DR. ABDUL WAQAR RAJPUT

Principal | Associate Professor | Textile Engineering | Researcher

College of Textile Engineering
Bahauddin Zakariya University, Multan, Pakistan

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Google Scholar: https://scholar.google.com/citations?user=9VZDy1oAAAAJ

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1. PROFESSIONAL SUMMARY

Dr. Abdul Waqar Rajput is a Textile Engineering academic, researcher and academic administrator currently serving as Principal and Associate Professor at the College of Textile Engineering, Bahauddin Zakariya University (BZU), Multan, Pakistan. He obtained his Bachelor of Engineering in Textile Engineering in 2007 and his PhD in Textile Engineering from Heriot-Watt University, United Kingdom, in 2013.

His academic and research career spans textile manufacturing, yarn engineering, advanced fibre technologies, nanofibre production, smart textiles, technical textiles, sustainable materials and textile product development. His research combines fundamental textile engineering with the development of innovative materials, manufacturing technologies and sustainable solutions for industrial applications.

He has substantial experience in undergraduate and postgraduate teaching, research supervision, curriculum development, academic quality assurance and institutional leadership. As Project Manager of the Erasmus+ CBHE SMARTEX project, he contributed to international academic collaboration and modernisation of textile engineering education involving European and Asian higher education institutions.

His professional interests extend to sustainable and circular textile manufacturing, life cycle assessment (LCA), Product Environmental Footprint (PEF), advanced textile materials and international research collaboration.

2. ACADEMIC QUALIFICATIONS

Doctor of Philosophy (PhD) in Textile Engineering – 2013
Heriot-Watt University, United Kingdom.

Bachelor of Engineering (BE) in Textile Engineering – 2007
Mehran University of Engineering and Technology, Jamshoro

3. PROFESSIONAL APPOINTMENTS

Principal and Associate Professor
College of Textile Engineering, Bahauddin Zakariya University, Multan, Pakistan.

Associate Professor | March 2023 – Present
College of Textile Engineering, Bahauddin Zakariya University, Multan, Pakistan.

Assistant Professor | September 2013 – March 2023
College of Textile Engineering, Bahauddin Zakariya University, Multan, Pakistan.

4. RESEARCH EXPERTISE

Core Research Areas

1. Textile Design and Manufacturing
2. Yarn Manufacturing and Engineering
3. Nanofibre Manufacturing Technologies
4. Smart and Functional Textiles
5. Technical Textiles
6. High-Performance Fibres
7. Advanced Textile Materials and Composites
8. Sustainable Textile Manufacturing
9. Natural and Recycled Fibre Applications
10. Textile Product Development
11. Life Cycle Assessment (LCA) and environmental impact assessment.
12. Product Environmental Footprint (PEF).
13. Environmental sustainability of textile products and manufacturing processes.
14. Circular economy and sustainable production systems.

5. INTERNATIONAL RESEARCH PROJECTS

Erasmus+ Capacity Building in Higher Education (CBHE) – SMARTEX

Project title: Smart Textiles – Modernisation of the Curriculum of Textile Engineering and Textile Technology in Indonesia, Malaysia, and Pakistan.

Role: Project Manager, Bahauddin Zakariya University.

The project focused on modernising textile engineering education through international academic cooperation, curriculum enhancement, capacity building and the integration of smart textile technologies into higher education programmes.

International Consortium:

- University of West Attica, Greece
- Ghent University, Belgium
- Universitat Politècnica de València, Spain
- IDEC, Greece
- Universiti Teknologi MARA, Malaysia
- Universiti Tun Hussein Onn Malaysia
- Politeknik STTT Bandung, Indonesia
- Institut Teknologi Bandung, Indonesia
- Bahauddin Zakariya University, Pakistan
- NED University of Engineering and Technology, Pakistan

Key Contributions:

- Project management and institutional coordination.
- International academic and research collaboration.
- Modernisation of textile engineering curricula.
- Development of institutional research and educational capacity.
- Engagement with European and Asian academic partners.

