

Jishnu Handique

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Career Profile:

Passionate Mechanical Engineering Graduate with specialization in Thermal and Fluids Engineering. Dedicated and strongly motivated for Thermo-Fluids research.

Research Interest:

- Heat Transfer, Fluid Dynamics

Professional Experience:

- Worked as a Project Associate on “*Indo-Swiss Building Energy Efficiency Project*” at the Department of Mechanical Engineering, IIT Bhilai. (Aug-2021 to Feb-2022)
- Worked as a Junior Research Fellow on the project “*Development of Bio-mimetic Autonomous Underwater Vehicle (BAUV) for Maritime Surveillance*” funded by Naval Research Board (DRDO, Govt. of India) at the Department of Ocean Engineering and Naval Architecture, IIT Kharagpur. (Jan-2020 to Oct-2020)

Teaching Assistant:

- Involved on TA duties of *Heat Transfer Class*, *Problem Solving Class of IC Engine*, and *Engineering Drawing Lab Class* at NIT Manipur during graduate studies (2017-2019)

Voluntary Experience:

- Voluntarily involved on Jet Impingement and Film Cooling research at Dr. Dushyant Singh’s laboratory at NIT Manipur. (Aug-2019 to Dec-2019) & (Dec-2020 to April-2021)

Internship:

- FOSSEE Summer Fellowship (OpenFOAM) 2019 at IIT Bombay. (May-2019 to July-2019)
 - Case Study 1: [Link to project](#), Case Study 2: [Link to project](#), Case Study 3: [Link to project](#)

Research Work:

- **M.Tech Thesis: Numerical Investigation of Mist Jet Impingement Cooling over Cylindrical Surface**
Supervisor: Dr. Dushyant Singh (Asst. Professor), Dept. of Mechanical Engineering, NIT Manipur
[Link to summary](#)
- **Recent Project: Indo-Swiss Building Energy Efficiency Project (BEEP)**
Supervisor: Dr. Udayraj (Asst. Professor), Dept. of Mechanical Engineering, IIT Bhilai
- **Research Work on Hydrodynamics of Biomimetic Autonomous Underwater Vehicle (BAUV)**
Supervisor: Dr. Hari V. Warrior, (Professor), Dept. of Ocean Engg. and Naval Architecture, IIT Kharagpur
- **Collaborative Research Work on Hydrodynamics of Gas-Solid Fluidized Particles**
Supervisor: Dr. Subrat Kotoky (Research Scientist), JNCASR Bengaluru, India
- **Collaborative Research Work on Air-Water Mist Film Cooling**
Supervisors: Dr. Kuldeep Singh (Senior Researcher), University of Nottingham, UK; Dr. Dushyant Singh (Asst. Professor), NIT Manipur

Education:

- **Master of Technology (M.Tech):** Mechanical Engineering with specialization in Thermal & Fluids Engineering
 - **Institute:** National Institute of Technology Manipur (2017-2019), **CGPA:** 9.14/10 (**2nd Rank in Class**)
- **Bachelor of Technology (B.Tech):** Mechanical Engineering
 - **University:** The Assam Kaziranga University (2012-2016), **CGPA:** 8.55/10

Journal Publications:

- **J. Handique**, K. Singh, D. Singh, "Effects of soot deposition and slot erosion on the mist film-cooling of a flat plate in the presence of upstream ramp", *Thermal Science and Engineering Progress*, [DOI: 10.1016/j.tsep.2020.100784](https://doi.org/10.1016/j.tsep.2020.100784) [SCIE]
- **J. Handique**, "Film cooling over eroded plates for the injection of air-water mist coolant", *Iranian Journal of Science and Technology*, [DOI: 10.1007/s40997-020-00405-1](https://doi.org/10.1007/s40997-020-00405-1) [SCIE]
- C. Khangembam, D. Singh, **J. Handique**, K. Singh, "Experimental and numerical study of air-water mist jet impingement cooling on a cylinder", *International Journal of Heat and Mass Transfer*, [DOI: 10.1016/j.ijheatmasstransfer.2020.119368](https://doi.org/10.1016/j.ijheatmasstransfer.2020.119368) [SCIE]
- **J. Handique**, S. Kotoky, "A computational investigation on the effects of particle diameter and particle-particle interactions on jet penetration characteristics inside a bubbling gas-solid fluidized bed with a central jet", *Flow, Turbulence and Combustion*, [DOI: 10.1007/s10494-020-00132-2](https://doi.org/10.1007/s10494-020-00132-2) [SCIE]
- D. Singh, Udayraj, A.N. Singh, **J. Handique**, "Experimental and LES Study of Unconfined Jet Impingement on a Smooth Flat Heated Plate with Slots of Different Widths", *Experimental Heat Transfer*, [DOI: 10.1080/08916152.2022.2096153](https://doi.org/10.1080/08916152.2022.2096153) [SCIE]

Conference Publication:

- **J. Handique**, D. Singh, "Slot mist jet impingement cooling on a cylindrical surface", *International Conference on Thermal Engineering: Theory and Applications*, Gujarat, India, Vol2019 (2019): ICTEA2019

Software and Computational Skills:

- OpenFoam, Ansys (Fluent, WorkBench, ICEM CFD), SolidWorks, Matlab, Tecplot, ParaView

Language Certificates:

- Duolingo score: 120/160, TOEFL: 81/120

Trainings:

- 22 days summer training on Coke Calcination Unit at Numaligarh Refinery Limited, Golaghat, India (2015)
- 15 days summer training at General Engineering Division at CSIR-NEIST (Govt. India), Jorhat (2014)
- 15 days summer training on air brake system of Indian Railways at North East Frontier Railway Mechanical Workshop, Dibrugarh, India (2013)

Workshops:

- Assisted in organizing a workshop under "Indo-Swiss Building Energy Efficiency Project (BEEP)" at IIT Bhilai
- Attended the workshop "BEEP Vayu Pravah: A freeware Computational Fluid Dynamics (CFD) Tool" organized by The Indo-Swiss Building Energy Efficiency Project (BEEP)

Courses:

- 12-week course on "Introduction to CFD using Matlab and OpenFOAM" by Skill Lync
- 12-week course on "Matlab for Mechanical Engineers" by Skill Lync
- 12-week course on "Python for Mechanical Engineers" by Skill Lync
- 40 hrs course on "Modelling of Multiphase Flow" organized by NIT Manipur, India

Scholarships and Achievements:

- GATE Scholarship awarded by Ministry of Human Resource Development, Govt. India during M.Tech program
- Best Project Award in B.Tech awarded by Assam Kaziranga University
- Runners Up in Engineering Design Competitions organized by Assam Kaziranga University

Extracurricular Activities:

- Took initiative to form the "SAE Collegiate Club" in Assam Kaziranga University
- Volunteered in social drive to Save Rhino by joining the awareness program organized by Kaziranga University

Organizations:

- The Institution of Engineers (India) – Associate Membership
- Indian Red Cross Society – Life Membership