



**MANIPAL INSTITUTE OF TECHNOLOGY**  
**MANIPAL**  
*(A constituent unit of MAHE, Manipal)*



# Flying Wheel

Annual Newsletter

January 2022 | Vol 4 | Issue 1



**Department of Aeronautical and Automobile Engineering**

**MANIPAL INSTITUTE OF TECHNOLOGY**

MAHE, Manipal - 576104

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<https://manipal.edu/mit/department-faculty/department-list/aeronautical-and-automobile-engineering.html>

## Vision

**"Excellence in Education of Aeronautical and Automobile Engineering fortified through Innovation and Teamwork"**



## Mission

- **M1:** Educate students professionally to face societal challenges.
- **M2:** Provide a conducive environment for learning, reinforced with the principles of Aeronautical and Automobile Engineering.
- **M3:** Promote Creativity and nurture Teamwork.

## Program Educational Objectives

- **PEO 1:** Recognize the need for innovative product necessary for survival, safety and comfort of the society and adapt to technological innovations.
- **PEO 2:** Apply modern computational, analytical and simulation tools and the latest techniques to address the challenges faced in automobile and aeronautical engineering streams.
- **PEO 3:** Communicate effectively and convey ideas using innovative engineering tools and demonstrate leadership skills.
- **PEO 4:** Get employed as successful engineers in automobile and aeronautical industries, become entrepreneurs and pursue higher studies.
- **PEO 5:** Practice professional ethics, work in multicultural environments, promote social harmony, engage in community service and contribute to improve and sustain the green environment.



## Academics

- The Department of Aeronautical and Automobile Engineering offers 2 UG (**Aeronautical Engg. and Automobile Engg.**) and 4 PG (**Avionics, Defence technology and Automobile Engg., Modelling and Simulation (2022-2023)**) courses.
- The Department of Aeronautical and Automobile Engineering courses are NBA accredited for 3 years.

## Message From HOD



**Dr. Dayananda Pai K**  
Professor & Head

I am highly elated that the Department of Aeronautical and Automobile Engineering is launching the Volume 3 of its much awaited newsletter in January 2022.

I personally and on behalf of our department congratulate new leads of MIT, Dr. (Cdr) Anil Rana and Dr. Somashekhara Bhat, Director and Joint Director respectively. We assure our full cooperation and support in their endeavors to uplift MIT to the higher level with their vast experience and expertise. We also place our acknowledgement and gratitude to Dr. Srikanth Rao, Dr. B. H. V. Pai and Dr. Satish Shenoy B for all timely guidance and assistance during their tenure as director MIT, joint director MIT and HOD of AAE in the smooth administration of our department and keeping Mighty MIT always in limelight with their innovative and future looking administrative skills and capabilities. I congratulate the editorial team for their commendable efforts in compiling and presenting this issue!

As the Head of the Department, I wish the very best to all the students, faculty and staff and congratulate all passing out graduates and postgraduates of 2021 and wish success in their careers. I also welcome the new batch of students joining our family. Hope the pandemic will end very soon and we will be able to work with personal interaction in physical mode with all vibrancy.



Dr. Padmaraj NH, Assistant Professor-Senior Scale, successfully defended his thesis titled “Fatigue life analysis and erosion behavior of glass fiber reinforced epoxy composites in marine environment” on 11/10/2021.

Guide: Dr. Dayananda Pai K, Co-Guide: Dr. Vijaya M Kini



Dr. Thara Reshma I. V, Assistant Professor, successfully defended her thesis titled “Weak shock wave reflections and Transitions” on 20/01/2022.

Guide: Dr. G Rajesh

Home University: Department of Aerospace Engineering, IIT Madras.



Dr. Pramod Salunkhe, Associate Professor, have been allotted the MAHE seed grant for his proposal titled "Active and Passive Cooling of Lithium-Ion Battery of an Electric Vehicle".

### Fresh Face of the Department



Dr. (Cdr), Anil Rana, Professor & Director, has research interests in the field of Reliability Engineering, maintenance engineering management, stochastic petrinets, machine learning, fuzzy and neuro-fuzzy applications in the field of maintenance engineering.



Dr. Manjunath Shetty, Assistant Professor hails from Udupi and has nanomaterials, material science, Lithium ion batteries and materials characterization as his areas of expertise.

- 🏗️ The Inauguration ceremony of the new Master’s Program “Defence Technology”, offered by The Department of AAE, MIT was held on 22nd November 2021. The details on the new PG program can be accessed at <https://manipal.edu/mit/program-list/mtech/MTech-Defence-Technology.html>
- 🏗️ The Department of Aeronautical and Automobile Engineering faculty members have published 36 research articles in various Scopus Indexed journals and also presented in several International Conferences.

Department has organized a five-day online Faculty Development Programme on "Lighter-than-Air Systems" sponsored by AICTE ATAL on Dec 13-17, 2021.

