

Resume

JOEL MATHAI

📍 HYDERABAD

✉ mathai.joel@gmail.com

📞 91 8639191546

JUNIOR SIMULATION ENGINEER (CAD/CFD)

Analyze the problem statement, prepare the strategy, pre-calculation, use Fluent, CFX, ICEM CFD, and CATIA V5 for pre-processing and solving the DE's, evaluate the results as per requirements, post-calculation and report generation. Currently working at AAPL Hyderabad, TS.

EDUCATIONAL BACKGROUND

EXAMINATION	INSTITUTE	YEAR	PERCENTAGE/CGPA
MTech CAD/CAM	VIT University	2017	6.48
B.E Mechanical engineering	Sathyabama University	2014	7.19
H S C	SBOA Matric Higher Secondary School	2010	68
CBSE	SBOA School & Junior College	2008	63.5

PROFESSIONAL EXPERIENCE

DESIGNATION	COMPANY NAME	DATE OF JOINING	LOCATION
Junior Simulation Engineer(CAD/CFD)	Airframe Aero Design Private Limited	October 7 th ,2017	Hyderabad, Telangana

CERTIFICATIONS

CERTIFICATION ON	INSTITUTE
CATIA	NATIONAL SMALL SCALE INDUSTRY CORPORATION, HYDERABAD
ANSYS	CENTRAL INSTITUTE OF TOOL DESIGN, HYDERABAD

INTERNATIONAL PUBLICATION:

Published research work on topic "Processing, Microstructure and Mechanical Properties of Al₂O₃ and SiC Reinforced Magnesium Metal Matrix Hybrid Composites" Karthick E ,Joel Mathai, Michael Tony J ,Senthil Kumar Marikkannan (2017) on the journal "ELSEVIER" **Materials Today Vol 4, Issue 6 2017 Pages:6750-6756**
<https://doi.org/10.1016/j.matpr.2017.06.451>

PAPER PRESENTATION:

Presented research paper at **International Conference and Expo on Magnesium (iMagCon 2016)** organised by **Indian Institute of Metals, Chennai Chapter and The School of Mechanical and Building Science, VIT University, Chennai** on the paper titled **“Processing, microstructure and mechanical properties of Al₂O₃ and SiC reinforced Magnesium matrix hybrid composites”**

KEY SUBJECTS AND SOFTWARE

FLUID MECHANICS	CATIA	ICEM CFD
THERMODYNAMICS	ANSYS FLUENT	MS EXCEL
STRENGTH OF MATERIAL	ANSYS CFX	MS WORD

RESEARCH PROJECTS

AAPL, (CAD/CFD):

“Analysis of Electrochemical Micro Machining to study the characteristics of the flow of electrolyte over the tool”

In this research work, analytical simulation of various phenomena occurring in the electrochemical micro machining process by varying the parameters such as velocity of electrolyte, potential difference, inter electrode gap has been done to optimize the most efficient boundary condition to attain maximum material rate on the work piece. Simulations have been carried out in ANSYS-CFX. Parameters such as Current density, pressure, flow behavior of Electrolyte and material removal rate of the work piece has been observed for different cases.

“CFD Analysis of Heat Transfer Performance of Flat Plate Solar Collector”

In this study, an attempt is made to analyze the solar collector using the Computational Fluid Dynamics (CFD) to simulate the solar collector for better understanding of the heat transfer capabilities of the collector. In the present work, Fluid flow and heat transfer in the collector panel due to the solar radiation for different diameter of the riser pipes and for optimizing the range of mass flow rate of the water at the inlet are studied. The conjugate heat transfer phenomenon between collector and water is modelled using ANSYS-CFX. The post processing of the study includes temperature, pressure contour and calculating the temperature at the outlet.

“CFD Analysis of Solar Distillation using porous double layer structure”

In this research work, we are studying the effect of polyurethane foam for different thickness and carbon foam with graphite plate immersed in water and subjected to radiation of to study the effect of vapor generation to observe the effect of solar distillation. We are comparing the different cases with the effect of volume fraction of steam generated in the air domain. The simulations was carried out in ANSYS Fluent 15.0 with the use of multi-phase model to study the effect of steam generated in the distillation process.

“Optimizing the design of Vortex Tube Cooling using CFD”

In this study, we are studying the effect of different variations in the design of the swirling chamber to get the optimum cooling from the cold side of Vortex tube. The cases have been varied for helical holes, straight hole and by varying the number of nozzles to get the optimized cooling effect. The design has been carried out in CATIA V5. The fluid domain has been extracted and simulated in ANSYS Fluent 15.0 for steady state condition. The streamlines, temperature and pressure contours have been observed along with the temperature at the cold and hot outlet to optimize the design of the vortex tube.

M.Tech:

“Processing, microstructure and mechanical properties of Al₂O₃ and SiC reinforced Magnesium matrix hybrid composites”

This project is conducted to investigate the material properties of magnesium alloy which is used as the base metal where alumina (5%) and silicon carbide (3-8%) is used as the reinforcing ceramic material. The composite samples is fabricated by powder metallurgy process and sintered by microwave sintering for a particular temperature for characterization study such as optical microstructure, micro hardness-ray diffraction, Scanning electron microscope and compression tests were conducted on the sample.

“Microstructure, mechanical and fracture properties of Alumina and Silicon Carbide dispersion strengthened Aluminum matrix”

This project is conducted to investigate the material properties of aluminum alloy which is used as the base metal where alumina (5%) and silicon carbide (0-8%) is used as the reinforcing ceramic material. The composite samples is fabricated by powder metallurgy process and sintered by microwave sintering for a particular temperature for characterization study such as optical microstructure, micro hardness-ray diffraction, Scanning electron microscope and compression tests were conducted on the sample.

“Experimental and analysis of energy absorption of square column under quasi static and impact loading”

This project is conducted to study the behaviour of aluminium hollow box under quasi static loading and low-velocity drop weight impact loading and compare with the aluminium honeycomb filled hollow box under the same loading condition to study the crashworthiness parameters of the considered samples. From the project, we come to the conclusion that with addition of materials there is increase in the energy absorption of the samples.

B.E :

Funded by **Indira Gandhi Centre of Atomic Research (IGCAR), Kalpakkam, India**

“Surface modification of flow test model with rough and punched surfaces.”

Elaborate study to attain uniform and constant cooling in the fast breeder reactor with the help of punched spillway profile and wooden profile coated with emery sheet. Design of Spillway profile, experimental analysis of the two-spillway profile, hardness testing, and computerized fluid dynamics analysis from the measured values from the experiment.

LANGUAGE SKILLS

- ENGLISH: Overall IELTS Score-**6.5**(Listening-7.5, Speaking-7.0, Writing-6.5, Reading-5.5)
- GERMAN: German Language A1 exam-**66/100**
- FRENCH: 7 years of Academic learning
- MALAYALAM: Fluency of Spoken Malayalam, Mother tongue
- TAMIL: Fluency of Spoken Tamil
- HINDI: 5 years of academic learning
- Telugu-Fluency of spoken Telugu

PERSONAL INFORMATION

- Date of birth : 23rdMarch 1993
- Address : Sindhu heights, Gayathri nagar borabonda,Hyderabad-500018
- Marital status : Single
- Hobbies : Listening Music, Travelling, Jogging, Sports, Reading news.

I hereby declare that the above information is true to my knowledge.

DATE :
SIGNATURE: JOEL MATHAI

