and beyond.

Key Speaker-6th International Conference on Sustainable Textile

Mr. Nadeem Afraz

UMT, Lahore

Vat dyeing of cotton fabric using foam coating technique

"The presenter advocates for a sustainable foam coating technique in vat dyeing cotton fabric, addressing sustainability challenges in the textile industry by reducing process time, water and chemical consumption, and overall finishing costs. The study demonstrates that foam-dyed cotton fabric exhibits comparable properties to conventional methods, indicating the potential of sustainable foam coating for efficient and eco-friendly vat dyeing in the textile industry."

The presenter delved into a significant innovation in vat dyeing cotton fabric, focusing on a sustainable foam coating technique aimed at addressing key sustainability and efficiency challenges within the textile industry. Foam technology emerges as a promising solution to mitigate several issues such as prolonged processing times, excessive water and chemical consumption, and high finishing costs associated with traditional dyeing methods. Through meticulous research conducted at the department, various parameters of foam dyeing were thoroughly examined. This included the selection of appropriate foam agents and the refinement of application methods to optimize results. The study's findings indicate that vat-dyed cotton fabric treated with foam demonstrates comparable properties to those achieved through conventional dyeing methods, showcasing the feasibility and effectiveness of foam technology. Furthermore, the research highlights the potential of foam dyeing in achieving desired color shades, enhancing air permeability, and improving tearing strength, particularly when employing higher dye concentrations. These observations underscore the versatility and adaptability of foam coating techniques in meeting diverse textile production requirements.

Overall, the presenter's research suggests that sustainable foam coating holds significant promise for revolutionizing vat dyeing processes for cotton fabric. By offering a more efficient and eco-friendly alternative to conventional methods, foam technology has the potential to significantly benefit the textile industry, driving advancements towards sustainable and responsible manufacturing practices.

Key Speaker-6th International Conference on Sustainable Textile

Dr. Muhammad Wakil Shahzad

Associate Professor, North Umbria University UK

An advance water treatment system operated with solar energy

"The Adsorption Cycle, funded by a university in Saudi Arabia, introduces a breakthrough solution to the escalating global water scarcity crisis by integrating multifaceted distillation systems and solar energy collectors. This hybrid system achieves a remarkable increase in water production compared to conventional methods, offering a cost-effective and sustainable solution for addressing water scarcity, especially in countries like Pakistan where water availability is a significant concern"

The escalating global water scarcity crisis, particularly acute in countries like Pakistan where water availability is less than 1000 cubic meters per capita, necessitates innovative approaches to water treatment. Traditional methods like reverse osmosis and thermal dissolution have been effective but come with significant environmental costs, including high energy consumption and CO_2 emissions. To tackle these challenges, a breakthrough solution introduced by the Adsorption Cycle, funded by a university in Saudi Arabia, has emerged. This innovative approach integrates multifaceted distillation systems with solar energy collectors to produce water efficiently. The hybrid system maximizes the use of renewable energy sources, such as solar power, to minimize energy consumption and reduce environmental impact. By leveraging solar energy, the system significantly decreases reliance on fossil fuels, thereby mitigating CO_2 emissions associated with traditional water treatment processes. Moreover, the hybrid system developed by the Adsorption Cycle achieves a remarkable increase in water production compared to conventional methods. Mother Technologies, a key player in the development of sustainable water solutions, actively contributes to the advancement of future water treatment systems. Their involvement underscores a commitment to addressing water scarcity through innovative technologies that prioritize sustainability and environmental stewardship. Overall, the integration of multifaceted distillation systems with solar energy collectors represents a significant step forward in the quest for sustainable water treatment solutions. By harnessing renewable energy sources and maximizing efficiency, this breakthrough technology has the potential to alleviate water scarcity challenges and pave the way for a more sustainable future.

Key Speaker-6th International Conference on Sustainable Textile

Mr. Karl Borgschulze

Managing Director, CSI (Consulting Service International)

Textile sustainability and framework conditions for production and trade

"Despite global crises and increased price pressures, there are opportunities for Pakistan in the face of sustainability challenges, with expertise in circular solutions. The key lies in adaptation, capitalizing on existing strengths, and fostering collaboration for a brighter future in the changing business landscape"

In the wake of the global crises post-pandemic, the world is experiencing heightened price pressures on consumers, particularly in essential sectors such as food and fuel. Additionally, Europe is undergoing a significant transition towards renewable energies driven by stringent regulations aimed at reducing carbon emissions and combating climate change. However, this shift poses challenges for industries, especially regarding supply chain sustainability, as they must comply with new laws like the European and German due diligence laws and evolving American regulations. Investors are increasingly prioritizing companies with strong environmental, social, and governance (ESG) practices, leading to a greater focus on sustainability across industries. Moreover, major markets are enforcing stringent laws to penalize companies for issues such as forced labor and misleading sustainability claims, further driving the imperative for sustainable business practices. Amidst these challenges, Pakistan is presented with opportunities to leverage its expertise in circular solutions and sustainability. By adapting to the changing business landscape, capitalizing on existing strengths, and fostering collaboration, Pakistan can seize these opportunities to create a brighter future. Embracing sustainable practices not only benefits the environment but also enhances competitiveness, fosters innovation, and strengthens resilience in the face of global challenges. Therefore, navigating through the evolving regulatory environment and aligning with global sustainability trends can position Pakistan as a leader in sustainable business practices, opening up new avenues for growth and prosperity in the post-pandemic era. Collaboration between government, industry, and civil society will be crucial in driving sustainable development and achieving long-term success in the changing global landscape.

Key Speaker-6th International Conference on Sustainable Textile

Dr.Triet Nguyen

Analytical Chemist PAX, Australia

Piezoelectric Nano-generator for flexible and wearable applications

"The study examines energy harvesting for autonomous systems, emphasizing mechanical sources like water cracking. It introduces Nano-combust paint technology for water energy harvesting, showing durability and potential for use in volatile organic compound (VOC) environments"

The increasing demand for autonomous systems in remote areas and within the human body has spurred significant research into energy harvesting and storage systems. Mechanical vibration and movement, such as water cracking, are identified as primary sources of mechanical energy that can be harnessed for powering these autonomous systems. In response to this demand, a study presents two papers: the Nano-compressive vdd-ati and the Nano-fiber vdd-ati. The Nano-compressive work involves utilizing nanomaterials positioned between bottom nickel and top aluminum electrodes on a poly-use tray, while the Nano-fiber vdd-ati utilizes a high crystallization piezoelectric polymer matrix. Both approaches aim to harvest mechanical energy efficiently and convert it into electrical energy for powering various applications. The Nano-combust paint, in particular, emerges as an effective method for water energy harvesting, exhibiting high durability, stability, and performance. This technology holds significant potential for future power systems operating in volatile organic compound (VOC) environments, where traditional power sources may be impractical or unavailable. By leveraging nanomaterials and innovative polymer matrices, these energy harvesting systems offer a sustainable and reliable solution for powering autonomous systems in remote or challenging environments. Overall, the advancements in energy harvesting and storage systems presented in the study represent a significant step towards meeting the increasing demand for autonomous systems. By tapping into mechanical energy sources such as water cracking, these systems offer a viable solution for powering devices in remote areas and within the human body. With further research and development, these technologies hold the promise of revolutionizing power systems and enabling greater autonomy and efficiency in a wide range of applications.

Key Speaker-6th International Conference on Sustainable Textile

Dr. Mohammad Faizul Yahya

Head of Strategic Planning, University Technology Mara, Malaysia

Modeling and simulation for sustainable textiles: a path to a greener future

"The university targets a higher global ranking by 2025, emphasizing sustainable textiles. It plans to develop eco-friendly materials and production methods, integrating IoT, cyber security, big data, and augmented reality to potentially usher in a fourth industrial revolution in the textile sector"

The university has set an ambitious goal to improve its global ranking in the textile sector by focusing on sustainability, aiming to position itself between ranks 650 and 700 by the year 2025. Recognizing the pressing need for eco-friendly materials and production methods in the textile industry, the university places a strong emphasis on minimizing water usage and reducing the use of harmful chemicals in textile manufacturing processes. Sustainable textiles are seen as crucial in mitigating the environmental impact of the fashion industry, conserving resources, and lowering carbon emissions. To achieve this goal, the university proposes an extension framework that encompasses several key components. First, there is a focus on designing materials and processes that are inherently sustainable, taking into account factors such as biodegradability, recyclability, and reduced environmental footprint. Additionally, the university aims to develop design engineering principles that prioritize sustainability throughout the entire product lifecycle, from raw material sourcing to end-of-life disposal. Central to the university's approach is the integration of cutting-edge technologies such as Internet of Things (IoT), cyber security, big data analytics, and augmented reality. By harnessing the power of big data, the university aims to analyze material properties and inform the development of sustainable textiles. This integration has the potential to usher in a fourth industrial revolution in the textile industry, where digital technologies play a central role in driving innovation and efficiency. Simulation, in various forms including statistical, mathematical, modern, and artificial intelligence-driven, is identified as a key tool in the development and optimization of sustainable textile materials and processes. By leveraging big data as a raw material for simulations, the university aims to improve the management of material properties, minimize trial and error, and drive innovation in sustainable textile production.

Key Speaker-6th International Conference on Sustainable Textile

Mr. Saad Shahid

Environment & Sustainat Division, TTI

Prerequisites for development of a green, traceable and sustainable supply chain

"Achieving carbon neutrality and decarbonizing the entire supply chain."

At the 6th conference, Mr. Saad Shahid, a speaker from the Environment & Sustainability Division at TTI, delivered a compelling presentation on the prerequisites for building a green, traceable, and sustainable supply chain. His vision went beyond simply incorporating eco-friendly practices; he emphasized the ambitious goal of achieving carbon neutrality and complete decarbonization across the entire supply chain. This requires a significant shift towards environmental responsibility throughout every stage. But achieving such a transformation is no small feat. Mr. Shahid acknowledged the challenges and highlighted the importance of a multi-pronged approach. He underscored the need to minimize risks associated with traditional supply chains, while simultaneously streamlining business processes to improve efficiency. Most importantly, he emphasized fostering a culture of innovation to develop new approaches and technologies that can support this sustainable transformation.

