

Dr. Manikandan Murugaiah

CONTACT INFORMATION

Aerospace Engineering Department, School of Aerospace Engineering, Ramaiah Institute of Science and Management (Deemed-to-be University), Bengaluru – 576104, Karnataka, India.
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URL: https://rism.org.in/schools/school-of-aerospace-engineering

RESEARCH PROFILES AND IDENTIFIERS

Google Scholar: http://surl.li/mkedx
Scopus ID: 57214461724
ORCID iD: https://orcid.org/0000-0002-0798-962X
Web of Science iD: ABG-8338-2021
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AREA OF EXPERTISE

- **Aircraft Design:** Design and Development of Lighter-Than-Air Systems, Conceptual design of Unmanned Aerial Vehicles.
- **Aircraft Performance:** Performance analysis of Lighter-Than-Air Systems, Transport Aircraft, and Unmanned Aerial Vehicles.
- **Optimization:** Multi-disciplinary design optimization of complex engineering and real-life problems using stochastic and evolutionary optimization methods and surrogate Modelling.

PROFESSIONAL QUALIFICATION

- **Ph.D. in Aerospace Engineering** Indian Institute of Technology Bombay, Mumbai, India, 2022.
  - **Thesis:** Design Optimization of Tri-Lobed Lifting-Body Dynastat Airships
- **Master Degree in Astronomy and Space Engineering** Manipal Institute of Technology, Manipal, India, 2013.
  - **Thesis:** Sizing, Sensitivity Analysis, and Technical Feasibility of Aerial Robots for Planetary Exploration
- **Bachelor Degree in Aeronautical Engineering** MLR Institute of Technology, Jawaharlal Nehru Technological University (JNTU), Andhra Pradesh, India, 2009.

– **Thesis:** Structural Analysis of Isotropic and Composite Plates with a Circular and Elliptical Hole Using ANSYS

EMPLOYMENT HISTORY

Current:

Member of the Faculty, Aeronautical Engineering Department, MIT, Manipal.

Lecturer: 10th December 2009 to 30th March 2010

Assistant Professor: 1st April 2010 to 4th July 2016

Senior Assistant Professor: 5th July 2016 onwards till date

Previous:

Aeronautical Engineering Department, CM Engineering College, Secunderabad.

Assistant Professor: 15th July 2009 to 3rd December 2009

COURSES TAUGHT

- Aircraft Design
- Airship Technology
- Engineering Design Optimization
- Aircraft Performance
- Flight Dynamics
- Aerodynamics
- Introduction to Aerospace Engineering
- Aircraft Propulsion
- Aircraft Structures
- Spaceflight Mechanics
- Helicopter Engineering
- Unsteady Aerodynamics
- Gas Dynamics
- Space Mission Analysis and Design
- Numerical Computation Using MATLAB
- Aircraft Systems Engineering
- Systems Modeling Using SIMULINK
- Fluid Dynamics
- UAV Design

SOFTWARE EXPERTISE

- MATLAB®
- SIMULINK®
- ANSYS APDL and Fluent®
- OpenFOAM®
- SOLIDWORKS®
- LaTeX®
- MATHEMATICA®

THESIS SUPERVISION

Undergraduate Level

Number of Students: 52
Description: Supervised 52 undergraduate students on various aerospace-related projects, providing guidance and mentorship throughout their research and thesis work.

Postgraduate Level

Number of Students: 9
Description: Mentored and guided 9 postgraduate students in conducting advanced aerospace-related research, assisting them in their thesis projects.

Ph.D.

Number of Students: 2
Description: Co-supervised and guided 2 Ph.D. students in conducting advanced fluid dynamics-related research.

