

Md. Tusher Mollah

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Curriculum Vitae

Career Objective

Seeking a research position in **numerical modeling/computational fluid dynamics** to utilize my skills, potential, and adaptability for innovative contributions. Dedicated to sharing knowledge for the betterment of the future world.

Academic Background

Jul-19 to Feb-23 **Ph.D. in Manufacturing Engineering**, Department of Civil and Mechanical Engineering (DTU Construct), Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.

Medium of instruction: **English**.

Ph.D. Thesis: Computational Fluid Dynamics Modelling and Experimental Analysis of Material Extrusion Additive Manufacturing.

- Investigated layer morphology and its stability during multilayer printing in Robocasting.
- Investigated the integration of reinforcement bars and the presence of air voids in the structure during 3DCP.
- Investigated the printing of corners and its precision during filament-based MEX-AM.

Jan-17 to Apr-18 **M.Sc. in Applied Mathematics**, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj-8100, Bangladesh.

Result: CGPA 3.88 (on scale 4.00) with **Distinction**. Position: **2nd**. Danish weighted average: **11.2** in Courses and **12.0** in M.Sc. Thesis. Medium of instruction: **English**.

M.Sc. Thesis: Unsteady MHD Bingham Fluid Flow through a Parallel Plate with Ion-Slip and Hall Current.

- Investigated 2D channel flow of non-Newtonian fluid within the magneto-hydrodynamic field.
- Investigated the channel flow between two Riga plates within the electro-magneto-hydrodynamic field.

Jan-13 to Dec-16 **B.Sc. in Mathematics**, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj-8100, Bangladesh.

Result: CGPA 3.88 (on scale 4.00) with **Distinction**. Position: **2nd**. Danish weighted average: **11.4** in Courses and **12.0** in B.Sc. Thesis. Medium of instruction: **English**.

B.Sc. Thesis: Numerical Analysis on Unsteady Heat Transfer of Viscous Compressible Boundary Layer Fluid Flow through a Porous Plate with Induced Magnetic Field for an Irrotational System.

Major Course Completed

Doctorate of Philosophy

Computational Fluid Dynamics, Rheology of Complex Fluids, High-Performance Computing: FORTRAN, OpenMP, and MPI, Journal Club in Fluid Mechanics, How to Write a Scientific Paper, and Sustainability Evaluation and Communication.

Master of Science

Analytical Dynamics, Theoretical Astrophysics, Fluid Dynamics, Industrial Mathematics, Operation Research, Boundary Layer Theory and Heat Transfer, Magneto-Hydrodynamics, and Thermodynamics and Statistical Mechanics.

Bachelor of Science

Basic Algebra and Trigonometry, Calculus-I, Geometry in Two Dimensions, Geometry in Three Dimensions, Calculus-II, Linear Algebra, Ordinary Differential Equations, Vector and Tensor Analysis, Real Analysis-I, Partial Differential Equations, Discrete Mathematics, Programming with FORTRAN, Abstract Algebra, Real Analysis-II, Complex Analysis, Mechanics, Mathematical Methods, General Topology, Classical Mechanics, Theory of Numbers, Numerical Analysis, Linear Programming, Hydrostatics and Hydrodynamics, Integral Equations, Differential Geometry, Lattice Theory, Astronomy, Mathematical Modeling in Biology, Rings and Modules, Quantum Mechanics, Wavelet Analysis, and Real Function Theory.

Experiences

- Feb-23 to onward **Research Assistant**, Department of Civil and Mechanical Engineering, Section of Manufacturing Engineering, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.
- Mar-22 to Jun-22 **Visiting Researcher**, Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, Loughborough LE11 3TU, United Kingdom.
- Jul-19 to Feb-23 **PhD Student**, Department of Civil and Mechanical Engineering, Section of Manufacturing Engineering, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.
- Jan-19 to Jun-19 **Lecturer**, Department of Mathematics at European University of Bangladesh, 2/4 Gabtoli, Mirpur, Dhaka-1216, Bangladesh.
- Nov-18 to Jun-19 **Adjunct Lecturer in Mathematics**, Department of Computer Science and Engineering at Central University of Science and Technology, Plot-A/5, Block-A, Mirpur-14, Dhaka, Bangladesh.
- Jun-18 to Dec-18 **Research Assistant** at Khulna University, Khulna-9208, Bangladesh; under *Prof. Dr. Md. Mahmud Alam*, Mathematics Discipline, Khulna University, Khulna-9208, Bangladesh.
- Jul-17 to Jun-18 **Research Fellow** at National Science and Technology (NST) under the Ministry of Science and Technology, Government of People's Republic of Bangladesh with *Prof. Dr. Md. Mahmud Alam*, Mathematics Discipline, Khulna University, Khulna-9208, Bangladesh.