The presentation provided a roadmap for businesses to embark on this journey. The first step involves comprehensively mapping their entire supply chain, gaining a clear understanding of every link from raw material acquisition to final product delivery. This transparency allows for the identification of potential environmental impacts through life cycle assessments (LCA). Once these impacts are understood, businesses can begin to adapt their internal structures and processes to prioritize sustainability. Collaboration with suppliers is also crucial. Mr. Shahid stressed the importance of formulating clear and comprehensive sustainability requirements for suppliers. These requirements should be accompanied by robust evaluation methods to ensure suppliers are meeting these standards. Finally, transparent reporting on the overall progress towards a sustainable supply chain is essential. By sharing their journey and challenges, businesses can not only hold themselves accountable but also inspire and collaborate with others on the path towards a greener future.

All Pakistan Textile Sustainability Student Competition 2023

All Pakistan Textile Sustainability Student Competition 2023 took place along with the international conference on Sustainable Textile 2023 and more than 550 sustainability projects from the universities across Pakistan including Karachi, Rawalpindi, Peshawar, Lahore, Faisalabad, Sargodha, etc., were shortlisted, and displayed. Students from 40 institutes across Pakistan showcased innovative ideas, emphasizing a collective dedication to advancing sustainable practices in the field of textiles. It was an excellent display of the talent of Pakistani youth and their projects display several innovative ideas regarding textile sustainability. Visitors from academia and industry appreciated the students' projects. The top 11 projects among the 550 were selected by the expert judges and merit certificates and prizes were given at the grand closing ceremony. Mr. Paul Cowel of Archroma- Switzerland and industry representatives were impressed with the display of the university talent and the arrangement of the UET organizers. .

Glimpse of All Textile Student Sustainability Competition 2023

"Explore the dynamic landscape of sustainable textile innovation at the All Pakistan Textile Sustainability Student Competition 2023, held at the Department of Textile Engineering, UET Lahore, Faisalabad Campus. Amidst a vibrant atmosphere of creativity and collaboration, students from leading universities of this field across the nation converged to present their groundbreaking projects aimed at revolutionizing the textile industry. Witness the culmination of months of dedication and ingenuity as these aspiring engineers and designers showcase their pioneering solutions to address pressing sustainability challenges. From innovative material compositions to advanced manufacturing techniques, the event exemplifies the collective effort to foster a more environmentally conscious and socially responsible textile sector. Celebrate the remarkable achievements of Mahnoor Khan, Romaisa Shahid, Eman Fatima Zafar, and other talented participants who are driving positive change and shaping the future of sustainable textiles"

Mahnoor Khan
University of Jhang
1st Position

Romaisa Shahid
University of Agriculture, Faisalabad
2nd Position

Eman Fatima Zafar
University of Sargodha
3rd Position

Maham Ilyas
NTU, Faisalabad
4th Position

Maryam Aman
Department of Textile Engineering, UET Faisalabad Campus
5th Position

Zeenash Waseem Sarwar
Faisalabad Institute of Texti & Fashion Design, GCUF
6th Position

Ayaz Mustafa
NCA, Rawalpindi
7th Position

Fatima Raheem
Lahore College Women University, Lahore
8th Position

Muhammad Usman
Superior University Lahore
9th Position

Muhammad Zafar
Institute of Arts & Culture, Lahore
10th Position

Um e Abeeha
Government College Women University, Faisalabad
11th Position

Dr. Shaheen Sardar

Associate Professor

PESTEL analysis of the textile industry in Pakistan

"Textile industry in Pakistan is facing serious challenges. PESTEL analysis reveals political instability, economic hurdles, and social issues such as inadequate health and safety regulations, employee abuse, and a lack of incentives. Addressing these factors is crucial for enhancing competitiveness and navigating the industry's macro-environmental landscape"

Introduction: The survival of the textile industry of Pakistan is becoming challenging due to the severe global competition. Macro-environmental analysis is a fundamental part of the strategic management of any business for understanding the competitiveness of a business. This article performs PESTEL (political, economic, social, technological, environmental, and legal) analysis for the textile industry of Pakistan. PESTEL analysis is a mostly used tool for the macro-environmental analysis.

PESTEL analysis: PESTEL analysis is an important framework which has been used in the analysis of the hundreds of new and existing businesses in the world.

Political factors: Recently, the political government is facing various challenges which can affect the competitiveness of the textile industry of Pakistan. The following are the key political factors which should be considered by the textile industry of Pakistan.

- The continuous political instability is causing the direct impact on the competitiveness of the textile industry of Pakistan. This causes the lack of development plans [1].
- There is a major issue of continuous electricity and gas supply to the textile industry.
- The policies regarding the tax reduction, export/import facilitation and investment incentives are inconsistent and unfavorable, which results in export/import issues for the textile products and machineries.

Economic factors: This section enlists the key economic factors which are hindering the progress of the textile industry of Pakistan.

- The textile industry is unable to get the external funds for the technology adoption, skills development, and infrastructure development [2].
- The increasing taxes on the exports are increasing overall product cost.
- The higher inflation rates are causing the increase in production cost, uncompetitive salaries, and decrease in export.

The textile industry in Pakistan confronts a range of intricate challenges across social, technological, environmental, and legal dimensions. Socially, the industry grapples with labor-related issues such as inadequate implementation of health and safety regulations, instances of verbal abuse, and excessively long working hours without voluntary overtime or proper incentives. These factors contribute to workforce dissatisfaction and hamper productivity. Technologically, the sector faces hurdles in modernization, with many companies relying on outdated machinery and lacking efficient mechanisms for timely technology adoption and replacement. This technological lag diminishes the industry's competitiveness on the global stage, leading to increased production costs and decreased product quality. From an environmental standpoint, the industry encounters pressure from international buyers due to non-compliance with environmental standards. Conventional production methods contribute to significant water and energy consumption, chemical pollution, and improper waste disposal, posing environmental risks and affecting sustainability efforts. Legally, challenges persist in the effective implementation of minimum wage laws, environmental regulations, and consumer protection laws. Inconsistent enforcement undermines efforts to uphold labor rights, environmental standards, and consumer safety within the industry. To address these multifaceted challenges and promote sustainable development, collaborative efforts between industry stakeholders and government entities are essential. Simplifying regulations, promoting the adoption of renewable energy sources, and streamlining import-export procedures can enhance the industry's operational efficiency and competitiveness. Additionally, prioritizing social welfare initiatives, investing in sustainable technologies, and implementing environmentally friendly practices are critical steps toward achieving long-term sustainability and supporting broader development objectives in Pakistan's textile sector.

Concluding remarks: The textile industry of Pakistan would support the sustainable development goals through the cooperation from government. Political factors are a major hindrance in the sustainable development. Especially, the possible simplification or removal of unnecessary rules and regulations would accelerate the sustainable development process. Government would facilitate the access to new export destinations. The energy shortage would be addressed through the adoption of large scale renewable energy production. The industry and government should work together to accelerate the import and export in order to reduce cost and generate the dramatic profits. The industry should address the social factors through the elimination of the discrimination, availability of proper health and safety, and competitive financial support. The textile industry should focus on the adoption of latest and sustainable technologies in the supply chain management. The focus on the environmental sustainability should be increased. Finally, the effective implementation of the important legal laws should be ensured on the priority basis.

Dr. Aamer Khan

Assistant Professor

Closed loop circularity in textile waste

"Textile waste management strives to minimize and recycle fashion industry waste, totaling 92 million tons annually. Strategies like modular design, reduced chemicals, and recycling face challenges due to supply chain complexities and cooperation barriers"

Introduction: Closed-loop circularity in the context of textile waste refers to a sustainable and environmentally friendly approach to managing the life cycle of textiles. The phenomenon involves designing and implementing systems that minimize waste, encourage recycling, and create a continuous loop where materials are reused or regenerated. The closed-loop concept aims to reduce the environmental impact of textile production and consumption.

Worldwide volume of textile products and subsequent waste: With a market capitalization of just over $1.5 trillion, the global fashion business is both profitable and harmful. In 2017, the global fashion industry produced almost 92 million tons of textile waste yearly, according to the Ellen MacArthur Foundation's "A New Textiles Economy: Redesigning Fashion's Future" report. Both pre- and post-consumer waste from manufacturing and abandoned garments is included in this amount.

Approaches towards achieving closed loop circularity in textile waste: A thorough and coordinated strategy across the whole textile supply chain is required to achieve closed-loop circularity in textile waste. Below is a brief discussion of some important strategies.

- Eco-friendly materials: Go for products made of renewable resources, recyclable materials, or biodegradable materials.
- Use modular design to build items so they can be readily upgraded, repaired, or disassembled to increase their lifespan.
- Decrease chemical use: Use as few dangerous chemicals as possible during the production process.
- Mechanical recycling: Use techniques to separate textiles into fibers so they can be recycled into new goods.
- Chemical recycling: Investigate cutting-edge techniques to chemically disassemble fibers into their constituent parts so they can regenerate.

- Closed-loop systems: Set up processes where new textiles are continuously made from recycled materials.
- Develop effective mechanisms for the collection and return of goods through reverse logistics.
- Reverse logistics: Provide effective procedures for gathering and returning discarded textiles.
- Sorting facilities: To increase the effectiveness of recycling, classify textiles according to material kinds by implementing cutting-edge sorting technology.
- Education: Raise consumer knowledge of environmentally friendly solutions, recycling processes, and the effects of textile use.
- Take-back initiatives: Press manufacturers to provide initiatives that allow customers to return unwanted textiles for recycling.
- EPR programs: Put in place laws that make manufacturers accountable for every step of a product's life cycle, including waste disposal.
- Financial incentives: Provide rewards or fines to manufacturers in order to motivate them to create circular products.
- Cutting-edge recycling technology: Invest in and use cutting-edge technologies that improve recycling productivity and lessen their negative effects on the environment.
- Block-chain and traceability: Track the supply chain using technologies like block chain.

