Adarsh K P

Post-Graduate student
Thermal Science and Engineering
Department of Mechanical engineering
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Degree/Examination	Specialization	University/Board	Year	C.P.I./Percentage
Post-Graduation	Master's in Thermal Science and Engineering	I.I.T. Kharagpur	May'23	8.36/10 (till 3rd sem)
Graduation	Bachelor in Mechanical Engineering	Mahatma Gandhi University, Kerala	2018	7.24/10
Intermediate	Bio-Science	Kerala state board	2014	93/100
Matriculation	Science	Kerala state board	2012	95/100
GATE	Mechanical Engineering	National Level	2020	797/1000

RESEARCH INTERESTS

Interested in Refrigeration and Air-conditioning technologies and their potential for improved energy efficiency and sustainability and Passionate about exploring Innovative solution in this field to reduce the environmental impact of cooling systems.

PROJECTS

Thermo-fluid-dynamics of Natural Convection around a Heated Horizontal Plate with Critical assessment of Similarity Theory.

Prof. Abhijit Guha, Indian Institute of Technology Kharagpur. **May'22- Present**

• Invoking the power of **computational fluid dynamics** to unravel the detailed thermo-fluid-dynamics of natural convection around a horizontal plate.
• Investigating the consequences of long-held assumptions used in similarity theory on describing the actual fluid physics, which appears to have never been questioned in the literature, and **CFD** simulations are carried out using **ANSYS Fluent** to address the disparities with the experimental results.

Numerical Study on Shark-Skin Inspired Wing Design. **Dec'17- May'18**

Prof Jinesh N, Rajiv Gandhi Institute of Technology Kottayam.

• Inspired by the drag-reducing properties of tooth-like denticles that cover the skin of sharks, simulation-based investigations into the aerodynamic effects of novel denticle-inspired designs placed along the suction side of an airfoil were done.
• The denticle is designed using **CATIA** and numerical analysis of smooth airfoil and shark-inspired airfoil is carried out using **ANSYS Fluent** which discovered that denticle-inspired wing design achieves simultaneous drag reduction and lift generation and is found to be better than traditional vortex generators.

Electric-Solar Powered Vehicle Design and Development. **Aug'15 – Dec'15**

• Built a single seated electric-solar powered vehicle by a team of 20 for the national-level competition **"Electric Solar Vehicle Championship (ESVC) 2016"**.
• Involved and learned the process of making a vehicle from design to final prototype including project planning and management, production, etc.
• The vehicle chassis, body, and other parts are designed using **CATIA** and **SOLIDWORKS**, Structural analysis is carried out using **ANSYS** and made using in-house facilities.

WORK EXPERIENCE / POSITION OF RESPONSIBILITY

Teaching Assistant for Gas Dynamics Laboratory. **Jan'23 - Present**

• Supervised and gave training to the fourth-year Dual degree mechanical students for conducting the Pressure measurement around a cylinder in wind tunnel.

Teaching Assistant for Applied Thermodynamics Laboratory. **Aug'22 - Dec'22**

• Gave training to the final year B.Tech mechanical students for conducting the Fluidized-Bed Experiment.

Subject Matter Expert in Mechanical Engineering | Chegg India Pvt. Ltd. **Apr'20 – Aug'21**

• Taught students across the globe and cleared their conceptual doubts in mechanical engineering subjects.

Design and Simulation Head for the Electric-Solar Vehicle Championship (ESVC) 2016 **Aug'15 – Dec'15**

• Led a team of 5 in designing and structural analyses of the vehicle chassis, body suspension systems, etc.

TRAINING

Short-term Course on Flow Visualization and Measurement Techniques at IIT Kharagpur. **Aug'22**

• Learned flow visualization using **Particle Image Velocimetry (PIV)**, **Laser Doppler Velocimetry (LDV)**, **Hot-wire Anemometry**, and **Schlieren Imaging**, and Implemented the knowledge learned from the course to visualize the vortex generation around delta wing configuration in the wind tunnel.

In-plant Training at Bharat Forge Ltd. Pune. **Jun'17 – Jul'17**

• Underwent induction training program, visited each department and observed the production line for making various mechanical components. And got practical exposure to closed die forging, open die forging, machining, heat treatment processes, quality assurance, and quality control.

Training at Central Institute of Fisheries, Nautical and Engineering. **Jul'16**

• Underwent course on ''Marine Engines and Associated Systems”and realised the challenges of a marine engineer during onboard training on a vessel, attended practical sessions on engine systems and various equipment in the vessel, and trained to assemble and disassemble the diesel engine.

Training on Solar Vehicle Design and Development **Oct’15**

• Attended workshop on ''Solar Vehicle Design and Development'' organized by **''Imperial Society of Innovative Engineers (ISIE)**''.

AFFILIATIONS / ACHIEVEMENTS

• Qualified for the dynamic round of **Asia's largest Electric-Solar Vehicle Championship (ESVC)** 2016 organized by the Imperial Society of Innovative Engineers.
• Secured All India Rank 718 among 137826 candidates in GATE Mechanical Engineering 2020.
• Secured All India Rank 9522 among 167376 candidates in GATE Mechanical Engineering 2019.
• Member of the **''Society of Automobile Engineers (SAE)''**, coordinated and participated in many events.
• Served as a **troop leader** in **Bharat Scouts and Guides** and won the **Governor's Award ''Rajyapuraskar''** in 2011.

SKILLS AND EXPERTISE

Simulation Tools: ANSYS-Fluent | ANSYS-Steady state thermal | COMSOL | SIMSCALE | OpenFOAM
Programming Languages: C | Python | MATLAB
Modeling Tools: SOLIDWORKS | ANSYS-Design Modeler, Space claim | CATIA
Other Tools: Tecplot | Engineering Equation Solver | MS Office (Word, Excel, and PowerPoint)

CERTIFICATIONS

• A Hands-on Introduction to Engineering Simulations | Cornell University **Aug’22**
• Finite Element Analysis Convergence and Mesh Independence| Coursera Project network **Jul'22**
• Computational Fluid Mechanics – Airflow around a Spoiler | Coursera Project network **Jul'22**
• CFD Simulation through a Centrifugal Pump | Coursera Project network **Jul'22**
• Introduction to Programming with MATLAB | Vanderbilt University **Jan'22**

COURSEWORKS

Refrigeration Systems | Air Conditioning and Ventilation | Fluid Mechanics | Computational Fluid Dynamics | Conduction and Radiation Heat Transfer | Thermodynamics | Experimental methods in Thermal Engineering | Computational Methods in Thermal Engineering | Convective Heat and Mass Transfer |Energy Conservation and Waste Heat Recovery | Microfluidics.