

Chamind E C

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RESEARCH INTERESTS

My research interest is in the area of composites, additive manufacturing and advanced techniques in material processing. The composite processing, characterisation and the rise of new compositions with the inclusion of hybrid, nano, micro reinforcements had changed the overview of advanced lightweight materials and thus increased its wide area of applications. Such increasing reach is making the demand for more research activities and analysing measures more stringent than ever. Failures and anomalies in these experimental research can now have enormous cost and serious time consequences. On the other hand, the dramatic increase in heterogeneity of reinforcement addition or hybrid additive manufacturing and innovations in material processing, characterisation techniques are making composite preparation ever more interesting.

Investigating the principles underlying the design and implementation of such advanced techniques including the selection of new composition for multifunctional composites, the study of chemical reactions and the possibilities of preparing corrosion resistant composites, increasing the bonding and properties of composites for specific applications are the general goals of my research. How to design a general system of processing applicable for all groups of composition and materials, which will be the most appropriate style of manufacturing to be followed for specific applications, How to minimise the cost of experimenting by inclusion of modelling and simulation, How to utilise the waste materials in composite and metallurgical applications, are the central questions that drive most of my research thoughts. It actually started from by graduate level project as it is related with the incorporation of lightweight materials having high strength and impact resistance for the exact fulfilment of that application. That pushed me to explore more in material science and found it interesting to carry out more research.

EDUCATION

2020 **M.Tech in Manufacturing Systems Management** (CGPA: 8.57)

Government Engineering College Thrissur, APJ Abdul Kalam Technological University, Kerala, India

Modules include: Advanced Materials for Manufacturing And Processes, Advanced Manufacturing Systems, Research Methodology, Modelling And Analysis Of Manufacturing Systems, Manufacturing Systems Management Lab, Computational Laboratory, Advanced Operations Management, Total Quality Management, Integrated Product Development, Strategic Management, Enterprise Resource Planning, Management Information Systems.

2018 **B.Tech in Production Engineering** (CGPA: 8.21)

Vidya Academy of Science and Technology, University of Calicut, Thrissur, Kerala, India

Modules include: Metallurgy and Material Science, Machining of Materials, Engineering Materials, Metal Casting, Metal Forming, Welding and Allied Process, Computer Integrated Manufacturing, Metrology and Instrumentation, Mechanics of Solids, Computational Methods in Engineering, Operations Research, Industrial Automation, Design of Machine Elements, Tool Design, Energy Management, Environmental Science, Material Testing Lab, CAD/CAM Lab, Manufacturing Science Lab, Machine Tool Labs, Mechanical Engineering Workshops.

TECHNICAL SKILLS

Competent in Autodesk Autocad, Autodesk Inventor.

Moderate knowledge in C programming, LAMMPS, SPSS

Other basic skills include, Mastercam, PTC Creo, OVITO

OTHER COMPUTER SKILLS

Microsoft Office and LaTeX

ENGLISH FLUENCY

IELTS Score of 7/9

WORK AND RESEARCH EXPERIENCE

Oct 2022 – Present	Assistant Professor –Department of Mechanical Engineering, JCET, Kerala, India
Dec 2021 – July 2022	Lecturer – Government Polytechnic College Kunnankulam, Thrissur, Kerala, India
Sept 2018 – Mar 2021	Application Engineer – Z’AKSIS Technological Solutions, Calicut, Kerala, India
Jun 2017 – Sept 2018	Teacher (Part time) – Caliber Tuition Center, Thrissur Dist, Kerala, India

PROJECTS

Preparation and Characterization of AZ91D Magnesium Composite with Hybrid Nano Reinforcements

This project was carried out during Masters at Government Engineering College Thrissur, under the guidance of Prof. Anil Rajagopal K P. This work focused on preparing a composite of AZ91D Mg with unique composition of hybrid reinforcements TiB_2 (titanium boride) and Y_2O_3 (yttrium oxide). The work aimed to improve the ductility of the composite without compromising the yield properties. Parent material characterization, nano reinforcement preparation, reinforcement characterization and simulation of the new composite was made using LAMMPS and the results were generated using OVITO and Matlab.

Literature Review on Preparation and Characterization of Magnesium Matrix Composites

This work was done during Masters at Government Engineering College Thrissur, under the guidance of Dr. Satish.K.P. The aim of the work was to lead a survey on the evolvement of different processes and the processing parameters of composite preparations and the change in characterization of the composites with the changes applied especially in the case of magnesium composites.