Challenges in achieving closed loop circularity in textile waste: There are many obstacles in the way of implementing closed-loop circularity in textile waste. The intricate and disjointed supply chain within the textile sector poses challenges to the adoption of standardized procedures and cooperation. Businesses are discouraged by economic concerns, such as the high upfront costs associated with implementing closed-loop systems. Technological constraints make it difficult to handle a variety of textile materials efficiently, especially when it comes to creating cutting-edge recycling solutions. Educating designers on circular design principles is as important as changing customer behavior away from a disposable society. Implementation is made more difficult by logistical and infrastructure issues, such as setting up effective mechanisms for collection and sorting. Enforcing consistent closed-loop methods is also hampered by multinational supply chains, a dearth of recycling facilities, and unclear legislation. Development is further hampered by the market's low demand for recovered textiles and the industry's aversion to change. In order to advance sustainable and circular practices in the textile sector and overcome these obstacles, firms, governments, consumers, and research institutes must work together.

Conclusions

In summary, the textile sector may limit pollution, lessen its dependency on virgin resources, and support a more sustainable and circular economy by adopting closed-loop circularity in textile waste. This strategy encourages ethical production and consumption methods while also supporting more general environmental aims.

Dr. Usama Bin Humayoun

Assistant Professor

Inorganic Nano-Coloration: A Concept of Simultaneously Dyeing and Finishing of Textiles

"Integration of nanomaterials revolutionizes textiles, offering enhanced performance and sustainability. Innovations like nanocomposites and intelligent coatings address challenges like stain resistance and environmental concerns in dyeing processes"

In the last two decades, a profound revolution has swept through various industries, transforming almost every aspect of modern life like, electronics, medicines, foods, textiles etc. This unprecedented progress owes much to the integration of nanomaterials, which are materials with at least one dimension on the nanometer scale, typically ranging from 1 to 100 nanometers. The unique properties like color, conductivity, strength etc. exhibited by nanomaterials at this scale have fueled groundbreaking advancements in modern products. In textiles, the infusion of nanotechnology has given rise to an array of cutting-edge products, ranging from nanocomposites and nanofibers to intelligent polymeric coatings. This transformative integration extends beyond high-performance applications, making significant impacts in conventional textiles to introduce new functionalities and elevate overall performance. Among the remarkable textile performances achieved through nanofinishes are stain resistance, antimicrobial properties, controlled hydrophilicity/hydrophobicity, antistatic capabilities, UV resistance, as well as wrinkle control and shrink-proof abilities. These advancements open up possibilities for a diverse range of technical textile applications, spanning protective clothing, medical textiles, sportswear, and automotive textiles. The textile and fashion industry, though a thriving global business, faces the dual challenges of meeting aesthetic demands and addressing environmental concerns. Traditional textile dyeing processes contribute significantly to environmental pollution, with the use of toxic dyes and chemicals causing harm to consumers, manufacturers, and the ecosystem. Azobased dyes, constituting around 70% of colorants in the industry, are particularly notorious for their toxicity. Additionally, the complex organic structures of textile dyes create compatibility issues with functional

finishes, leading to poor performance and undesirable shade changes. The conventional dyeing process further aggravates environmental issues, with the discharge of hydrolyzed dyes and auxiliaries proving harmful to aquatic life. In response to these challenges, nanomaterials engineering has emerged as a game-changer, offering novel solutions for sustainable and efficient textile processing. Nano coloration, utilizing the intrinsic properties of various nanomaterials to absorb and reflect energy in the visible region, presents a sustainable alternative to toxic dyes. One of the important factors in this point is the ability of nanomaterials to exist in different colors based on their morphology. Nanoparticles, such as silver and gold metallic nanoparticles, have been successfully applied to textiles, combining coloration with antimicrobial properties. Researchers have explored the plasmonic resonance effect of nanosilver and anisotropic silver nanoparticles for one-step coloration and functionalization of textile substrates. Despite these advancements, challenges remain in achieving durable and aesthetically pleasing fabric coloration. Many existing nano coloration processes suffer from poor dyeing fastness and durability due to limited bonding interactions between nanomaterials and textile substrates. The easy release of nanoparticles from the substrate adds to environmental pollution. Additionally, comfort aesthetics, a key performance indicator for textiles, are overlooked in nano coloration processes. Interestingly a recent research addresses these issues. A new, facile, and green process demonstrates an alternative to toxic textile dyes and auxiliaries. This one-step nano coloration and functionalization method employs the conventional pad-dry-pad-cure process for easy commercial adaptation. Utilizing nontoxic and green reagents, cuprous oxide nano particles were synthesized on a cellulosic fabric. The highlighting point of the research is the crosslinking of these nanoparticles to cellulosic fabric, giving them longevity in washing fastness. This innovative approach involves the use of in-situ synthesis of cross-linked nanoparticles to create decorative colored textiles with enhanced properties such as easy-care, photo-catalytic, and antimicrobial capabilities. In simpler terms, nanoparticles are synthesized directly within the textile fibers, providing them with unique functionalities beyond just coloration. By integrating nanomaterials into the textile industry, this method introduces new possibilities for sustainable and efficient coloration and functionality enhancement. Unlike traditional dyeing processes, which often involve harmful chemicals and extensive water usage, this approach offers a more environmentally friendly alternative. Moreover, the resulting textiles are not only visually appealing but also durable and comfortable, meeting the increasing demand for high-quality fabrics in today's market. The incorporation of functional nanoparticles adds value to the textiles by imparting additional properties like easy-care maintenance, photo-catalytic activity (which can help break down pollutants), and antimicrobial properties (which can inhibit the growth of harmful microorganisms).

Dr. Haris Riaz
Lecturer

Natural fiber reinforced composite materials (Eco composites)

"Composite materials combine distinct substances for enhanced properties, offering design flexibility, strength, and low density compared to metal. Natural fiber-reinforced composites, especially those with eco-friendly fibers, offer biodegradable solutions to environmental challenges in polymer science"

Composites: Composite materials can be defined as "a combination of two or more materials that are chemically distinct, when combined they have improved properties over the individual materials". The advantages of composites over the conventional engineered materials are:

- Flexibility of design
- High specific strength
- Excellent fatigue endurance
- Excellent impact properties
- Low density as compared to metal and alloys

Composite material has at least two constituents: matrix and reinforcement. The matrix can be of three types, (1) Polymeric matrix: These matrixes include the thermoplastic matrix (polyethylene, polypropylene, sulfone, polyamide, etc.) and thermoset matrix (unsaturated polyester, epoxy, phenolics etc.) (2) Metallic matrix: aluminum alloys and titanium alloys. (3) Mineral matrix: carbon and silicon. Reinforcement used for composite materials can be particles, whiskers, or fibres. Natural fibre reinforced composites are those composites in which natural fibres are used as reinforcement.

Natural fibres: There are different types of Eco composite materials, but the Eco composite materials based on natural fibres are of most importance. Natural fibres are those fibres which are biodegradable in nature and they can be used for making the green composites. This can lead to lesser ecological and environmental issues. In the field of polymer science the natural fibers are attaining extraordinary interest due to many concerns about the environment and global health crisis of synthetic fibers [1]. The use of natural fiber in polymeric composite to replace the harmful synthetic material is helpful to combat the environmental issues [2]. Different natural fibers with polypropylene has been

used in the field of composites [3]. The most common classification of natural fibers is based on botanical type. There are three main classifications of natural fibers which are animal, vegetable and mineral. A classification of natural fibers is shown in Figure below, according to the source of origin**.** Based on this vegetable-based fiber classification, there are six basic types of natural fibers which are bast, leaf, seed, core, grass and other fibers. Jute, flax, hemp, ramie and kenaf fibers belong to bast fiber type while leaf fiber class contains banana, sisal, agave and pineapple. Seed fiber class contains coir, cotton, and kapok etc., while wheat, corn and rice are included in grass and seed fibers. Other fibers like wood and some roots are also the class of natural fibers. Natural fibers can be obtained from different origins like animals, plants and minerals [4].

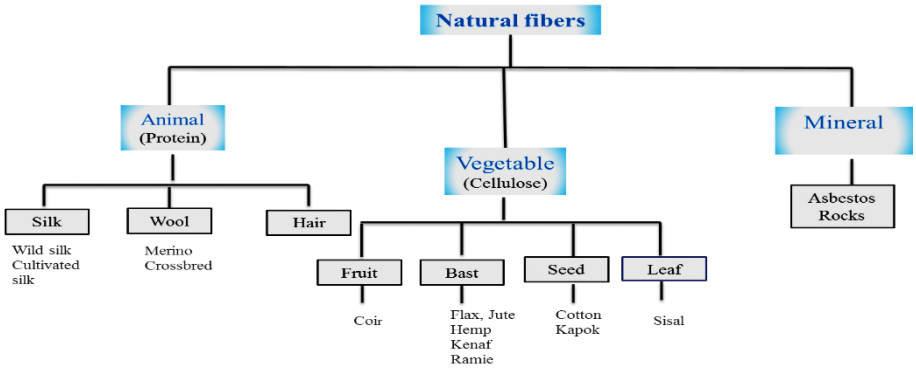


Figure: Classification of natural fibres

Natural fiber reinforced composites

There are different types of Eco composites materials, but the Eco composites materials based on natural fibers are more worth. No doubt polymeric biodegradable materials have been used but there are two main problems which inhabit their use for huge amounts and for diverse purpose, one is cost and second is their availability problem. Now a days the most suitable way for the Eco composite are the use of natural fiber as reinforcements [5]. Natural fibers are those fibers which are biodegradable in nature and they can be used for making the green composites. This is very much capable of lesser the current ecological and environmental issues [6]. Hasham et al. [7] worked on one of the major problem in natural fiber reinforced composites which is poor interface between hydrophilic reinforcement and hydrophobic matrix. Fiber treatment process is one of the processes to modify the fiber surface. There work particularly focuses the mercerization treatments on boosting of mechanical properties of natural fiber reinforced composites. Anderson et al. [8] also worked on the unidirectional flax fiber as reinforcement in composites. They developed a statistical model for those composites which have unidirectional flax reinforcements to judge the upper limit of tensile strength. It was investigated that the experimental strength of unidirectional flax fibers composites, made from roving or manually aligned fibers reaches the theoretical limit only at relatively lower fiber volume fraction.