Professional Profiles

- ResearchGate: https://www.researchgate.net/profile/Md_Tusher_Mollah3
- LinkedIn: <https://www.linkedin.com/in/md-tusher-mollah-bsmrstu/>
- ORCID: <https://orcid.org/0000-0001-8678-8908>

Research Interest

- Computational Fluid Dynamics (CFD) • Fluid Mechanics and Heat Transfer • Numerical Simulation
- Material Extrusion Additive Manufacturing • Porous Media Applications

Featured Publications

1. **Md. Tusher Mollah**, Raphael Comminal, Marcin P. Serdeczny, David B. Pedersen, and Jon Spangenberg (2021), "Stability and deformations of deposited layers in material extrusion additive manufacturing", *Additive Manufacturing*, Vol. **46**, P 102193.
2. **Md. Tusher Mollah**, Raphael Comminal, Marcin P. Serdeczny, Berin Seta, and Jon Spangenberg (2023), "Computational analysis of yield stress buildup and stability of deposited layers in material extrusion additive manufacturing", *Additive Manufacturing*, Vol. **71**, P 103605..
3. **Md. Tusher Mollah**, Raphael Comminal, Wilson Ricardo Leal da Silva, Berin Seta, and Jon Spangenberg (2023), "Integration of Reinforcement Bars in 3d Concrete Printing", *Available at SSRN*.

Supervision Experiences

Postgraduate projects

1. *Experimental and numerical analysis of big area additive manufacturing*, Master's Thesis, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.
2. *Numerical Simulation of Material Extrusion Process*, Master's semester project, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.
3. *Experimental and numerical analysis of 3D bio-printing*, Master's semester project, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.

Undergraduate projects

1. *3D printing and strength analysis of concrete with reinforcement*, Bachelor Thesis, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.

Award and Fellowship

- Best Paper Award Symposium Best Papers "Numerical Predictions of Bottom Layer Stability in Material Extrusion Additive Manufacturing" at Solid Freeform Fabrication 2021: Proceedings of the 32nd Annual International Solid Freeform Fabrication Symposium – An Additive Manufacturing Conference, Texas, USA, Aug 2021.

Travel Grant Grant (amount: 25,000 DKK) from Thomas B. Thriges Fond to support a Conference trip to Austin, Texas, USA, Jun 2022.

Travel Grant Grant (amount: 20,000 DKK) from Otto Mønstedts Fond to support the external research stay at Loughborough University, UK, Feb 2022.

Travel Grant Grant (amount: 10,000 DKK) from Thomas B. Thriges Fond to support the external research stay at Loughborough University, UK, Dec 2021.

Award 6th Undergraduate National Mathematics Olympiad in Khulna Division, Khulna University on November 2014. *Awarded for superior performance.*

Research Fellowship National Science and Technology (NST) Fellowship (2017-2018), Ministry of Science and Technology, Government of People's Republic of Bangladesh.

Technical Skills

Programming Language C/C++, MATLAB, FORTRAN.

Simulation Tools Flow-3D, ANSYS Fluent, OpenFoam.

Scripting Languages PHP, CSS, HTML.

Computing Proficient on Microsoft Word, Excel, Power Point, Adobe Photoshop, ImageJ.

Language Skills

• Bengali: Native or Bilingual Proficiency • English: Professional Working Proficiency • Danish: Elementary Proficiency

Personal Information

Name *first name*: Md. Tusher; *last name*: Mollah

Father's Name Md. Nurul Huque Mollah

Mother's Name Morgina Begum

Spouse's Name Kaniz Fatema

Permanent Address Mollah Bari, Champatala, Munshiganj Sadar, Munshiganj-1500, Bangladesh.

Date of Birth October 25, 1993

Nationality Bangladeshi by birth

Gender Male

Religion Islam

Martial Status Married

References

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Signature **Dr. Md. Tusher Mollah**
June, 2023