FDP Coordinator:



Mr. Manikandan M.  
Assistant Professor- Sr. Scale



Dr. Vishnu G Nair, Assistant Professor -Sr. Scale, has completed his post-doctoral research at the University of Liege Belgium. He was part of the Einstein Telescope Project which is a collaborative project of several European universities, research centers, and private companies along with funding from the European Union.

Dr. Mohammad Zuber, Associate Professor, and his teams were the top 5 teams (finalists) in the 4th Annual National Conceptual Aircraft Design Competition (NACDeC IV), organized by Aeronautical Society of India (AeSI). They developed a Blended Wing, Vertical Take-off & Landing Air-taxi, with a novel control surface less thrust vectoring-based design for easing Indian urban



The department has received Royal Enfield Classic 350 two-wheeler from the company for academic and research activities.



PhD Awarded

Dr. Sojan Andrews Zachariah: Experimental and numerical investigation into the effect of low velocity impact response and damage morphology in hybrid composites (15 Nov 2021).

Guide: Dr. Dayananda Pai K, Co-Guide: Dr. Satish Shenoy B

Aravind Karthik VII Sem, has secured an internship offer from the prestigious Space Transportation and Systems Engineering Laboratory, Kyushu University, where he will be working on high fidelity algorithms for AI assisted CFD in High Speed flows under Prof Hideaki Ogawa.



Archit Bapat, Aravind Karthik, Paree Navet and Reshma Sett, VII sem students were the top 5 teams (finalists) in the 4th Annual National Conceptual Aircraft Design Competition (NACDeC IV), organized by Aeronautical Society of India (AeSI). They developed a Blended Wing Vertical Take-off & Landing Air-taxi, with a novel control surface less thrust vectoring-based design for easing Indian urban commutation.

Mr. Hardik Narula, B.Tech. Automobile Engineering Batch of 2017 visited the MIT Manipal Campus and discussed the challenges and scope in EVs and HEVs in the coming decade. Hardik is one of the founding partners of Eclectech Power Packs LLP, which provides Energy Storage and Battery Management Solutions to suit different applications- Solar Energy Storage, Medical Devices, Electric Vehicles, specializing in the Li-ion batteries.

Mr. Uday Bhat, Alumni of MIT, visited the department on Exploring possibilities on MIT Collaboration with e-Mobility Startup NeuWheel Mobility Solutions to suit different applications- Solar Energy Storage, Medical Devices, Electric Vehicles, specializing in the Li-ion batteries.



Mr. VIVASWAN SINHA has been offered an admission to the Joint M.Tech /MCP-PhD programme in Aerospace Engineering at IIT Kharagpur.

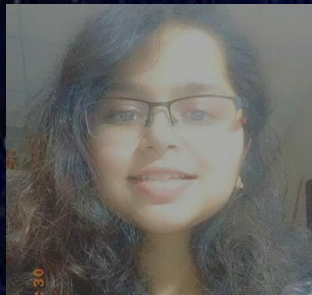
Mr. SUMIT KUMAR has been offered an admission to the MTech programme in Aerospace Engineering at IIT Kanpur.





Ms. Nishant Yala has been offered an admission Oxford Brooks University, for MSc in Motor Sport Engineering.

Ms. Mary Samuel has been offered an admission Cranfield University, for MS in Manufacturing Engineering Technology.



Ms. Aditi Bhat has been offered an admission in ISAE ENSMA University, for Master of Science in Aeronautics and Space - track Aeronautical Mechanics and Energetics (AME).

Ms. Gathra Kongalla has been offered an admission in MSc Automotive Engineering with Electric Propulsion (full-time) at University of BATH.



Mr. Harish Vishwajit Pawar has been offered an admission in MS at Columbia University's Fu Foundation School of Engineering and applied science.



Mr. Utsav Baliga, 2nd Year, M.Tech Avionics has been offered an admission in Dual Degree MS at Cranfield University.



Mr. Mirza Faizaan, Cotutelle PhD Student, working on "Natural fibre hybrid composite for all-weather UAV application".

Guide: Dr Satish B. Shenoy & Dr Claudia Creighton  
Co-Guide: Dr Chandrakant R Kini & Dr Srinivas Nunna.

Home University: Department of AAE, MIT, MAHE.

Host University: Institute for Frontier Materials, Deakin University, Victoria, Melbourne, Australia.



**Mentor**

Dr. (Cdr) Anil Rana  
Professor & Director, MIT

**Chairman**

Dr. Dayananda Pai K  
Professor & Head, AAE

**Editor in Chief**

Dr. Mahesha G T



**Sub Editors**

Dr. Sriharsha Hegde

Dr. Ravishankar Baliga B

Dr. Padmaraj N H

Mr. Anand Pai

Dr. Navya Hegde



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**Today a READER. Tomorrow a LEADER.**