Dr. Faiza Safdar

Lecturer

Protective Textiles: Functionalization Using Sol-Gel Technology

"Sol-gel technology offers efficient textile protection with benefits like reduced chemical use, simplified application, and multifunctionality. It enables the creation of textiles with antibacterial, UV-resistant, fireproof, and electromagnetic radiation shielding properties, meeting diverse safety needs"

Introduction: Within the group of technical textiles, protective textiles have extraordinary importance and getting the consideration of researchers owing to its expanding use in our daily lives. To shield people or the environment from different regular or industrial risks, shielding attire or protective textiles are endlessly utilized. There are some conceivable natural dangers, specifically extreme hot or cold conditions, rain, wind, UV and radioactive radiation, dust, microbes, static electricity, and so forth. Some noticeable industrial or human perils are fire, chemicals, sharp objects, high-speed projectiles, flash, and so on. When we are in the region of at least one of those, we need ideal security from every one of those dangers. In this manner, the requirement for protective textiles is there to defend us. Defensive materials are used in many fields, including military, defense, aeronautics, building and civil engineering, health care, and so on. For public use, the most important protective aspects are those to which people are exposed daily. These include microorganisms and UV rays. In addition to these, protection from fire and harmful high-frequency radiation emitted from electronic devices is becoming important as our lives are crowded with an abundance of electronic devices.

Method of applications: There are numerous methods for functionalization of textile materials to render protective characteristics such as layer-by-layer assembly, electroless plating, electro deposition, vacuum deposition and sol-gel technology. The main focus of this article will be on sol-gel technology.

Sol-gel technology: Sol-gel process has become the most emerging technique that imparts multifunctionality to textiles. This technique has advantages over other techniques such as

The innovative application of sol-gel technology enables significant advancements in textile functionalities, including reduced chemical consumption, in-situ synthesis of functional materials, low-temperature application, and simplified processing. This technology also facilitates the incorporation of inorganic materials, like titanium dioxide nanoparticles, for enhanced properties such as fire resistance and electromagnetic radiation shielding. These advancements align with the increasing demand for sustainable and multifunctional textiles. For instance, textiles treated with sol-gel technology can offer protection against bacteria, UV radiation, fire hazards, and electromagnetic radiation, addressing various health and safety concerns.

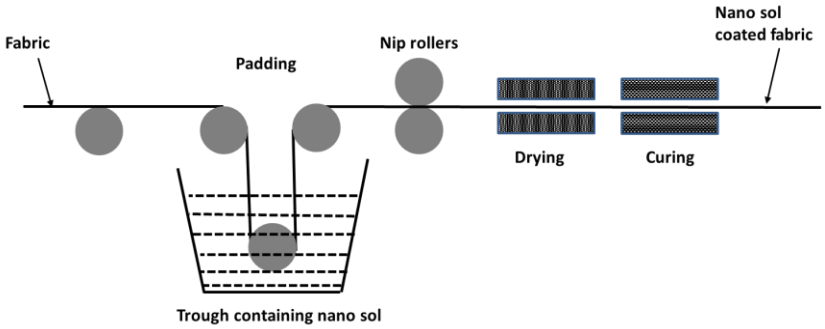


Figure 1. Application of nano-sol to textile material

In the realm of antimicrobial textiles, sol-gel technology enables the deposition of nano composites on fabric surfaces, enhancing their resistance to microbial growth. Similarly, sol-gel-treated textiles provide effective protection against UV radiation, mitigating the risks associated with prolonged exposure to sunlight. Moreover, the incorporation of inorganic UV blockers, such as titanium dioxide and zinc oxide nanoparticles, enhances the UV-blocking properties of textiles. Furthermore, sol-gel technology contributes to the development of flame-retardant textiles by integrating inorganic materials like nano clay, carbon nanotubes, and ceramics into textile matrices. These materials offer superior fire resistance while avoiding the environmental and health hazards associated with traditional flame-retardant chemicals.

Additionally, sol-gel-treated textiles exhibit electromagnetic radiation (EMR) shielding properties, crucial in today's technology-driven environment. By modifying textile surfaces with materials like graphene oxide, sol-gel technology enables effective EMR shielding, protecting individuals from the harmful effects of electromagnetic radiation emitted by electronic devices.

In conclusion, sol-gel technology offers a versatile and sustainable approach to enhancing textile functionalities. Its applications range from antimicrobial and UV-protective textiles to flame-retardant and EMR shielding textiles, addressing various safety and environmental concerns. As the textile industry continues to prioritize sustainability and innovation, sol-gel technology emerges as a promising solution to meet these evolving demands.

Our Events

The National Incubation Centre (NIC) had arranged a seminar about the startup for alumni and current students of UET Lahore, Faisalabad campus. Prof. Dr. Muhammad Mohsin (campus coordinator, UET Lahore, Faisalabad campus) applauded the efforts made by the team of NIC including Ms. Shahwar khan (program head), Ms. Mehwish sultan (incubation head), Ms. Rameen Anwar (communication head). NIC is funded by ignite national technology fund and ministry of it & telecom. Call for startup founders for 2nd cohort is open and last date is 21-1-2023.

Rescue Cadet Course RCC

The students of Textile and other campus departments participated in a training course (Rescue Cadet Course-RCC) that was conducted by Rescue 1122 Faisalabad. This 3-days training course was came out from 17-9-Jan-2013 at main admin block. Students were given theoretical and practical training. Students have successfully passed the online certified course test as well and soon they will be given the certificates. Prof. Dr. Muhammad Mohsin (Chairman Textile Department and Coordinator, Campus UET Lahore-Faisalabad Campus) appreciated the efforts and support of the Rescue-102 Faisalabad team for providing such useful opportunity to the students of the Faisalabad Campus.

"UET Faisalabad Campus Introduces Life Saver Course & Community Safety: First Batch Certified and Trained by Rescue-1122"

The "Life Saver Course & Community Safety" has been organized for students at UET Lahore, Faisalabad Campus, including textile. This cohort marks the inaugural group of certified and trained students from the UET Lahore Faisalabad campus. Certificates are granted upon completion of the three-day training workshops held on January 17th, 18th, and 19th, 2023, followed by successfully passing the online test administered by Rescue-1122.

"Industrial Visit for B.Sc. Textile Engineering Students (2020 Session) to Midas Safety"

Industrial visit was arranged for the students of B.Sc. Textile Engineering (session 2020) to Midas Safety.

"UET B.Sc. Textile Engineering: Warm Welcome and Guidance for Session 2022 at Welcome Party"

UET's B.Sc. Textile Engineering session 2021 arranged a welcome party for session 2022. Session 2022 was warmly welcomed, and they were offered assistance and guidance.

"UET Lahore, Faisalabad Campus Hosts Mega Sports Event: Officials Emphasize Importance of Sports"

The Sports Gala 2023 was organized on 20-2-2023 at Faisalabad Campus in collaboration with FWCCI. On this occasion Chairman of Standing Committee –Faisalabad Women Chamber of Commerce (FWCCI)

for Education, Campus Coordinator and Other dignitaries from FCCI, Faculty Members and students were present. The sports gala continued for a week from 20th – 26th February 2023. Campus students

including textile students actively participated in the sports gala. There was total of twelve different games played in the sports gala which include;

-Cricket - Football - Volleyball
-Badminton - Tug of war - Ludo
-Table Tennis - Card - Chess
-Race - Long Jump - E-gaming

141 different students' teams of the campus participated in the above games. Games were full of thrill, competitiveness and excitement. The grand finale of Sports Gala 2023 was held on 4/3/2023.

Female students also participated in various games. Different faculty teams also played various matches with each other.

The Mega Closing Ceremony of the Sports Gala 2023 was held on 2-3-2023. Mrs. Rakshanda Kausar, Chairperson Standing Committee FWCCI for Education, Mr. Hamid Mahmood, CEO of Digital Transformation, and Prof. Dr. Muhammad Mohsin, Campus Coordinator were the guest of honor of the ceremony. There were 20 trophies, 60 medals, 60 certificates, and 15 shields distributed among the respective winners and runners-up.

Campus Sports Committee (CSC) under the leadership of Prof. Dr. Sajjad Ahmad and Dr. Haji Ghulam Qutab and the core student team of CSC have done a good job in organizing a well-managed sports week.

"UET Lahore's Faisalabad Campus: Department of Textile Engineering Enhances Campus Main Gate Area with Vibrant Plant Donation"

The Department of Textile Engineering, situated at the UET Lahore's Faisalabad Campus, proudly engaged in a thoughtful gesture by generously donating an array of vibrant plants to enhance the aesthetic appeal of the university's main gate area.

"Seminar at UET Faisalabad Campus: Enhancing Faculty Training on Effective Implementation of Outcome-Based Education (OBE)"

A seminar was held at UET's Faisalabad Campus focusing on enhancing faculty training, specifically addressing the theme of "Effective Implementation of Outcome-Based Education (OBE)." The session trainer was Prof. Dr. Muhammad Mohsin, who serves as the Chairman of the Textile Department and the Campus Coordinator at UET Lahore-Faisalabad Campus.

"UET's Textile Engineering Department Innovates Waste Conversion Technologies, Gains National Recognition"

The groundbreaking research and development endeavors undertaken by the Textile Engineering Department at UET have garnered significant recognition in the national media. Celebrated for their innovative approach, the department has achieved remarkable success in pioneering a transformative process capable of converting diverse forms of waste—including textiles, paper, agricultural by-products, and plastics—into valuable resources such as carbon black, conductive inks, smart textiles, digital printing materials, tires, composites, and even usable oil for energy purposes. This commendable initiative is being spearheaded by esteemed project leaders, Prof. Dr. Muhammad Mohsin and Dr. Aamir Abbas Khan, at the Textile Recycling Research Lab within the department.


