

# Md Nur Uddin

705 Centennial Pkwy APT #505, Raleigh, NC 27606 | Cell: +1-(806)-878-0784 | [nur.fbri@gmail.com](mailto:nur.fbri@gmail.com)

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

## NONWOVENS | COFORM | FIBERS & POLYMERS

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- Expertise in developing sustainable fibrous materials: nonwovens, coform, abrasives, textiles, composites, automotive, filtration, and biomedical applications.
- Leverages 5+ years of experience leading pioneering academic and entrepreneurial projects in bioproducts and green technology.
- Passionate about translating fundamental research into scalable industrial solutions.
- Core strengths include designing experiments, data analysis, interdisciplinary collaboration, and technology commercialization.

## EDUCATION

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### NC State University

*Ph. D. in Fiber and Polymer Science. Awarded Prestigious Provost Fellowship  
The Nonwoven Institute, Wilson College of Textiles, NCSU*

*Raleigh, NC, USA*

*08/2023 – Present*

### Texas Tech University (TTU)

*M.Sc. in Fiber and Biopolymer.*

*Fiber and Biopolymer Research Institute (FBRI), Department of Plant and Soil Science (PSS)*

*Lubbock, Texas, USA*

*08/2021 – 08/2023*

### Dhaka University of Engineering & Technology (DUET)

*B.Sc. in Textile Engineering.*

*Gazipur, Bangladesh*

*01/2015 – 03/2019*

## ACADEMIC RESEARCH EXPERIENCES

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- **Graduate Research Assistant**, The Nonwoven Institute  
NC State University, *Raleigh, NC* *01/2024 – Present*  
**Project: Adsorbent particulate deposition in coform meltblown process**  
Sponsored by *Saint Gobain*
  - Cause and effect of analysis of meltblown coform process
  - Coform process optimization
  - Characterization of developed products and translation from lab to industrial scale
- **Graduate Research Assistant**, Fiber and Biopolymer Research Institute,  
Texas Tech University, *Lubbock, TX* *08/2021 – 08/2023*
- **Project 1: BastCore - Hemp processing innovations**  
*BastCore Inc. was funded to characterize industrial hemp biomass for textile and bioproduct applications.*
  - Determined chemical composition (61% cellulose, 18% hemicellulose, 21% lignin) of industrial hemp biomass.
  - Performed delignification using deep eutectic solvents to improve fiber properties for textiles.
  - Scaled process from bench to 5-10L chemical reactor to study industrial feasibility.
  - Explored cellulose bioplastics and 3D printing using cellulose dissolved in solvents.
- **Project 2: NSF I-CORPS: NanoChit - Next-generation sustainable green biofillers**  
*NSF funded the project to develop biobased nanofillers for the automotive industry.*
  - Developed a one-step process isolating 79% yield chitin nanowhiskers with 75 aspect ratios directly from biomass waste.
  - Characterized chitin nanowhiskers - 68% crystallinity via XRD, TEM, AFM, and TGA analysis.
  - Conducted over 100 customer interviews to assess the market potential of technology.

- **Undergraduate Research Assistant**, Dhaka University of Engineering and Technology, *Dhaka*, 01/2015 – 03/2019
  - Developed sustainable denim from cotton, polyester, and jute blends; characterized properties.
  - Produced antibacterial nanofibrous materials with medicinal plant extracts for wound dressings and characterized the nanofibers using SEM, FTIR, TGA, antibacterial assay, and cytotoxicity.

## PEER REVIEWED PUBLICATIONS: 12

(Citations: 317, h-index: 7, i10-index: 6)

## TECHNICAL / CONFERENCE / PRESENTATIONS: 07

## REVIEWED PAPERS: 17

### PROFESSIONAL EXPERIENCE

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- **Executive, R&D**, Shanta Denims Limited - *Saver, Dhaka* 04/2019 – 12/2019
    - Assessed textile samples against buyer requirements for bulk production.
    - Developed and tested samples for EPI, PPI, strength, comfort, and wash fastness.
  - **Industrial Engineer**, Crown Wears PVT. LTD - *Mymensingh, Dhaka* 01/2020 – 12/2020
    - Supervised a 50-member team and conducted work & motion studies in the cutting section.
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### INTERNSHIPS

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- **Trainee Executive, Echotex LTD- Dhaka, Bangladesh** 08/2018 – 10/2018
  - Trained up (2 months) in all operations in the composite industry, from knitting to finishing textile products.
  - Closely worked with the management team.
- **Trainee Executive, Sunbeam Knitwear LTD - Dhaka** 06/2014 – 12/2014
  - 6 months internship in the weft knitting industry.
  - Observed the production of knitted fabric (single and double jersey).

### SKILLS

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- **Research:** Quantitative, Qualitative, and Mixed Research
- **Fabrications:** Meltblown, Coform, Abrasive, Textile Technology, and Electrospinning
- **Characterizations:** SEM, TEM, AFM, FTIR, TGA, XRD, and Mechanical Testing
- **Software:** Adobe illustrator, MS office, Origin Pro, Sigma plot, and ChemDraw

### SCHOLARSHIPS AND AWARDS

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- University provost Fellowship, NCSU 2023 - 2024
- Study abroad competitive scholarship, TTU 2022 – 2023
- Opportunity and inclusion hemp award 2022
- Thompson family Abernathy scholarship 2022 – 2023
- A.W. young graduate student endowment 2022 – 2023
- James and Rachel Graham scholarship endowment, PSS, Texas Tech University 2021 – 2022
- 1st Runner up at inter-university innovative research idea competition 2018. 2018
- 1st Runner up at a debate organized by the international association of lion clubs 2016
- Four-academic-year scholarship during the study at the undergraduate level in DUET 2015 – 2019

### TEAMWORKS / LEADERSHIP

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- Volunteer at graduate student council, Department of Plant and Soil Science, Texas Tech University 2021 – Present

- Judge at 3 minutes research competition at Texas Tech University 2022
- Vice-president at DUET debating society (DDS). 2017 – 2019
- Coordinator at inter-university innovative research idea competition 2018
- Founder, First-aid welfare foundation, a social organization 2018
- Co-founder of a research club, investigation of obscure. 2017

### **CO-EDUCATIONAL / EXTRACURRICULAR CERTIFICATIONS**

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- Appreciation for completion of industrial training at ECHOTEX LTD 2019
- Working with garments CAD powered by BTMA 2018
- Appreciation for being 1<sup>st</sup> Runners Up at 1<sup>st</sup> inter-university innovative research idea competition 2018
- Presenting research idea competition at IUIRIC-2018 2018
- National English Olympiad season 2, organized by WOC & English Olympiad 2018

### **SEMINARS, CONFERENCES, WORKSHOPS**

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- Texas International Cotton School <https://www.texasintl cottonschool.com/> 2022
- Workshop on fiber optic distributed acoustic sensing (DAS) for infrastructure engineering and subsurface imaging 100 Terrace Ave, Baton Rouge, LA 70802 2021
- Appreciation for excellent execution at the Leadership and innovation carnival workshop 2018
- Day-long workshop in debate Bangladesh, a national debate organization 2017