

RESUME

DURGA PRASAD DUSI

Completed M.Tech (2018-2020) in Thermal Science and Engineering,

School of Mechanical Sciences,

Indian Institute of Technology Bhubaneswar.

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ACADEMIC DETAILS:

Year	Degree/Exam	Institute	GPA/Percentage
2020	M.Tech (Thermal)	Indian Institute of Technology Bhubaneswar	8.18/10
2017	B.Tech (Mech)	Gyatri Vidya Parishad College of Engineering	78.82%
2012	Higher Secondary	Sri Chaitanya Jr. College	95.80%
2010	Secondary	Mahathi Model High School	91.50%

AREAS OF INTEREST:

Computational Fluid Dynamics, Machine Learning in Engineering Applications, Solidification and microstructure modelling

COURSES DONE:

M.Tech: Advanced thermodynamics, Advanced fluid dynamics, Computational methods in thermal and fluid engineering, Applications of linear algebra in mechanical engineering, Compressible flows, Mathematical methods for mechanical engineering.

B.Tech: C (programming language), Strength of materials, Design of machine elements, Thermodynamics and applications, Fluid mechanics and hydraulic machinery, Heat transfer, Material science and metallurgy, Production technology, Industrial management and operations research, Project management, Production planning and control, Automations in manufacturing.

M.TECH THESIS (2019-2020):

Title: Modelling of Binary Alloy Solidification using OpenFOAM

Supervisor: Dr. Anirban Bhattacharya, IIT Bhubaneswar

Description: The primary aim of the present project is to develop and implement a model for solidification of binary alloys in the open-source software OpenFOAM with a focus on capturing the effects of solute concentration and cooling rate on the melt pattern and solute segregation. For this, an enthalpy porosity based model is used. The results are compared with the ones quoted in the literature and an excellent agreement with the results in the literature were found. The set of governing equations of mass conservation, momentum conservation, energy conservation and species conservation is solved based on a pressure-based Finite Volume Method according to the SIMPLE algorithm. The model thus developed is used for simulations of the solidification process of a binary alloy in a rectangular chamber with side cooling and the effect of solute concentration, the cooling rate on the melting pattern and solute segregation is investigated. Using the same model developed, numerical simulations were carried out for the solidification of Pb-Sn alloys with different solute concentrations. Besides theoretical modelling, this project involves coding and simulation studies. Results successfully demonstrate the ability of the model in capturing solute segregation, thermo-solutal convection during the solidification process.

B.TECH PROJECT (2016-2017):

Title: planning of Raw materials and Power consumption using Operational Research techniques in VSP (RINL)

Supervisor: P. Krishna Kiran, GVP College of engineering

Description: My B.Tech project was industry based project done in Visakhapatnam Steel Plant (RINL), Visakhapatnam. The main aim of my B.Tech project is forecasting of requirement of Raw materials and Power consumption for a given quantity of Steel melt production per year. In production plan of RINL, the raw material and power consumption become the independent variables. The production of certain quantity of output requires proportionate quantity of raw materials and power supply. Therefore, there must be an efficient planning of raw materials and power in order to improve its productivity. For this problem, using Regression analysis we have found out a model for the forecasting and for this we have used MATLAB software and formulated a model. And the final results obtained were in almost close agreement with the actual ones that were used by RINL and our work has helped them in future forecasting.

TECHNICAL SKILLS:

Programming Languages: C, FORTRAN, Python

Softwares: ANSYS Fluent, ANSYS structural, MATLAB, OpenFOAM

Basic Knowledge on Machine Learning Applications in Engineering.

OTHER PROJECTS:

- Modelling and simulation of Laminar and Turbulent flow over a rotating cylinder
- Prototype of an end effector using medical waste
- Prototype of an all-terrain Rover

INDUSTRIAL TRAINING:

- In the department of Design and Engineering, Visakhapatnam Steel Plant (RINL, June, 2015)
- In the department of Manufacturing od U & V bolts, SVD AGRO industries, Vijayawada (June, 2016)

POSITION OF RESPONSIBILITY HELD:

- Served as a Teaching Assistant [Jan 2020 to April 2020] under Dr. S. Mullick for Introduction to manufacturing processes lab for undergraduate students.
- Served as a Teaching Assistant [Jan 2020 to April 2020] under Dr. M.K Das for under-graduate course IC Engines.
- Served as a Teaching Assistant [Jul 2019 to Dec 2019] under Dr. V. Panduranga for Introduction to manufacturing processes lab for undergraduate students.

AWARDS AND HONOURS:

- **HRD Scholarship:** Received post-graduation scholarship based on GATE rank.
- Winner in Robellion event in VIVAAN 2K15 under ASME Student Chapter.

EXTRA CURRICULAR ACTIVITIES:**LITERARY:**

- Represented our college in Tech-Fest conducted as a part of VISAKHA UTSAV 2K15.
- Participated in LEAD PRAYANA 2015, a Leadership Journey of 16days, Conducted by Deshpande Foundation.

TECHNICAL:

- Organising member of The 64th congress of ISTAM-2019
- Organising member and Technical Lead, VIVAAN 2017
- Participated in BAJA SAEINDIA competition
- Winner in Robellion event in VIVAAN 2K15 under ASME Student Chapter

SOCIAL:

- Worked as an active volunteer in district Rotaract club
- Worked as an active volunteer of KEN Foundation

OTHER INTERESTS:

- Cooking
- Movies and music
- Long drives