6. INTERNATIONAL INDUSTRY COLLABORATION AND CONSULTANCY

XlynX Materials, Canada

International consultancy collaboration involving the development of advanced high-strength fibres and innovative material technologies.

This collaboration reflects an interest in translating textile engineering research into industrial applications and advanced material development.

7. TEACHING EXPERIENCE

Experience in teaching undergraduate and postgraduate textile engineering and related courses.

Selected Courses:

- Textile Product Development.
- Technical Textiles.
- Textile Sustainability and Future Trends.
- Environmental of Impact of Textile Industry
- Instrumentation and Control.
- Textile Manufacturing and Engineering.

Teaching and Learning Contributions:

- Curriculum design and development.
- Outcome-Based Education (OBE).
- Development of course learning outcomes and assessment rubrics.
- Laboratory and practical course development.
- Student centred learning and project based assessment.
- Undergraduate and postgraduate research mentoring.

8. RESEARCH SUPERVISION

Experience in supervising research at multiple academic levels:

- PhD research supervision.
- MPhil research supervision.
- Undergraduate final year research projects.

Research supervision interests include:

- Sustainable textile materials.
- Yarn manufacturing and engineering.
- Smart and functional textiles.
- Nanofibre technologies.
- Textile composites.
- Textile manufacturing and product development.
- Environmental sustainability in textile processing.

9. ACADEMIC LEADERSHIP AND ADMINISTRATION

As Principal of the College of Textile Engineering, BZU, responsibilities include:

- Institutional academic and administrative leadership.
- Strategic planning and academic development.
- Faculty and programme development.
- Curriculum review and modernisation.
- Research promotion and institutional capacity building.
- Industry–academia partnerships.
- Quality assurance and accreditation-related activities.
- Development and strengthening of international academic linkages.
- Student academic development and professional engagement.

10. QUALITY ASSURANCE AND PROFESSIONAL DEVELOPMENT

- Pakistan Engineering Council (PEC) Program Evaluator (PEV) training.
- Experience in Outcome-Based Education and engineering programme assessment.

- Curriculum review and development.
- Programme Educational Objectives (PEOs) and Programme Learning Outcomes (PLOs).
- Academic quality assurance and accreditation processes.
- Certification in Life Cycle Assessment (LCA)

11. SELECTED RESEARCH PUBLICATIONS

The following are selected scholarly contributions identified through publicly available academic records. The complete and updated publication list should be maintained through the Google Scholar profile.

2024

1. Aslam S, Rajput AW, Abbas A, Aleem AU, Aslam S. Online structural health monitoring of polymer composite structure using gold nanoparticles (AuNPs). *Mehran University Research Journal of Engineering & Technology*. 2024;43(2):157–161.

2023

2. Jamshaid H, Rajput AW, Bajwa I, Mujeeb A. Effect of different washing methods on denim fabric properties and their effluents environmental impact. *Mehran University Research Journal of Engineering & Technology*. 2023;42(3):33–41.

2022

3. Jamshaid H, Rajput AW, Zahid B, et al. The effect of basalt knitted fabric on the properties of green epoxy resin. *Polimery*. 2022;67(2):67–71.
4. Jamshaid H, Mishra R, Basra S, Rajput AW, et al. Lignocellulosic natural fiber reinforced bisphenol F epoxy based bio-composites: characterization of mechanical electrical performance. *Journal of Natural Fibers*. 2022;19(9):3317–3332.
5. Jamshaid H, Mishra R, Hussain U, Rajput AW, et al. Natural fiber based antibacterial, wound healing surgical sutures by the application of herbal antimicrobial compounds. *Journal of Natural Fibers*. 2022;19(14):9531–9546.
6. Irfan M, Zahid B, Sidique SH, Jamshaid H, Rajput AW, Hou A. The effect of degree of curvature and fabric orientation on the impact properties of single and multilayer textile composites. *The Journal of The Textile Institute*. 2022;113(1):54–59.