دنیا

بدھ، 21 محرم الحرام، 1445ھ، 9 اگست 2023ء

پاکستان کی پہلی مکمل ٹیکسٹائل ری سائیکلنگ لیب تیار

یو ای ٹی ٹیکسٹائل کا صنعتی فضلے، پلاسٹک کے دوبارہ استعمال کا کامیاب تجربہ

لاہور (ایجوکیشن رپورٹر) یونیورسٹی آف انجینئرنگ اینڈ ٹیکنالوجی لاہور کے ٹیکسٹائل انجینئرنگ ڈیپارٹمنٹ فیصل آباد نے صنعتی فضلے، پلاسٹک کے دوبارہ استعمال کا کامیاب تجربہ کیا ہے۔ ٹیکسٹائل انجینئرنگ ڈیپارٹمنٹ میں پاکستان کی پہلی مکمل ٹیکسٹائل ری سائیکلنگ لیب تیار کر لی گئی ہے۔ جس میں صنعتی، زرعی اور پلاسٹک فضلے سے مہنگی صنعتی مصنوعات سستے داموں بنائی جاسکیں گی۔ تفصیلات کے مطابق یو آئی ٹی لاہور کے ٹیکسٹائل انجینئرنگ ڈیپارٹمنٹ کے فیصل آباد کیمپس نے استعمال شدہ کپڑوں، ٹیکسٹائل انڈسٹری کا فضلہ، چاول کا بھوسہ، استعمال شدہ ٹائر، کاغذ، پلاسٹک کو قابل قدر پراڈکٹس کاربن بلیک، کمپوزٹس، سمارٹ ٹیکسٹائل، کنڈیکٹو ایک اور ذرائع توانائی کو بذریعہ ری سائیکلنگ منتقل کرنے میں کامیاب ہوا ہے۔ اس پراجیکٹ کے لیے ڈیپارٹمنٹ ٹیم نے پروفیسر ڈاکٹر محمد محسن اور ڈاکٹر عامر عباس خان کی قیادت میں کام کیا۔

"UET Lahore, Faisalabad Campus Engages at Career Expo: Discussions with USA Diplomats and Industrialists"

UET Lahore, Faisalabad Campus participated in career expo by invitation. Mr. Andrew Schroff (USA Deputy Chief of Mission), and Mr. William K. Makamole (USA Council General Lahore), FCCI president and their other officials, CEO ELO & Image Garments and other industrialists & dignitaries visited the stall & had fruitful discussions with Prof. Dr. Muhammad Mohsin (Campus Coordinator & Chairman Department of Textile Engineering, UET Lahore-Faisalabad Campus).

"UET Lahore-Faisalabad Campus, WWF, and Coca-Cola Partner to Plant 5,500 Trees"

UET Lahore-Faisalabad Campus, in collaboration with WWF and Coca-Cola, planted 5,500 trees. Campus horticulture team, students, Coca-Cola and WWF staff actively participated in the drive. Continuous efforts demonstrate a strong commitment to green initiative, including playgrounds, while recognizing the diligent work of horticulturists and staff.

"UET Lahore-Faisalabad Campus Celebrates World Environment Day with Walk, Seminar, and Plantation Drive in Partnership with Coca-Cola and WWF-Pakistan"

UET Lahore-Faisalabad Campus marked "World Environment Day" with a series of events including a walk, seminar, plantation drive, and clean-up, held in collaboration with Coca-Cola Industries and WWF-Pakistan.

Prof. Dr. Muhammad Mohsin, Mr. Waseem Ashraf from WWF Pakistan, and Ms. Zunaira from CCI addressed the participants, highlighting their organizations' commitments. Over 30 Coca-Cola officials and 4 WWF representatives joined in the activities.

"UET Lahore-Faisalabad Campus Partners with Ministry of IT for Freelancing Skills Seminar"

UET Lahore, Faisalabad Campus, in collaboration with the Ministry of Information Technology and Telecommunication, organized a seminar to train the youth of the country in freelancing skills. The goal is to enable students of the campus to earn a sustainable income for themselves.

"Welcome to Session 2023 Freshers by UET's Textile Engineering Department: Wishing Success for the Journey Ahead!"

The Department of Textile Engineering extended a warm welcome to all the freshers of session 2023.

The event was filled with excitement and anticipation as new students and faculty members gathered to learn about the department and its programs. We wish all the students of session 2023 best of luck and praying for a successful journey ahead.

"Textile Alumni Reunion 2023 at UET Lahore's Faisalabad Campus: Bridging Industry Insights Between Graduates and Present Students"

The "Textile Alumni Reunion 2023" convened at UET Lahore's Faisalabad Campus, uniting former graduates to impart industry insights to present students. Prof. Dr. Muhammad Mohsin and faculty members conveyed appreciation to alumni for joining and commended current students for event orchestration. Alumni, hailing from diverse textile sectors such as Ibrahim Fibers Ltd., Sapphire Textile Mills, Masood Textile Mills, and more, enriched the occasion with their professional experiences.

Masood Textile Mills Corporate HR Visit to the Department:

Masood Textile Mills team toured the department's lab facilities, commending ongoing department research. Mr. Ali Yaqoob from Corporate HR & Communications led an engaging "Ace the Interview" session for students. It was an interactive session with sharing of valuable knowledge on the topic.

"Textile Engineering 2019 Session Farewell: Wishing Success and Bright Future"

A farewell gathering was organized to bid farewell to the Textile Engineering students, wishing them all the best for their future endeavors, while also congratulating those who have already secured employment opportunities. Credits for the arrangements go to the Textile session of 2020.

"Sapphire Finishing Limited Hosts Recruitment Drive for Textile Engineering Graduates (2019 Session)"

Sapphire Finishing Limited hosted a recruitment drive specifically targeting B.Sc. Textile Engineering graduates from the session of 2019 at the Department of Textile Engineering, UET Lahore's Faisalabad campus. This event aimed to provide a platform for final year students to explore potential career opportunities within the textile industry, particularly at Sapphire Finishing Limited.

"UET Lahore's Faisalabad Campus Hosts 6th All Pakistan Literature Competition and Mushaira: A Celebration of Literary Talent"

The Literary Club at UET Lahore's Faisalabad Campus successfully hosted the 6th All Pakistan Literature Competition and Mushaira on April 27, 2023. With participation from 16 universities, the event attracted over 140 entries across various modules, including Qirat, Hamad e Bari Ta'ala, Naat e Rasool (SAW), Urdu Nazm, Urdu Ghazal, 100 Lafzon Ki Kahani, and English Essay.

"B.Sc. Textile Engineering Session 2022 Welcomes Session 2023 with Enthusiasm and Well-Wishes for Success"

The B.Sc. Textile Engineering session of 2022 welcomed the incoming session of 2023 with enthusiasm, wishing them success ahead.

"UET Textile Engineering Projects Shine at 2nd All Punjab Universities Innovation Expo-2023, Earn Praise for Innovation"

Two projects from UET's Department of Textile Engineering, overseen by Dr. Aamer Abbas Khan and Prof. Dr. M Mohsin, showcased at the 2nd All Punjab Universities Innovation Expo-2023. The stall garnered significant attention from industry and academia, receiving high praise for the department's innovative technologies.

"BSc Textile Engineering Program at Textile Department, UET Lahore-Faisalabad Campus, Attains Three Year PEC Accreditation Level-2 (Washington Accord, OBE Based) for Sessions 2019, 2020, 2021"

Textile Department's BSc Textile Engineering Program Receives PEC Accreditation Level-2 (Washington Accord, OBE Based) for three years (Sessions 2019, 2020, 2021).

"Seminar on 'Challenges & Opportunities for Young Textile Engineers' Held at UET Lahore-Faisalabad Campus"

A Seminar on the topic of "Challenges & Opportunities for Young Textile Engineers" was arranged at Department of Textile

Engineering UET Lahore-Faisalabad Campus.

Engr. Junaid Babar (Sr. Asst. Vice President, Crescent Textile Mills) was the guest speaker. He had an interactive session with the students of textile engineering & enlightened the students with his thoughts and experience. He also visited the lab facilities of the department and appreciated the progress on the various research projects.

"Textile Engineering Department Projects Recognized and Awarded by PEC, Supervised by Dr. Aamir Abbas Khan and Prof. Dr. Muhammad Mohsin. Receiving the Certificate of Appreciation at PEC Ceremony."

Three projects from textile engineering department have been selected and awarded by PEC. These projects were supervised by Dr. Aamir Abbas Khan and Prof. Dr. Muhammad Mohsin.

In the ceremony organized by PEC, Prof. Dr. Muhammad Mohsin (Campus Coordinator, UET Lahore, Faisalabad Campus & Chairman Textile) received the certificate of appreciation from Engr. Najeeb Haroon (Chairman, PEC) along with students of these projects.

"Top CGPA Students of BSc and MSc Textile Engineering Honored with Laptops at UET Lahore, Faisalabad Campus Ceremony. Prof. Dr. Muhammad Mohsin and Distinguished Guests Handed Over the Laptops"

11 Students of "BSc Textile Engineering" and "MSc Textile & Materials Engineering" having the highest CGPA received their laptops in a ceremony held at the admin conference room of UET Lahore, Faisalabad Campus.

Prof. Dr. Muhammad Mohsin,(Campus Coordinator & Chairman Textile Department), Mr. Zargham Nusrat (Controller of Examination, UET Lahore), Mr. Gohar Ali Khan (HEC representative) & Mr. Majid (Examination Department, UET Lahore) have distributed the laptops among students.

"B.Sc. Textile Engineering Students Visit Gohar Textile Mills'

B.Sc. Textile Engineering visited Gohar Textile Mills.

"The Bi-Annual Plantation Drive at the Department: Textile Class of 2022 Emerges Victorious in Efforts related to Greenery"

Amidst the verdant backdrop of sustainability, the Department of Textile Engineering at UET Lahore, Faisalabad Campus, witnessed a spirited competition in the bi-annual Plantation Drive. Battling for the honor of nurturing our planet, sessions from 2020 to 2023 showcased their green prowess.

