

SAJIH BIN SUJA

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Research Interests

Fluid Mechanics, CFD, Multiphase Flows, Energy Systems, Thermal Management

Professional Experience

Walton Hi-Tech Industries PLC.

August 2023 – Present

Simulation Engineer – Department of Research & Innovation – Residential Air Conditioner

Gazipur, Bangladesh

- Optimization and engineering design of centrifugal blowers and axial exhaust fans.
- Conduct computational and performance analyses of indoor and outdoor units, augmented by reliability and transportation testing to ensure optimal air conditioner functionality.
- CAD-based design, prototyping and fitting assessments of air-conditioner components.

Research Experience

Computational Fluid Dynamics Lab, KUET

2020 – 2023

Research Assistant

Khulna, Bangladesh

- Numerical analysis on porous metal foam for thermal management of high heat flux systems.
- Investigating swirling jets through numerical studies.
- Researched impact of high heat flux and thermal management of electrical components.
- Numerical computations on non-premixed methane-oxygen jet for metal melting.

Publications

Journal Publications

- **Suja, S.B.**, Pranto, M.R.I. and Ahmed, Z.U., "Swirling Jet Impingements for Thermal Management of High Concentrator Solar Cells Using Nanofluids." *International Journal of Thermofluids*, Volume 19C (2023), 100387. ISSN 2666-2027. DOI: <https://doi.org/10.1016/j.ijft.2023.100387>.

Conference Proceedings

- **Suja, S.B.**, Pranto, M.R.I. and Ahmed, Z.U., "Numerical Analysis of Swirling Jet Impingements for Thermal Management of HCPV using Nanofluids." In *ICMIEE 2022: International Conference of Mechanical, Industrial & Energy Engineering*, Khulna, 22-24 December.
- Alam, S.I., **Suja, S.B.**, and Islam, M.S., "Influence of Venturi on Heat Transfer Characteristics of Nanofluids Flowing Across Pipe." In *ICMERE 2021: International Conference of Mechanical Engineering and Renewable Energy*, Chittagong, 12-14 December.
- **Suja, S.B.**, Pranto, M.R.I., Turna, R.N. and Ahmed, Z.U., "Conjugate Heat Transfer Analysis of Different CPU Cooling Processes Using Computational Fluid Dynamics." In *ICMIEE 2020: International Conference of Mechanical, Industrial & Energy Engineering*, Khulna, 19-21 December.

Academic Credentials

Khulna University of Engineering & Technology

2017 – 2022

Bachelor of Science in Mechanical Engineering

Khulna, Bangladesh

CGPA– 3.13/4.00

Standardized Tests

Graduate Record Examination (GRE)

Total Score – 324/340, Quantitative Reasoning – 170/170, Verbal Reasoning – 154/170, Analytical Writing Assessment – 4.0/6.0.

Date Taken: November 3rd, 2022

International English Language Testing System (IELTS)

Overall Band Score – 8.0, Speaking – 8.0, Reading – 9.0, Listening – 9.0, Writing – 6.5.

Date Taken: November 3rd, 2022

Technical Skills

CAD: SOLIDWORKS, Fusion 360

CAE: ANSYS FLUENT, ANSYS CFX, Star-CCM+, OpenFOAM, SIMULIA Abaqus, ANSYS Mechanical, LS-Dyna

Languages: Python, MATLAB, C

Graphics and Rendering: KeyShot, Illustrator, Photoshop, Blender 2.9

Certifications

- **Certified SolidWorks Associate (CSWA)** – Issued by Dassault Systèmes.
- **Online Courses**
 - ENGR2000X: A Hands-on Introduction to Engineering Simulations – Cornell University (edX).
 - MATLAB Programming for Engineers and Scientists – Vanderbilt University (Coursera).
 - Excel Skills for Business – Macquarie University (Coursera).
 - Python for Everybody – University of Michigan (Coursera).

Technical Presentation

- Pranto, M. R. I., **Suja, S. B.**, “Smart and Eco-friendly E-waste recycling system”, Mechanical Festival Poster Presentation, Department of Mechanical Engineering, Khulna University of Engineering & Technology, Khulna, September 2019.

Awards

- Finalist – Aer-O-Vacx Segment – Cognizance at Indian Institute of Technology (IIT), Roorkee, 2021.
- Third Place – Poster Presentation – Mechanical Festival at Department of Mechanical Engineering, KUET, 2019.
- Runners Up - KUET Inter Department Soccer, 2017-18 Season.

Extracurricular Activities

- Organized workshops on Computational Fluid Dynamics and ”Speak Out For Engineering – SOFE, Khulna Regional Heat” as Assistant General Secretary of IMechE KUET Student Chapter.
- Led a team of four as Executive (Graphics & Content) for Ignition 2019, a national mechanical festival by KUET’s Mechanical Engineering Department.
- Manager (Student) of KUET Mechanical Department Soccer team.

References

Dr. Zahir Uddin Ahmed

Professor

Department of Mechanical Engineering, KUET

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