Mohammad Sanjeed Hasan

Daytona Beach, FL 32114, USA
386-843-6431
HASANM1@my.erau.edu

[Personal Website] [Google Scholar] [LinkedIn] [ORCiD]

Career Objective

Aspiring to pursue a Ph.D. in Mechanical Engineering, building on my background in applied mathematics and CFD research to contribute to advancements in fluid and thermal systems through innovative, interdisciplinary approaches.

Education

Master of Science in Mechanical Engineering — 2023-Present

Embry-Riddle Aeronautical University, Daytona Beach Campus, Florida, USA.

Master of Science in Applied Mathematics — 2016-2017

Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh.

CGPA: 3.90/4.00 **Merit Position:** 2nd (out of 14 students)

Thesis Title: *Numerical Study of Non-isothermal Flows with Convective Heat Transfer through a Curved Square Duct with Heating the Lower Wall and Cooling from the Ceiling.*

Bachelor of Science in Mathematics — 2012-2015

Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh.

CGPA: 3.67/4.00 **Merit Position:** 1st (out of 23 students)

Project Thesis Title: *A Comparative Study on Exact Solution of The Sawada-Kotera and Degasperis-Procesi Equations by (G'/G)-Expansion Method.*

Academic Awards

2019 **Dean's Award for Scholastic Excellence** - Awarded for securing the **outstanding academic achievement for the 1st position** in Department of Mathematics and Faculty of Science.

2018 **Prime Minister Gold Medal** - Awarded for securing **highest Marks/CGPA** in BSc program across Faculty of Science.

2013 Awarded as **Superior Performance in the 5th National Undergraduate Mathematics Olympiad**, (Khulna Region).

Research Interests

Computational Fluid Dynamics and Heat Transfer, Multiphase Flows, Curved Duct Flow and Heat Transfer, Phase Change Heat Transfer, Fluid-structure Interations, Numerical Modeling of Flow Transport Phenomena in Porous Media, Turbulence, Bio-fluids

Publications

Total 35 peer-reviewed articles with 319 citations (as of June 2025)

[Full publication list available here]

Selected Journal Papers

- **Mohammad Sanjeed Hasan**, Rabindra Nath Mondal, Md. Zohurul Islam, Giulio Lorenzini, *Physics of Coriolis-Energy Force in Bifurcation and Flow Transition through a Tightly Twisted Square Tube*, Chinese Journal of Physics, Elsevier, 77: 1305-1330, 2022, **SCOPUS & ISI** Indexed, **IF: 4.6**.

- **Mohammad Sanjeed Hasan**, Ratan Kumar Chanda, Rabindra Nath Mondal, Giulio Lorenzini, *Effects of Rotation on Unsteady Fluid Flow and Forced Convection in the Rotating Curved Square Duct with a Small Curvature*, FACTA UNIVERSITATIS, Series: Mechanical Engineering, 20(2): 255-278, 2022, **SCOPUS** Indexed, **IF: 11.8**.
- **Mohammad Sanjeed Hasan**, Shamsun Naher Dolon, Himadri Shekhar Chakraborty, Rabindra Nath Mondal, Giulio Lorenzini, *Numerical Investigation on Flow Transition through a Curved Square Duct with Negative Rotation*, Journal of Applied and Computational Mechanics, 7(3): 1435-1447, 2021, **SCOPUS** Indexed, **IF: 1.1**.
- **Mohammad Sanjeed Hasan**, Rabindra Nath Mondal, Giulio Lorenzini, *Physics of Bifurcation of the Flow and Heat Transfer through a Curved Duct with Natural and Forced Convection*, Chinese Journal of Physics, Elsevier, 67: 428-457, 2020, **SCOPUS & ISI** Indexed, **IF: 4.6**.
- **Mohammad Sanjeed Hasan**, Rabindra Nath Mondal, Giulio Lorenzini, *Coriolis force effect in steady and unsteady flow characteristics with convective heat transfer through a curved square duct*, International Journal of Mechanical Engineering, 5 (1): 1-40, 2020, **SCOPUS** Indexed, **IF: 2.1**.
- **Mohammad Sanjeed Hasan**, Rabindra Nath Mondal, Giulio Lorenzini, *Numerical Prediction of Non-isothermal Flow with Convective Heat Transfer Through a Rotating Curved Square Channel with Bottom Wall Heating and Cooling from the Ceiling*, International Journal of Heat and Technology, 37(3): 710-726, 2019, **SCOPUS, ISI & EiCompendex** Indexed, **IF: 0.8**.