The Textile Class of 2022's triumph, recognized by Prof. Dr. Muhammad Mohsin, underscores their dedication to ecological conservation, setting a commendable example for the future. At the end plantation drive was carried out.

"Embark on an Enlightening Journey to Masood Textile Mill: Witness the Heartbeat of the Textile Industry"

Prepare to witness the heartbeat of the textile industry as the textile department students embark on an enlightening journey to Masood Textile Mill. This industrial visit promises students an immersive experience into the intricate workings of one of the region's premier textile facilities. From the whirring of machinery to the meticulous craftsmanship of skilled artisans, students witness firsthand the synergy between innovation and tradition that drives this industrial titan. Guided by experts in the field, participants gain invaluable insights into every stage of textile production, from raw material processing to the final product. Students navigate through the sprawling facilities of Masood Textile Mill.

"UET Lahore (Faisalabad Campus) Collaborates with Little Voices Rehabilitation Center to Provide Services to Students and Staff: A Day of Support and Gratitude"

It was held on 12-10-2023 at UET Lahore (Faisalabad Campus) in collaboration with Little Voices Rehabilitation Center.

The team of 11 experts, including Psychologists, Physiotherapists, Speech & Language Pathologists, and Dietitians, provided services to over 100 campus students and staff. Extended one-on-one sessions were offered from 12 to 5 pm, with gratitude extended to the Little Voices Rehabilitation Centre for their assistance to campus students. The campus and textile department express sincere appreciation for this invaluable service.

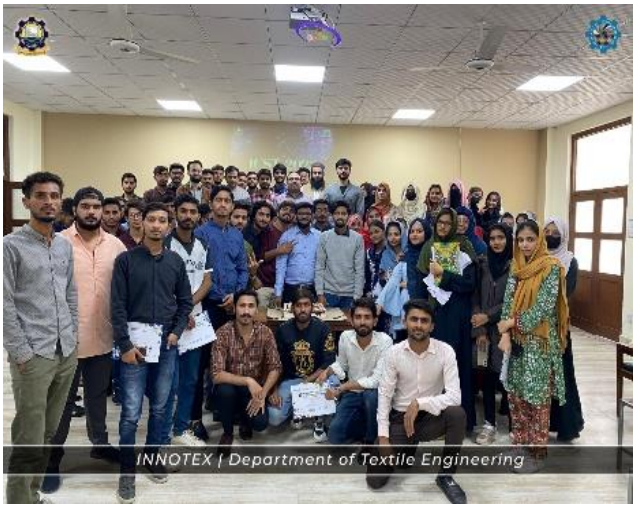
"ICST-2023 Post Conference Celebration"

Thanks to the grace of Allah Almighty, the Department of Textile Engineering at UET Lahore's Faisalabad Campus orchestrated two major events focusing on textile sustainability in 2023:

1. International Conference on Sustainable Textile

2. All Pakistan Textile Sustainability Student Competition

Certificates were distributed to event organizers, and sincere gratitude is extended to faculty, students, and staff involved. These successful events were made possible by the hard work, dedication, and commitment of the organizers.



"Engr. Saiful Islam from Ahmad Jamal Textile Mills Engages Students at UET Lahore-Faisalabad Campus: Lecture on Project Management and Engineer's Role in Textile Industry''

Engr. Saiful Islam, GM-Ahmad Jamal gave a lecture to the students of textile engineering on the topic of "Project management & role of engineers in textile industry"

He also visited the department's lab and R&D facilities. He has shown keen interest in certain R&D projects of the department and mutual collaboration opportunities were discussed.

"Alumnus Hafiz Fahad Saeed from Ibrahim Fibers Limited Delivers Technical Lecture on Innovations in Textile Ring Spinning Technologies at UET Lahore-Faisalabad Campus"

Hafiz Fahad Saeed (AM Production, Ibrahim Fibers Limited) visited department of textile engineering, UET Lahore-Faisalabad campus.

He gave a lecture to the students of textile engineering on the topic of "Innovations and future trends in Textile Ring Spinning Technologies.

"Industrial Expert Lecture: Troubleshooting & Decision Making in Manufacturing Plants by Dr. Nusrullah Akhtar, DGM at Interloop Pvt. Ltd."

Dr. Nusrullah Akhtar (DGM, Fabric Dyeing & Finishing | Apparel, Interloop Pvt. Ltd.) visited department of textile engineering, UET Lahore-Faisalabad campus.

He gave a lecture to the students of textile engineering on the topic of "Troubleshooting, Analysis, and Decision Making in Textile Manufacturing Plants".

"Industrial Visit: Exploring Textile Manufacturing at Nishat Mills Ltd. Units 27, 54 & 55"

An industrial visit was organized for B.Sc. Textile Engineering students to Nishat Mills Ltd., Units 27, 54, and 55, offering a firsthand experience of textile manufacturing processes. The visit provided invaluable insights into the operations of one of the leading players in the textile industry. It offered a unique

opportunity for students to observe real-world applications of their academic knowledge and gain a deeper understanding of textile engineering principles. The excursion, held on February 28, 2023, was an enriching experience for the students, reinforcing their understanding of the complexities and dynamics of the textile sector.

"PHEC Delegation Visits Textile Engineering Department to Review Progress of the Funded Project of Recycling into Smart Textile''

A delegation from Punjab Higher Education Commission (PHEC) visited department of textile engineering for project final progress update. The project is related to "waste recycling into smart textile".

They have appreciated the progress on the textile sustainability and recycling projects. They have visited textile lab facilities and applauded the ongoing research projects of textile department.

"Ahmad Jamal Generous Support: Transforming the Seminar Room at the Department of Textile Engineering''

The Seminar Room in the Department of Textile Engineering underwent a remarkable transformation through collaboration with Ahmad Jamal Textiles. The renovation focused on intricate details, including carefully selected tiles and a thoughtfully designed color scheme to enhance both aesthetics and functionality. With the installation of a fall ceiling, lighting, stage and tile work, the aesthetic of the seminar room was significantly improved. The addition of an expertly crafted stage serves as a focal point for presentations and discussions. Ahmad Jamal Textile generous contribution in renovating department seminar is highly appreciated and it clearly reflect the strong commitment of Ahmad Jamal for the community and university support.

"Addition of Textile Nano Materials Lab under the HEC-NRPU project"

At the textile department, Textile nano materials lab was added. This lab is funded under HEC-NRPU project of Dr. Usama. It is the 16th lab of the department, and more than 150 equipment are installed in these labs. More than 50 equipment at the department are from external funding or industrial collaboration. More equipment are on the way for this lab. Now all the PhD faculty of the department have won the funded projects with the highest number of 12 projects by Prof. Dr. Muhammad Mohsin.

First time ECAT at UET FAISALABAD While Textile Department was Among One of the Centers

UET Lahore, Faisalabad Campus conducted the combined entry test of UET in 2023 for the first time. UET combined entry test is conducted at selected locations and institutes in Punjab. However, it was the first time that it was conducted on campus, and it was a great success. It was a computer-based entry test. There were three computer-based test centers.

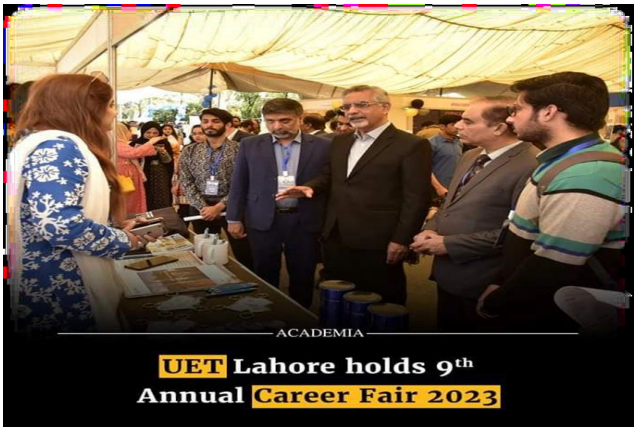
Two test centers in the "Department of Mechatronics & Control Engineering". While one test center was in the "Department of Textile Engineering".

There were two mock test days (where 500 students appeared from different centers) and four actual test days where 47 sessions of the test were conducted. Help desk, department visits, and other support was provided to the entry test candidates. The

efforts of all the teams of UET Lahore FSD Campus including the technical team, admin team, transport team, security team, and PD team are much appreciated.

UET Annual Career Fair 2023

The main campus of UET (Lahore) conducted the 9th annual career fair 2023 on 21-2-2023. It is one of the biggest career expos in a Pakistani university where around 111 Industries with 175 stalls participated in the event. Different organizations conducted the interviews for recruitment, and around 20 Companies conducted recruitment tests and made job offers on the spot to the students of UET. The rest gave orientation sessions for students. The highest number of the Faisalabad Campus students participated in the career fair at the main campus in 2023. Two campus buses were provided for the transportation of the campus students.



MOU with Masood Textile Mills

The MOU between Masood Textile Mills (MTM) and UET has been signed to further strengthen the "Industry-Academia Engagement" on 19th April 2023. MTM is one of the leading textile export industries in the country. MTM are pioneers in creating, developing, and manufacturing knitted apparel products right from basic to highly fashioned garments thus responding to emerging trends in the industry. It excels in crafting a diverse range of garments, from essential basics to intricately fashioned pieces, effectively staying attuned to the evolving trends in the industry. Mr. Ali Yaqoob (Head, Corporate HR & Communications, MTM) and Prof. Dr. Muhammad Mohsin (Campus Coordinator UET Lahore-Faisalabad Campus) signed an MOU for mutual cooperation between the two organizations. MTM will conduct a recruitment drive at the campus, joint R&D projects, training, and provide internship opportunities to the campus students.

"Transcending Leadership: INNOTEX Society Transition Ceremony at UET's Textile Engineering Department"

Amidst a spirit of continuity and progress, the INNOTEX Society of the Department of Textile Engineering witnessed a graceful transition as Mr. Ali Raza, the former

president from the 2019 session, ceremoniously handed over the reins to Mr. Muhammad Faisal Rehman from the 2020 session. In a touching gesture, Mr. Raza presented the society badge to Mr. Rehman, while being honored with a shield for his exemplary leadership throughout the previous year. Professor Dr. Muhammad Mohsin lauded Mr. Raza's contributions and offered words of encouragement for Mr. Rehman's tenure, emphasizing the importance of continued dedication and hard work.