Roller Barrier System for Highway Dividers and Guardrails

This project was carried out during Bachelors at Vidya Academy of Science and Technology, under the guidance of Dr. Skariya P.D. The main objective of the project was to improve road safety and enhance the advancements in safety measures. The RBS helps to reduce the disasters causing by accidents in high speed conditions. Special alert systems were introduced to report the accidents. Miniature model was created for explaining the working of the system. Cost analysis of the system was also carried out. The project also aimed to take further research on investigating the most apt material that can be engaged as the rollers and also as the rails for support as the materials need to possess specific properties like impact load resistance, ductility, and strength.

CONFERENCE AND PRESENTATIONS

- [1] Presented a paper titled “Advanced Techniques in Energy Production using Renewable sources-Review” in International Conference on Advanced Functional Materials 2017 (ICAFM’17) at ADHI College of Engineering and Technology, Kanchipuram, Tamil Nadu, India
- [2] Presented a paper titled “Processing of Advanced Lightweight Materials – Review” in National Conference on Latest Trends in Mechanical Engineering (NCLTME 2017) at NSS College of Engineering, Palakkad, Kerala, India
- [3] Presented a paper titled “Conventional Micro Machining Processes : Micro Milling, Micro Drilling, Micro Turning – Review” in KETCON 2019 at Government Engineering College Thrissur, Kerala, India
- [4] Taken a seminar on “Ethics in Engineering” in National Seminar on Ethics & Transdisciplinaries at Vidya Academy of Science & Technology, Thrissur, Kerala, India.
- [5] Participated in the International Conference on Discrete and Applied Mathematics (ICDAM 2020) organized by the Centre for Studies in Discrete Mathematics (CSDM), Vidya Academy of Science and Technology, Thrissur, Kerala, India, in association with Kerala Mathematical Association (KMA)

WORKSHOPS

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| 2018 | Attended a workshop on “Future of Learning” – conducted by Dr. Balasubramanian, Former Director, CBSE at the IDA connect workshops at DIDAC India 2018 |
| 2018 | Attended a workshop on “Transforming Teaching – Learning through Big Data Analysis” – conducted by Education Quality Foundation of India (EQFI) at the IDA connect workshops at DIDAC India 2018 |

- 2018 Attended a workshop on "Automobile and Engine Mechanics" – conducted by Robosapiens India at Indian Institute of Technology Madras, India
- 2018 Attended a Workshop on "Industrial Automation" conducted by Z'AKSIS Technological Solutions at Vidya Academy of Science and Technology, Thrissur, Kerala, India
- 2017 Participated for a Pre-Placement Orientation Programme conducted by ICT Academy of Kerala at Vidya Academy of Science and Technology, Thrissur, Kerala, India
- 2016 Completed a Training Workshop on "Power Communication" conducted by Vertical Eye at Vidya Academy of Science and Technology, Thrissur, Kerala, India

IN-PLANT TRAINING

Steel and Industrial Forgings Ltd, Athani, Thrissur (2018)

7-day training in Steel and Industrial Forgings Ltd, Athani, Thrissur , Kerala. The field training gave me an insight into the processes involved in the manufacture of steel. I interacted with the employees and learned about their role in running the organization. From the training, I was able study the process design and flow, along with the functioning of different departments and their equipments. . Also I learned about the importance of quality check and how it is carried out.

Teknia Technologies, Madukkarai, Coimbatore (2018)

7-day training in Teknia Technologies, Madukkarai, Coimbatore. The training was interactive which helped me in understanding the detailed process of building special purpose machineries, the material selection for each applications and their property variations. It helped us in analyzing, studying and differentiating the processing units and equipment present in this plant from others. The technicians helped me to understand more about the material treatments before assembly of the machines.

OTHER ACTIVITIES

- Registered Yoga Teacher** Registered yoga teacher affiliated under Yoga Alliance (Registry ID: 353984)
- Kalaripayattu Trainer** Certified Kalaripayattu trainer from Kerala, India
- Chairman (2018)** Served as the College Students Senate Chairman for the academic year 2018 at Vidya Academy of Science and Technology, Thrissur, Kerala, India
- College Ambassador (2018)** Served as the College Ambassador for Vidya Academy of Science and Technology, Thrissur, Kerala, India and helped in enrolment of students during the Special Summary Revision of Electoral Roll conducted by the Election Commission of India
- Secretary (2015 - 2017)** Served as the College Magazine Committee Secretary over a period of 2 years at Vidya Academy of Science and Technology, Thrissur, Kerala, India

PERSONAL

Born on August 12, 1996, in Thrissur, Kerala, India, Male, Single.

Languages: Malayalam, English, Hindi, Basic Tamil.

Hobbies: Practicing Kalaripayattu, Playing volleyball, Travelling, Crafting.

REFERENCE

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