

Department of Weaving

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Annual Progress Report

Dr. Yasir Nawab, Chairman

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Introduction

Weaving Department is an independent department that focuses its activities on the training of fabric engineers. Every effort is made to equip students with ample knowledge of fabric manufacturing techniques. The teaching activities are carried out by well-qualified and dedicated faculty members. The department is equipped with a full range of weaving machines. Students are given extensive practical training to augment their theoretical knowledge. Regular visits to the fabric manufacturing units are organized to familiarize the students with the industrial environment and to get first hand feel of the industry. The department provides testing and consultancy services to the industry in addition to the normal teaching assignments. Research and development projects are also carried out for different sectors of textile industry.

Faculty

Dr. Yasir Nawab	Chairman/ Assistant Professor	Post Doctorate (Composite materials), France
Dr. Muhammad Zubair	Assistant Professor	PhD in Textile Technics and Materials Engineering, Czech Republic
Muhammad Ayub Asghar	Assistant Professor	MPhil Textile Technology, UK
Dr. Talha Ali Hamdani	Assistant Professor	PhD in Textile Science and Technology, UK
Muhammad Umar Nazir	Lecturer	MS. Textile Engineering, Pakistan
Adeela Nasreen	Lecturer	MS. Textile Engineering, Pakistan
Muhammad Usman Javed	Lecturer	MIT, Masters in Information Technology, Pakistan
Muhammad Umair	Lecturer	MS. Textile Engineering, Pakistan
Khubab Shaker	Lecturer	MS. Textile Engineering, Pakistan
Muhammad Zohaib Fazal	Lecturer	BS. Textile Engineering, Pakistan
Hassan Iftikhhar	Lecturer	MSc Mechanical Engineering, Canada

Weaving Lab Staff

Sr. No.	Name	Designation	Qualification
01	Muhammad Zeeshan	Lab Engineer	MS in Advance Material Engineering
02	Aamir Iqbal	Supervisor	Diploma in Weaving
03	Abdul Ghaffar	Senior Technician	MBA in Business Administration Diploma Weaving Technology
04	Muhammad Mubashar Hassan	Senior Technician	B. Tech (in Electronics)
05	Muhammad Latif	Technician	Under Primary
06	Ijaz Ahmad	Technician	Matric
07	Muhammad Awais	Technician	F.A.

Weaving Office Staff

Sr. No.	Name	Designation	Qualification
01	Muhammad Wasim	Office Assistant	MS in Business Administration
02	Muhammad Yousaf	Naib Qasid	Under Matric
03	Muhammad Asif	Naib Qasid	-

Student Strength

Currently 200 students are enrolled in all years.

Students Jobs

Total: 36

On job: 29

Doing Higher Studies: 9

Society of Textile Weavers

Society of textile weavers is a technical society made to equip students with the basic knowledge of fabric manufacturing. As we know that the practical knowledge leads to a deeper understanding of a concept. The society organizes different workshops, seminars and industrial tours for the students and encourages them to participate in all these activities, which enhance their leadership and decision-making qualities.

Industrial tours by students

- 3rd semester of Weaving department to Sapphire Diamond Fabrics
- 5th semester of Weaving department to Nishat Mills Ltd
- 7th semester Weaving department to Be Be Jan Colours Ltd
- 1st semester Weaving department to Crescent Textile Mills Ltd. Faisalabad

Inauguration of Zwick-NTU lab

The NTU and Zwick Roell, Germany have established a demo lab at NTU, to meet needs of technical textiles and polymer industry of Pakistan. The inauguration ceremony was held on 27 March 2017 by Miss Christine Duebler and Mian Muhammad Latif. An MoU was also signed to further enhance this collaboration between both the organisations. The Testing facilities available in this lab include:

- Universal Testing Machine
- Pendulum Impact tester
- Drop-weight Impact tester
- Hardness Testers (Barcol and Shore hardness)
- Fatigue Testing Machine
- Melt flow indexer



Seminars/workshops

1. Smart Composites: Structural Health Monitoring using optical fibers (Professor Dr. Abdel-Fattah Seyam, Department Head, College of Textiles, NC State University, USA)



2. Awareness on recycling of textile waste (Mr. Nauman Hameed, Technical Manager STML6)
3. Future of Denim Industry in Pakistan (Mr. Shakeel Ahmad Awan, Mills Manager, US Denim Lahore)