The event was marked by reflections from the outgoing president, highlighting the society's journey and aspirations for the future.

The event also announced the society's new hierarchy, with Husnain Islam as Senior Vice President, Tahira Naeem as Female Vice President, Rao Talal Riaz as Vice President, and Rabail as General Secretary, reflecting the commitment to effective governance. Other competent individuals were appointed as department/module heads, showcasing the society's dedication to excellence and inclusivity. Additionally, outgoing president Mr. Ali Raza shared insightful reflections, inspiring members to uphold the legacy of excellence and pursue innovative initiatives.

A seminar on OBE was arranged for the faculty of UET Lahore, Faisalabad campus.

Prof. Dr. Muhammad Mohsin, Chairman Textile Engineering & Campus Coordinator, PEC-OBE Program Evaluator, led a training on "Integration of CLOs, PLOs, and PEOs: Enhancing Educational Outcomes".

The seminar, hosted by the UET Lahore-Faisalabad Campus, aimed to explore strategies for closing the loop between Course Learning Outcomes (CLOs), Program Learning Outcomes (PLOs), and

Program Educational Objectives (PEOs). Key attendees included faculty members from the campus.

Three PhD Scholars Enrolled in Textile Engineering Department got their synopsis approval from ASRB

Congratulations to following three PhD Scholars of Department of Textile Engineering for successfully defending their PhD synopsis in the board (Advance Studies & Research Board) of UET Lahore on 14-7-2023.

1. Ms. Komal Iftikhar
2. Mr. Awais Rasool
3. Mr. Zaid Mustafa

Since last two years number of students have graduated from the department MS program. While in last two years 7 PhD scholars have successfully completed their course work and defended the PhD proposals. Department faculty has published more than 200 journal papers, 50 conference papers, 12 patents, 6 international book/chapters, 80 industrial & professional trainings in last five years.

MOU with Archroma

UET LAHORE and Archroma Pakistan Ltd extend the agreement of cooperation on 8th November 2023 at a momentous occasion at the 6th International Conference on Sustainable Textile 2023. Prof. Dr. Muhammad Mohsin, Campus Coordinator, UET Lahore Faisalabad campus, and Mr. Mujtaba Rahim, the CEO of Archroma Pakistan Ltd., came together to extend their Agreement of Mutual Cooperation for another five years.

This significant partnership was sealed in the presence of Mr. Paul Cowell, Archroma-Swiserland and Prof. Dr. Waqar Mahmood (Director KICS and CERAD, UET Lahore) and Dr. Khurram Tariq (President FCCI) and Mr. Assad (PRGMEA). The roots of this collaboration trace back to 2018, when the initial Memorandum of Understanding (MoU) was signed at the same place. Now, this dynamic duo is ready to embark on another exciting chapter of cooperation. Both parties are committed to Textile Sustainability and motivating academia and industry to take steps in this direction, fostering innovation through training, collaborative Research and Development (R&D) projects. Inshallah, this renewed partnership between UET Lahore and Archroma Pakistan Ltd promises to be a beacon of innovation, education, and progress for the years to come.

MOU with FWCCI

The MOU ceremony was held on 2nd March 2023 for the MOU signing between Faisalabad Women Chamber of Commerce

and Industries (FWCCI) and UET Lahore, Faisalabad Campus, held at Department of Textile Engineering. FWCCI offers a range of services encompassing education, training, networking, and advocacy. FWCCI serves as a platform for women entrepreneurs to connect, collaborate, and share insights, fostering a supportive and empowering community.

As per the MOU, FWCCI will provide support for the campus students related to internships, jobs, placement at chamber Incubation center, and Industrial projects. It will bring more industrial collaboration for all the campus departments and students. The MOU was signed by Mrs. Rakshanda Kausar, Chairperson Standing Committee FWCCI for Education, and Prof. Dr. Muhammad Mohsin (Campus Coordinator). Mr. Hamid Mahmood, CEO of Digital Transformation was also present on this occasion.

Innovative Research of Recycling of Waste (textile, paper, agro, plastic) into Carbon Black, Conductive Inks, Composites, & Bio-oil

UET's Textile Engineering Department has successfully developed innovative process which convert various waste (Textile, Paper, Agriculture & Plastic) into carbon black, conductive inks, smart textile, digital printing, tyre, composites and oil (as energy source). Research was carried out at the Textile Recycling Research lab of the textile engineering department, a leading textile recycling lab of the country. Prof. Dr. Muhammad Mohsin & Dr. Aamir Abbas Khan were the lead of the project.

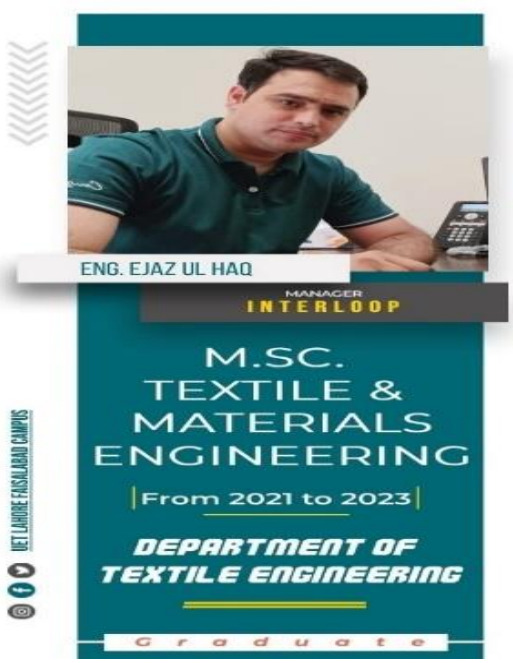
"Congratulations to the exceptional students of the Textile Engineering Department who secured coveted paid internships in esteemed organizations in 2023."

"Congratulations to the exceptional students of the Textile Engineering Department who secured coveted paid internships in esteemed organizations in 2023. It is to clarify that all the department students do the internships and majority of them complete two internships, while the below table include only the paid internships students list of 2020 session. These talented individuals have been selected by Sapphire Finishing Mills Limited, Ibrahim Fibers Limited, Awan Sports Industries Pvt. Ltd., Softwood Pvt. Ltd., Colony Textile Lahore, TTI Testing Lab Lahore, MG Apparel Multan, Sapphire Textile Mills Ltd (Unit#07), and Akhuwat Internship Program 2023. Their achievement highlights their dedication and promise in the field of textiles.

Sr. No.	Student Name	Industry Name
1	Muhammad Faisal Rehman	Sapphire Finishing Mills Limited
2	Zain Ali	Sapphire Finishing Mills Limited
3	Ume-Habiba	Sapphire Finishing Mills Limited
4	Awais Aslam	Ibrahim Fibers Limited
5	Tahira Naeem	Awan Sports Industries Pvt. Ltd.
6	Bilal Ikhlaq	Softwood Pvt. Ltd.
7	Muhammad Abdullah	Colony Textile Lahore
8	Muhammad Waqas	Colony Textile Lahore
9	Rana Muhammad Umair Islam	Colony Textile Lahore
10	Wania Nadeem	Ibrahim Fibers Limited
11	Muhammad Mustafa Qureshi	TTI Testing Lab Lahore
12	Mashal Hussain	MG Apparel Multan
13	Muhammad Waqar Younas	Sapphire Textile Mills Ltd (Unit#07)
14	Muhammad Talal Riaz	Sapphire Textile Mills Ltd (Unit#07)
15	Husnain Islam	Sapphire Textile Mills Ltd (Unit#07)
16	Shayam Nawal	Sapphire Textile Mills Ltd (Unit#07)
17	Muhammad Faisal Rehman	Akhuwat Internship Program 2023
18	Rana Muhammad Umair Islam	Ibrahim Fiber Limited
19	Areeb-u-Nisa	Sapphire Finishing Mills Lahore

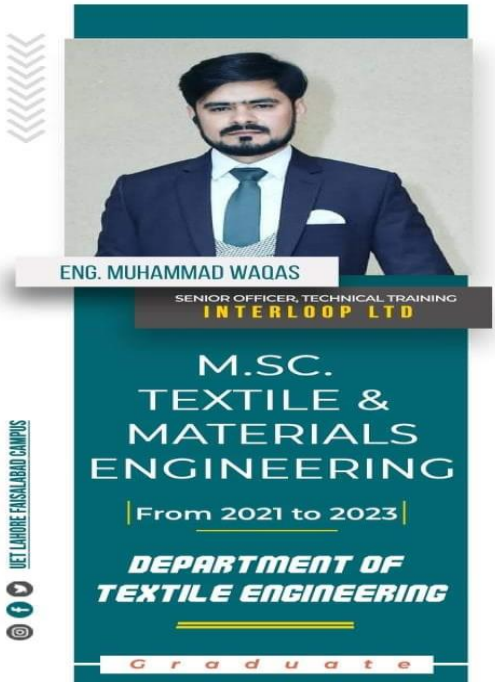
"Recent MS Graduates Provide Feedback and Advice on Department's Program" June 26, 2023

Embark on a journey of personal and professional growth as I share my experience transitioning from a background in Mechanical Engineering to pursuing an MS at UET Lahore-Faisalabad Campus in Textile Engineering. Discover how this program has expanded my career opportunities and provided invaluable insights into the industry. Join me in expressing gratitude to the department for their unwavering support in facilitating my professional development and success."



