

## CURRICULUM VITAE

### ANEEBA CHAUDARY

Ph.D. Candidate | Material Science Engineering

Iowa State University, USA

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[LinkedIn](#) | [Google Scholar](#) | [Research Gate](#) | [Website](#)

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### EDUCATION

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#### Ph.D. in Material Science Engineering (*Expected 2028*)

Iowa State University, USA

*Research Focus:* Developing PFAS-free omniphobic textile coatings using amphiphilic nanoparticles for sustainable and high-performance textiles.

Advisor: Dr. Shan Jiang

#### M.Phil. in Textile Engineering (*2022*)

Donghua University, Shanghai, China

*Research Area:* Engineered thermally insulating nanocellulose-based materials for textile and composite applications.

Scholarship: CSC Full-Tuition Scholarship

#### B.Sc. (Hons.) Textile Engineering (*2017*)

University of Agriculture, Faisalabad, Pakistan

*Thesis:* Developed natural dyeing formulations for antimicrobial and eco-friendly textile finishes

Scholarship: HEC Merit Award

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### RESEARCH EXPERIENCE

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#### Graduate Research Assistant

*Iowa State University (2023 – Present)*

- Developing PFAS-free omniphobic textile finishes using crosslinkable acrylic binders and Janus nanoparticle additives to enhance repellency, durability, and wash fastness on cotton and nylon fabrics.
- Investigating binder-fiber interactions, coating adhesion, and mechanical/thermal stability of treated textiles using SEM, FTIR, DSC, and contact-angle analysis.
- Studying structure-property relationships to optimize curing behavior, coating penetration, film uniformity, and long-term performance under textile-relevant conditions (laundering, abrasion, UV).

#### Master's Researcher

*Donghua University (2019 – 2022)*

- Fabricated nanocellulose/chitosan aerogels for thermal insulation and structural strength.
- Engineered environmentally friendly biopolymer aerogels with improved mechanical performance.

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## PUBLICATIONS ([Verified on Web of Science](#))

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(Total Citations: ~11)

1. Beyond Surfactants: Janus Particles for Functional Interfaces and Coatings (2025). *Langmuir*.
2. Two sides of the coin: Synthesis and applications of Janus particles (2025). *Nanoscale*.
3. A novel dilution strategy for tuning Janus particle morphology (2025). *Journal of Colloid and Interface Science*.
4. Polypropylene-chitosan sponges prepared via thermal induce phase separation used as sorbents for oil spills cleanup (2023). *Polymer Bulletin*.
5. SiO<sub>2</sub> aerogels coating on 3D weft-knitted spacer fabrics for oil spill cleanup (2023). *Journal of Water Process Engineering*.
6. Structurally integrated thermal management of isotropic and directionally ice-templated nanocellulose/chitosan aerogels (2022). *Cellulose*.
7. Polysaccharide-based random and unidirectional aerogels for thermal and mechanical stability (2022). *Journal of Donghua University (English Edition)*.
8. Nanoscale cellulose and nanocellulose-based aerogels (2022). *Advanced Materials for Sustainable Environmental Remediation*.
9. Structure and rheological studies of phosphorylated cellulose nanofibrils suspensions (2022). *Industrial Crops and Products*.

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## PEER REVIEW SERVICE

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[Verified Web of Science Reviewer Profile](#)

### Journal of Industrial Textiles – 8 peer reviews completed

- Topics include flame resistance, nanofibers, electrospinning, thermal protective performance, and structural textile design
- Latest review: *Research on the Tensile Strength and Microstructure of Domestically Produced High-Performance Al<sub>2</sub>O<sub>3</sub> Fiber Monofilaments*, Aug 2025

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## ADVANCED COURSEWORK

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- Thermodynamics & Kinetics in Multicomponent Materials
- Characterization Methods in Materials Science
- Physical and Mechanical Behavior of Materials
- Solid State Science
- Surface and Colloid Chemistry
- Characterization Methods in Material Science

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## EMPLOYMENT EXPERIENCE

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### Assistant Manager – Apparel Production

*Masood Textile Mills, Faisalabad, Pakistan (2017 – 2019)*

- Led day-to-day operations across woven, knitted, and stitching production units, ensuring smooth workflow, quality consistency, and on-time delivery.
- Supervised fabric finishing processes, coating/chemical finishing, curing, dimensional stability, and hand-feel to maintain performance standards and reduce defects.

- Collaborated closely with IE, QC, QA, R&D, and maintenance teams to improve process parameters, troubleshoot machining issues, and validate new fabric finishes or production trials.
- Conducted root-cause analyses, line studies, and process validation trials to resolve recurring quality problems and improve reproducibility.
- Implemented Lean/Kaizen improvements, optimizing manpower and workflow, increasing line efficiency, and reducing fabric and process waste.
- Developed and enforced SOPs, work instructions, and ISO-aligned quality documentation, while training operators on calibration, safety, and process best practices.

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## HONORS/AWARDS

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- Graduate Research Assistantship, Iowa State University (2023)
- Outstanding International Student Award, Donghua University (2020, 2022)
- Fully Funded International Master's Scholarship, 2019–2022
- HEC Merit-Based Scholarship – University of Agriculture, Faisalabad (2013–2017)
- Best Presidentship – Textile Engineering Society, UAF (2017)

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## TECHNICAL & ANALYTICAL SKILLS

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- Instrumentation: XRD, TEM, AFM, XPS, FTIR, TGA, DSC, UTM, Fluorescence Microscopy
- Software: OriginPro, MATLAB, SAS, C++, Adobe Illustrator, Canva
- Techniques: Nanoparticle synthesis, colloidal chemistry, electrospinning, surface functionalization, microscopy imaging

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## ACADEMIC & PROFESSIONAL SERVICE

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- Invited Speaker – Environmentally-Sound Technologies Workshop, Tishreen University, Syria (Nov 2022)
- Vice President, Pakistani Student Association, Iowa State University (2023–Present)
- President, SCISA, Donghua University (2021–2022)
- Editor, Society of Engineering and Technology, UAF (2013–2017)