2021

7. Rajput AW, et al. Characterisation of interlock knitted fabric with different feed patterns to improve thermal and sensorial comfort. *Fibres and Textiles in Eastern Europe*. 2021;29(3):80–85.
8. Rajput AW, et al. Performance evaluation of upholstery fabric developed from recycled fibres. *Fibres and Textiles in Eastern Europe*. 2021.
9. Rajput AW, et al. Impact properties of continuously textile reinforced double fabric layered riot-police-helmet-shells. *Industria Textila*. 2021;72(5):485–490.

10. Rajput AW, et al. Investigation of frictional impact on polyester yarn during knitting. *Industria Textila*. 2021;72(6):595–600.
11. Rajput AW, et al. Comparative analysis of 100% cotton Siro and single yarns. *Industria Textila*. 2021;72(6):619–622.

2020

12. Rajput AW, et al. Comparison of functional properties of woven and knitted denim fabrics. *Industria Textila*. 2020;71(1):3–7.
13. Rajput AW, et al. Investigations of stretch and recovery properties of knitted socks. *Industria Textila*. 2020;71(2):132–137.
14. Rajput AW, et al. A green and cost-effective approach to reutilize the effluent from bleaching process. *Journal of Applied and Emerging Sciences*. 2020;9(2):85–90.

2019

15. Rajput AW, et al. Eco-friendly route for dyeing of cotton fabric using three organic mordants in reactive dyes. *Industria Textila*. 2019;70(1):25–29.
16. Rajput AW, et al. Effect of cell size on tensile strength and elongation properties of honeycomb weave. *Industria Textila*. 2019;70(2).

2018

17. Rajput AW, et al. Application of Taguchi method to investigate the effect of temperature, heating time, concentration and particle size on improved gel spinning process of UHMWPE. *Industria Textila*. 2018;69(5):347–351.

2017

18. Ali U, Niu H, Aslam S, Jabbar A, Rajput AW, Lin T. Needleless electrospinning using sprocket wheel disk spinneret. *Journal of Materials Science*. 2017;52:7567–7577.
19. Rajput AW, et al. Needleless electrospinning using a flat wheel spinneret. *Journal of Engineered Fibers and Fabrics*. 2017;12(6):81–89.
20. Rajput AW, et al. Effect of roving linear density on the quality parameters of 16 Ne 100% cotton yarn. *Industria Textila*. 2017;68(6):435–438.

2014

21. Rajput AW, ul Aleem A, Arain FA. An environmentally friendly process for the preparation of UHMWPE as-spun fibres. *International Journal of Polymer Science*. 2014.
22. Rajput AW, et al. Characterization of rotor spun knitting yarn at high rotor speeds. *Technical Journal, University of Engineering and Technology Taxila*. 2014;19(4):73–78.
23. Rajput AW, et al. Impact of trifling quantity of polyester on physical characterization of low twist rotor spun blended yarn. *Science International*. 2014;26(1):279–282.

12. CONFERENCE CONTRIBUTIONS

Díaz-García P, Capablanca-Francés L, Belda-Anaya R, Tufali M, Zahid B, Rajput AW. SMARTEX project – Transnational cooperation between universities. *ICERI2022 Proceedings*. 2022:4079–4084.

13. PROFESSIONAL RECOGNITION AND DEVELOPMENT

- Pakistan Engineering Council – Program Evaluator (PEV) training.
- Project Manager, Erasmus+ CBHE SMARTEX.
- International consultancy collaboration with XlynX Materials, Canada.
- Invited research presentation at STTT Bandung, Indonesia.

14. PROFESSIONAL RESEARCH NETWORKS

Academic and research collaborations involving institutions in:

- United Kingdom
- Belgium
- Spain
- Greece
- Malaysia
- Indonesia
- Canada

15. RESEARCH PROFILES

Google Scholar: https://scholar.google.com/citations?user=9VZDy1oAAAAJ

ORCID: https://orcid.org/0000-0003-4521-9105

Institutional Profile: https://profiles.bzu.edu.pk/abdulwaqar