4. Role of Sizing in weaving, its advantages & disadvantages (Mr. Muhammad Imran Zafar, Preparatory Manager, Nishat Mills Ltd. Bikkhi)



5. CBI Seminar on EU Market Information (Her Excellency Ms. Renate Pors, Deputy ambassador, Embassy of the Netherlands)
6. Hands-On Campus Workshop: Design and Deploy Embedded Systems using LabVIEW (Mr. Muhammad Adnan, Technical Field Manager from National Instruments (NI))
7. Seminar on Marketing Trends of Denim in Different Countries (Mr. Muhammad Muzammal Saif, Deputy Manager US Denim, Lahore)
8. Interview Skills (Malik Abdul Qayyum Raza, HR manager, Nishat Group)
9. Hands-On Campus Workshop: MATLAB: an introduction with Applications (Ms. Javeria Chiragh, lecturer Knitting Department)
10. Training on Occupation Health and Safety (Engr. Sultan Mahmood, Emergency Officer (Divisional) with Punjab Emergency Service, Rescue 1122)
11. Installation and Two-days Training session organised for the Ultrasonic Tester (C-scan)



12. Installation and Training session held for the Drop Weight Impact Tester & Melt Flow Indexer

13. Installation and Training on Fatigue Testing machine conducted by Mr. Philip Stegmiller from Zwick, Germany



Industrial visits by faculty

- Technical Visit Hafiz Velvet Mills Gujranwala by Dr. Muhammad Zubair, Mr. Muhammad Ayub Asghar and Miss Adeela Nasreen
- Research & Innovation Team from Interloop visited National Textile University

Staff Training

A three-day training was conducted for staff in different textile organizations, in the vicinity of Faisalabad.

Sr.#	Name	Company	Machine	Date	Work Hours
1	Abdul Ghaffar	Bebe Jan Textile	Picanol AirJet	Sep 2017	24
2	Muhammad Awais	Bebe Jan Textile	Picanol AirJet	Sep 2017	24
3	Mubashar Hassan	Sapphire Textile	Toyota Air Jet	Sep 2017	24
4	Aamir Iqbal	Sapphire Textile	Toyota Air Jet	Sep 2017	24
5	Ijaz Ahmad	Arshad Corporation	Projectile	Sep 2017	24
6	Muhammad Latif	Arshad Corporation	Projectile	Sep 2017	24

Events Organized



DICE Textile Innovation Event, 6-7 March 2018

The 3rd NTU DICE Textile Innovation event was arranged on 6 - 7 March 2018. The major objectives of this event were to promote and collaborate on innovations related to textile sector, commercialization of these innovations, textile engineering capacity building, leveraging knowledge of expatriates around the world, providing access to Pakistan Textile Industry to international markets and to help Government of Pakistan in textile policy making. It was one of the biggest gathering of academia and textile industry in Pakistan, with 180 projects presented by students and faculty members from 35 universities nationwide. The CEOs and representatives from more than 120 industries visited this event. A total of 0.5 million rupees was awarded to different projects based on the innovation and usefulness to address different textile industry issues.



International Conference on Technical Textiles, 9-10 November 2017

1st International Conference on Technical Textiles ICTT-2017 was held at National Textile University Faisalabad on November 09-10, 2017. Federal secretary for textiles, Mr. Hassan Iqbal was the chief guest of the event. The objective of conference was to facilitate interaction between researchers and professionals working in the field of textile engineering. The conference provided an international forum for professionals from academia, industry and governing bodies to discuss their problems and share achievements in order to develop the nations through recent manufacturing techniques and technologies. Researchers from 5 different countries presented their research papers. The event was organized into 10 different sessions. The topics covered included composite materials, smart textiles, medical textiles, supply chain management, textile comfort and eco-textiles, textile yarns fabrics and image processing and textile processing. More than 300 participants from 150 organizations/institutes attended the conference.

MoUs signed

1. MoU Signed between Mubashar Corporation and NTU (Muhammad Mubashar, CEO Mubashar Corporation and Dr. Tanveer Hussain, Rector NTU has signed an MoU.)