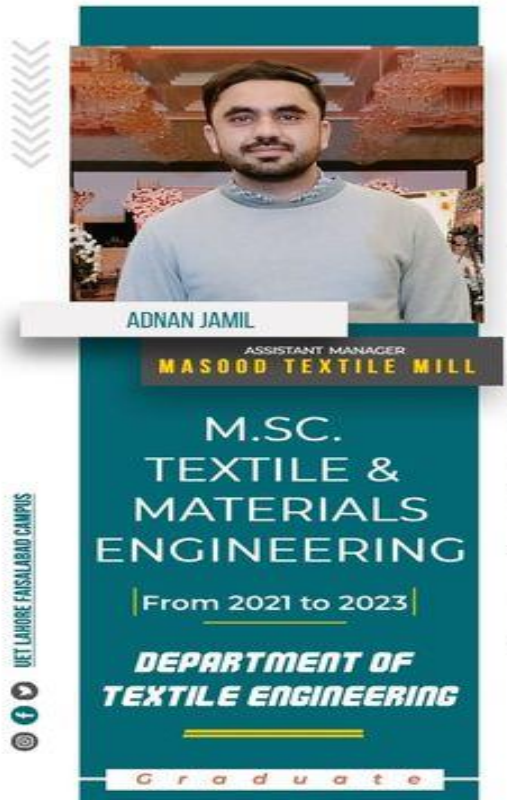
My Views on MSc Program

I have the BS background of Mechanical and secured my admission at Department of Textile Engineering. I prefer this degree over others as it is equally applicable in textile and Materials and UET is one of the highest ranked University in Engineering field. I have completed my MS in two years while doing the job at Interloop. It's an evening MSc program and very much suitable for the professionals working in the industry. Although my BS background was not from textile but this program has broaden my scope. I have gained significant knowledge of textile & materials and an excellent exposure due to this degree. Therefore, I endorsed this program over others.



My Views on MSc Program

It was my previleage to secure the admission in MSc Textile and Materials Engineering at Department of Textile Engineering, UET Lahore Faisalabad. It was a great learning experience for me. I am extremely satisfied with the diversity of subjects and depth of knowledge given during the course of this program. Knowledge and R&D exposure gained through this program is extremely useful for my current job. This unique degree covering two major domains of Textile as well as Materials is highly valuable for professionals due to its diverse scope, popularity and adoptability at the industry and academia. I definitely recommend this program.



My Views on MSc Program

Being the graduate of UET-Textile department and already doing job at one of the top textile mills (MTM) of Pakistan. MSc Textile and Materials Engineering from UET was my first preference for postgraduation. It was a great learning experience while doing MSc at the department. It was also my good luck to see continuous improvement at the department facilities, equipment and faculty. Teaching and research at the department is setting very good standards. I have easily managed the MSc along with textile industry job due to evening program. Support and guidance from the department faculty is very much appreciated. My industry (MTM) and many other top industeries highly ranked the UET textile degree. Based on my personal experience, I strongly recommend MSc Textile and Materials Engineering at UET for textile graduates working in the industry.

DEPARTMENT OF TEXTILE ENGINEERING
UNIVERSITY OF ENGINEERING & TECHNOLOGY LAHORE
(FAISALABAD CAMPUS)

GRADUATE OF "M.Sc. TEXTILE & MATERIAL ENGINEERING"

Komal Iftikhar

My Views on MS Program

It was wonderful experience of doing MSc Textile and Materials Engineering at Department of Textile Engineering. I was given paid research associate position and operatunity to support in lab classes. I am happy to finish my MS in less than two years with two impact factor papers while one more is submitted and 3 are under process. Department facilities and faculty expertise, support and motivation are real plus. Being part of the state of the art department "Textile Recycling Research Lab" has opened new horizon for me.

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Talha Hanif

My Views on MS Program

I have the BS background of Materials and secured my admission at department of textile engineering. I have the MS admission offers from other departments/universities but I prefer this degree over others as it is equally applicable in textile and materials. I have completed my MS in less than two years with course work. Although my BS background was not from textile but during my second year of MS I was offered job in reputed textile industry of the country due to my enrollment in UET MSc Textile and Materials Engineering Programs. I have gained significant knowledge of textile and materials and a good job due to this degree. Therefore, I endorsed this program over others.

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GRADUATE OF
"M.Sc. TEXTILE & MATERIAL ENGINEERING"

Junaid Khan

My Views on MS Program

Getting admission in MSc Textile and Materials Engineering program of UET was my desire and I feel blessed to achieve that. I was never a topper of my class but exhibiy good management skills. I have completed my MS degree with coursework in less than two years while doing job in a textile mill. I believe that it is very useful degree and can easily be managed along with textile industry job. Support and guidance from the department faculty is very much appreciated. Due to this degree I have already switched to a better job in the textile industry and hopefully this degree will help me more in future. Based on my personal experience, I strongly recommend MSc Textile and Materials Engineering at UET for textile graduates working in the industry.

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(FAISALABAD CAMPUS)

GRADUATE OF
"M.Sc. TEXTILE & MATERIAL ENGINEERING"

Muhammad Awais Rasool

My Views on MS Program

I can not ask for better facilities and degree covering diverse areas of textile and materials. Availability of faculty, guidence and lab facilities are really up to the mark. My selection in one funded project at department as paid research associate due to my MS enrollment was another plus for me. I am still working on the paid position even after completion of my MS degree. I was also encouraged to support in undergraduate lab classes and it was a unique experience for me. I am really humbled to complete my MSc Textile and Materials Engineering degree in less than two years with one impact factor paper submission and more in the pipeline. I recommend it as one of the best MSc engineering degree in Pakistan as it covered very attractive Textile and Materials field in one degree with huge scope.

DEPARTMENT OF TEXTILE ENINGERING

Research work Carried out by TEXTILE ENIGNEERING Department

Department of Textile Engineering is actively involved in research related to textile sustainability in collaboration with top textile industry of the country. Faculty of Textile Engineering Department has published over 200 research papers, six books/book chapters, five patents in last five years. Department faculty has also won number of research projects from various funding agencies including HEC, PSF, PHEC, and textile industry. Certain key research projects carried out by the department include. In year 2023, faculty of department of textile engineering has published numerous research papers in international impact fact journals.

SCAN ME

1. Development of energy and water efficient textile bleach recycling system
2. Development of sustainable fiber, fabric, and their coloration from ago waste (Banana, okra etc.)
3. Development of digital printing inks and optimization of digital printing process.
4. Recycling of textile and tyre industrial wastes for the development of indigenous carbon black
5. Water and energy efficient foam processing Dyeing & Finishing
6. Productivity improvement of the textile industry
7. Garment industry machine line efficiency
8. Recycling of textile into value added
8. Sustainable process (water, energy & chemical efficient) development
9. Recycling of textile wastes into value added product.
10. Sustainable natural dyeing without toxic mordant
11. Textile process optimization for organic cotton and better cotton
12. Development of water less dyeing and finishing process
13. Eco friendly, sustainable & halogen free fire retardants for textile
14. Sustainable and durable oil & water repellent for textile
15. 100% bio based anti-viral and anti-microbial textile.
16. Eco friendly bio-Mosquito repellent finishing for textile
17. Development of novel dyeing process
18. Efficient synthesis of fluorescent materials
19. Nano bubble dyeing and finishing machine and process development.
20. Key Focus of the Research at the Department
21. Innovative & sustainable yarn development
22. Innovative & sustainable fabric

TEXTILE SUSTAINABILITY WORKING GROUP

"Textile sustainability research group" is formed by department of textile engineering (UET Lahore, Faisalabad campus) and supported by other key stakeholders as "founding members" including TTI, BCI, cedar, interloop, kicks, WWF and Archroma Pakistan. The group was announced during the 4th international conference on sustainable textile 2021. This working group will conduct training and seminars, regular sharing of knowledge and best practices, mill assessment related to energy conservation and textile sustainability and joint R&D projects.

Textile sustainability is a global challenge, and it needs coherent efforts from various stakeholders like universities, mills, textile chemical companies, testing companies, brands, associations, and NGOs to collaborate in order to achieve the target of textile sustainability in textile supply chain. These efforts are needed not only to attract more international brands, more textile orders, more jobs but for the less usage of resources like good quality water, less wastewater discharge, less air emissions and environment protection of the country. Textile is the backbone of Pakistan economy but situation of textile sustainability in Pakistan needs more coherent efforts. Therefore, "textile sustainability working group" at department of textile engineering, UET Lahore, Faisalabad campus is established to take more practical and coherent steps towards textile sustainability with the support of the collaborators and relevant stakeholders.

The website of textile sustainability working group is officially launched and details can be found at;

https://conferences.uet.edu.pk/textile/icst/2021/textile - sustainability-working-group/

Founding Members

The founding members of textile sustainability working group are: department of textile engineering UET Lahore BCI (better cotton initiative) TTI testing laboratories. WWF Cerda Inter-loop kicks Archroma Pakistan.

General Members

General members more than 220 members since 19th May 2021 have already registered for textile sustainability working group. More and more textile industry and other stake holders are joining this group.

Projects

Projects there are more than 30 key projects in the textile sustainability research group related to textile sustainability. You can find the projects in given link.

https://conferences.uet.edu.pk/textile/ICST/2021/projects/developed technologies

Trainings

Trainings textile sustainability working group regularly organizes various trainings on textile supply chain, ZDHC, textile sustainability and textile industry. You can find the list of trainings under given-link. Https://conferences.uet.edu.pk/textile/ICST/2021/trainings

Scientist/resource

Scientist Resource Person textile sustainability working group have active research group in which more than 40 scientist resource persons are working on textile sustainability.

Textile Sustainability Research Group

Textile sustainability research group active research is being carried out in the textile sustainability research group on various areas of sustainable textile which include new fiber development, new fabric development, new garment development, new textile specialty chemical development, new machine development, new process development, value addition, it based textile solutions, energy conservations, recycling of textile, indigenous bio based.

Developed Technologies

There are various developed technologies available for pilot trials and commercialization to the textile industry related to textile supply chain, energy, and it.
Https://conferences.uet.edu.pk/textile/icst/2021/developed-technologies/

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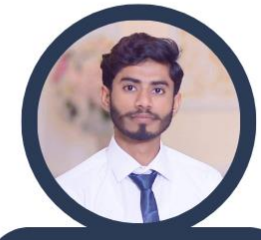

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U.E.T TEXTILE MAGAZINE

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