Selected Conference Proceedings Papers

- **Mohammad Sanjeed Hasan**, Rabindra Nath Mondal, Giulio Lorenzini, *Centrifugal-Coriolis instability through a rotating curved square duct with bottom wall heating and cooling from the ceiling*, AIP Conference Proceedings, 2324, 040007, 2021, **SCOPUS** Indexed.
- **Mohammad Sanjeed Hasan**, Rabindra Nath Mondal, Toshinori Kouchi, Shinichiro Yanase, *Hydrodynamic Instability with Convective Heat Transfer through a Curved Channel with Strong Rotational Speed*, AIP Conference Proceedings, 2121, 030006, 2019, **SCOPUS** Indexed.

Computer skills (Programming Language)

Ansys APDL, Ansys FLUENT, Matlab, Maple, C, Fortran, Fidelity Pointwise

Communication Skills (Oral Presentation in conference)

20th (2017) and 21th (2019) **International Mathematics Conference**, 8th (2018) **International Conference on Thermal Engineering**, 13th (2019) **International Conference on Mechanical Engineering**

Professional and Teaching Experience

August 2024 - May 2025 **Graduate Teaching Assistant**, Embry-Riddle Aeronautical University, Daytona Beach Campus, Florida, USA.

Course Title: Modeling and Simulation for Complex Engineering Systems (ME326)

Nov 2017 - July 2023 **Senior Teacher**, **Mathematics**, Bijoy International School, Dhaka, Bangladesh. **Teacher**, **Mathematics** , Akij Foundation School and College, Manikganj, Bangladesh.

June 2017 - October 2017 **Contractual Lecturer**, Department of Mathematics and Statistics, Bangladesh University of Business and Technology, Dhaka, Bangladesh.

Course Title: 1. Calculus I, 2. Ordinary Differential Equations (ODE)

Research Experience

July 2015 to June 2017 **Research Associate** in the research project funded by Bangladesh Ministry of Education (MoEdu) entitled **Flow Instability with Convective Heat Transfer through a Rotating Curved Micro-Channel with Strong Curvature** under Prof. Dr. Rabindra Nath Mondal.

July 2017 to June 2018 **Research Associate** in the research project funded by Bangladesh Ministry of Science and Technology (MOST) entitled **Flow Transitions with Effects of Secondary Flow on Convective Heat Transfer through a Rotating Curved Channel** under Prof. Dr. Rabindra Nath Mondal.

Membership

Bangladesh Mathematical Society (Serial No: 1516)

Reviewer

European Journal of Physics - B/Fluids, Fluid Dynamics & Material Processing, International Journal of Heat and Technology (IJHT), International Journal of Applied Mechanics and Engineering (IJAME), Journal of Naval Architecture and Marine Engineering (JNAME)

References

- **Dr. James J Pembridge**, Associate Dean and Professor, Embry-Riddle Aeronautical University, Daytona Beach Campus, Florida, USA. **Email:**James.Pembridge@erau.edu
- **Dr. Rabindra Nath Mondal**, Professor, Department of Mathematics, Jagannath University, Dhaka, Bangladesh. **Email:** rnmondal@math.jnu.ac.bd
- **Md. Zohurul Islam**, Associate Professor, Department of Mathe matics, Jashore University of Science and Technology, Jashore, Bangladesh. **Email:** mz.islam@just.edu.bd