2. MOU Signed between BZU Multan and NTU (Dr. Yasir Nawab, Director Graduate Studies and Research and Principal BZU College of Textile Engineering & VC BZU Multan has signed an MoU)
3. Weaving Department and CTI signed a Technology Transfer Contract (Carpets Training Institute Lahore and Carpets Manufacturing Association including Mr. Muhammad Saeed Khan, Ch. Riaz Ahmad, Mr. Qamar Zia, Khawja Khalid Rasheed, Mr. Iftikhar Tahir, Kh. Ejaz, Ch. Abdul Rehman.)

4. Zwick Roell Germany and weaving department NTU signed an MoU to establish a testing lab at NTU and to enhance the collaboration between two.



Publications

1. Aaboud, B., Saouab, A., Nawab, Y. Simulation of air bubble's creation, compression, and transport phenomena in resin transfer moulding, 2017, Journal of Composite Materials
2. Umair, M., Shaker, K., Ahmad, N., (...), Jabbar, M., Nawab, Y. Simultaneous Optimization of Woven Fabric Properties Using Principal Component Analysis, 2017, Journal of Natural Fibers
3. Jabbar, M., Shaker, K., Umair, M., Nawab, Y. "Optimizing the performance of woven protective gloves using grey relational analysis" 2017, Journal of the Textile Institute
4. Ameer, M.H., Shaker, K., Ashraf, M., (...), Ahmad, S., Ali Nasir, M. "Interdependence of moisture, mechanical properties, and hydrophobic treatment of jute fibre-reinforced composite materials" 2017, Journal of the Textile Institute
5. Ashraf, W., Nawab, Y., Umair, M., Shaker, K., Karahan, M. "Investigation of mechanical behavior of woven/knitted hybrid composites" 2017, Journal of the Textile Institute
6. Shaker, K., Nawab, Y., Saouab, A., Ashraf, M., Khan, A.N. "Effect of silica particle loading on shape distortion in glass/vinyl ester-laminated composite plates" 2017, Journal of the Textile Institute
7. Nazir, M.U., Shaker, K., Nawab, Y., (...), Khan, M.I., Umair, M. "Investigating the effect of material and weave design on comfort properties of bilayer-woven fabrics" 2017, Journal of the Textile Institute
8. Liaqat, M., Samad, H.A., Hamdani, S.T.A., Nawab, Y. "The development of novel auxetic woven structure for impact applications" 2017, Journal of the Textile Institute
9. Maqsood, M., Hussain, T., Ahmad, N., Nawab, Y. "Multi-response optimization of mechanical and comfort properties of bi-stretch woven fabrics using grey relational analysis in Taguchi method" 2017, Journal of the Textile Institute
10. Umar, M., Shaker, K., Ahmad, S., (...), Umair, M., Maqsood, M. "Investigating the mechanical behavior of composites made from textile industry waste" 2017, Journal of the Textile Institute
11. Maqsood, M., Nawab, Y., Umar, J., Umair, M., Shaker, K. "Comparison of compression properties of stretchable knitted fabrics and bi-stretch woven fabrics for compression garments" 2017, Journal of the Textile Institute

12. Afzal, A., Ahmad, S., Rasheed, A., (...), Iftikhar, F., Nawab, Y. "Influence of fabric parameters on thermal comfort performance of double layer knitted interlock fabrics" 2017, Autex Research Journal
13. Maqsood, M., Khan, M.I., Shaker, K., Umair, M., Nawab, Y. "Recycling of warp size materials and comparison of yarn mechanical properties sized with recycled materials and virgin materials" 2017, Journal of the Textile Institute
14. Umair, M., Shaker, K., Nawab, Y., Rasheed, A., Ahmad, A. "A study on the twist loss in weft yarn during air jet waving" 2017, Journal of Engineered Fibers and Fabrics
15. Ali, M., Nawab, Y., Saouab, A., Anjum, A., Zeeshan, M., "Fabrication induced spring-back in thermosetting woven composite parts with variable thickness" 2017, Journal of Industrial Textiles
16. Zulifqar, A., Umair, M., Shaker, K., Baitab, DM., Nawab, Y., Maqsood, M., "Investigation of multi-layered woven car seatbelts with optimum performance" 2017, Industria textila
17. Khurshid, MF., Abbas, A., Aslam, S., Hamdani, STA., Ali, U., Hussain, F., "Comparative analysis of siro yarn properties spun on ring and pneumatic compact spinning systems" 2017, Industria Textila

Conferences

- 1 Muhammad Zeeshan, Mumtaz Ali, Aima Sameen Anjum, Syed Talha Ali Hamdani, Yasir Nawab, "Shape Memory Polymers and Their Composite for Structural Applications," In the Proceedings of 1st International Conference on Advanced Materials & Processing 2017 (ICAMP-17), Mehran University of Engineering and Technology, Jamshoro, Pakistan, 28 Feb. – 02 Mar. 2017; pp.
- 2 Yasir Nawab, Khubab Shaker "2D & 3D woven composites with auxetic behavior for improved mechanical properties," 15th Internal Symposium on Advance Materials (ISAM), National Centre for Physics, Islamabad, 16-20 October 2017
- 3 Yasir Nawab, "Significance of 3D woven reinforcement/assemblies and their corresponding composites" 26th Zwick TestXpo, Ulm Germany, 16 -19 October 2017
- 4 Muhammad Ayub Asghar, "Technical Textiles: Way forward for weaving industry of Pakistan" International Conference on Technical Textiles, National Textile University, Faisalabad-Pakistan, 9-10 November 2017

Books/Book chapters

- Fabric Manufacturing Calculations: Process and Product by Yasir Nawab (HEC Pakistan) 2017
- Structural Textile Design: Interlacing & Interlooping edited by Yasir Nawab, Syed Talha Ali Hamdani and Khubab Shaker (CRC Press, USA) 2017
- “Composite Materials Testing” by Khubab Shaker and Yasir Nawab in “Advanced Textile Testing Techniques” edited by Sheraz Ahmad, Abher Rasheed, Ali Afzal, Faheem Ahmad (CRC Press, USA) 2017
- “Textile Greige Fabrics (Woven and Knitted)” by Muhammad Umair, Muhammad Umar Nazir, and Sheraz Ahmad in “Advanced Textile Testing Techniques” edited by Sheraz Ahmad, Abher Rasheed, Ali Afzal, Faheem Ahmad (CRC Press, USA) 2017

Patents Filed

- Javaria Chiragh, Syed Talha Ali Hamdani, Muhammad Ayub Asghar and Yasir Nawab. "Method and Apparatus for yarn length measuring devices for high performance yarn." National Patent IPO Pakistan
- Syed Talha Ali Hamdani, Yasir Nawab, Muhammad Ayub Asghar and Muhammad Waseem. " Development of smart socks for health monitoring." National Patent IPO Pakistan
- Danish Mahmood Baitab, Yasir Nawab, Mumtaz Hassan Malik, Muhammad Ayub Asghar and Syed Talha Ali Hamdani. "Machine for weaving of higher performance fibres coming directly from creel." National Patent IPO Pakistan

Research Funding

Sr. #	Title of Project	Amount (million Rs.)	Funding source(s)
1	Evaluation and modelling the residual stress in thermoset composite to control interlaminar failure	2.0	HEC (UIP)
2	Light weight bullet proof vest made from 3D comingled woven thermoplastic composite and novel auxetic woven fabrics	14.0	HEC (TDF)
3	Novel 3d woven auxetic pleated fabric-based composites for impact/shock absorption	5.6	HEC (NRPU)
4	Development, characterization and modelling of low cost sustainable hybrid composite parts with antimicrobial activity	14.4	HEC (NRPU)
5	Development of Eco-Friendly, Energy Efficient, Indigenous Sizing Machine	2.2	Pakistan Science Foundation
6	Development of electro-textile nonintrusive cardiorespiratory sensor and heating fabrics for in-car applications	0.5	HEC (SRG)

Awards/Achievements

- Dr. Yasir Nawab was awarded with HEC's "Best University Teacher Award" for the year 2016, in a ceremony held at HEC - Islamabad on February 21, 2018.



- National Textile University (NTU), Faisalabad feels honor in collaborating with Pakistan Army and Crestex Pvt Ltd. in hoisting eighth largest flag in the world and first in South Asia at Wagah border.



- Dr. Talha Hamdani receiving NRPU award letter from Governor Punjab, Chairman HEC Pakistan and Secretary HEC Punjab.