RESEARCH OUTPUT/PUBLICATIONS

Journals

[1] **Manikandan, M.**, & Pant, R.S. (2019). Design optimization of a tri-lobed solar-powered stratospheric airship. *Aerospace Science and Technology*, 91, 255-262.
DOI: https://doi.org/10.1016/j.ast.2019.05.016
Impact Factor: 5.8

[2] **Manikandan, M.**, & Pant, R.S. (2021). A comparative study of conventional and tri-lobed stratospheric airships. *The Aeronautical Journal*, 125(1290), 1434-1466.
DOI: https://doi.org/10.1017/aer.2021.24
Impact Factor: 1.6

[3] **Manikandan, M.**, & Pant, R.S. (2021). Research and advancements in hybrid airships—A review. *Progress in Aerospace Sciences*, 127, 100741.
DOI: https://doi.org/10.1016/j.paerosci.2021.100741
Impact Factor: 16.2

[4] **Manikandan, M.**, & Pant, R.S. (2021). Multidisciplinary design approach for solar-powered tri-lobed HALESA. *Energy Conversion and Management*, 245, 114616.
DOI: https://doi.org/10.1016/j.enconman.2021.114616
Impact Factor: 10.9

[5] **Manikandan, M.**, Vaidya, E., & Pant, R.S. (2022). Design and analysis of hybrid electric multi-lobed airship for cargo transportation. *Sustainable Energy Technologies and Assessments*, 51, 101892.

DOI: https://doi.org/10.1016/j.seta.2021.101892
Impact Factor: 7.0

[6] Akshay Gangadhar, **Manikandan, M.**, Dushhyanth, R. & Dimitri, N. Mavris (2022). Conceptual Design and Feasibility Study of Winged Hybrid Airship. *Aerospace, MDPI*, 9(1), 8.
DOI: https://doi.org/10.3390/aerospace9010008
Impact Factor: 2.2

[7] Sai Yashwanth, K., Anand, Pai & **Manikandan, M.** (2022). Scope of Carbon Fibre-Reinforced Polymer Wheel Rims for Formula Student Racecars: A Finite Element Analytical Approach. *Journal of The Institution of Engineers (India): Series C*.
DOI: https://doi.org/10.1007/s40032-022-00808-w
Impact Factor: 0.349

[8] **Manikandan, M.**, Darpan F. Theng, Tabrej Khan, Tamer A. Sebaey and Balbir Singh (2022). Hybrid Electric Powered Multi-Lobed Airship for Sustainable Aviation. *Aerospace, MDPI*, 9(12), 769.
DOI: https://www.mdpi.com/2226-4310/9/12/769
Impact Factor: 2.2

[9] Tripathi, M., **Manikandan, M.**, Pandey, P. & Pant, R.S. (2023). Drag Mitigation of Tri-lobed Airships Through Aerodynamic Comparison with Conventional Single-Lobed Hull. *Journal of Aerospace Engineering*, 36(6).
DOI: https://doi.org/10.1061/JAEEEZ/ASENG-4793
Impact Factor: 1.6

[10] **Manikandan, M.**, Ruchit, R.S., Pughazendi, P., Balbir, S. & Pant, R.S. (2024). A Parametric Design Approach for Multi-lobed Hybrid Airships. *The Aeronautical Journal*, 128(1319), 1-36.
DOI: https://doi.org/10.1017/aer.2023.37
Impact Factor: 1.6

[11] Kanak Agarwal, Vedant Vijaykrishnan, Dyutit Mohanty & **Manikandan M.** (2024). A Comprehensive Dataset of the Aerodynamic and Geometric Coefficients of Airfoils in the Public Domain. *Data, MDPI*, 9(5), 64.
DOI: https://doi.org/10.3390/data9050064
Impact Factor: 2.0

[12] Balbir Singh, Kamarul Arifin Ahmad, **Manikandan, M.**, Noorfaizal Yidris, Adi Azriff Basri & Raghuvir Pai (2024). Quasi-steady Aerodynamic Modeling and Dynamic Stability of Mosquito-inspired Flapping Wing Pico Aerial Vehicle. *Frontiers in Robotics and AI*, 11.
DOI: https://doi.org/10.3389/frobt.2024.1362206
Impact Factor: 3.0

[13] Swarna, J.B., Lavanya, B., Vijaya, K., & **Manikandan, M.** (2024). Effect of Arrhenius Activation Energy on Thermally Radiant Williamson Nanofluid Flow over a Permeable Stretching Sheet with Viscous Dissipation. *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences*, 118, 181-195.
DOI: https://doi.org/10.37934/arfmts.118.2.181195

[14] Jyotsna, B.K., **Manikandan, M.** & Balbir Singh (2024). A Comprehensive Survey of Open-Source Tools for Computational Fluid Dynamics Analyses. *Journal of Advanced*

Research in Fluid Mechanics and Thermal Sciences, 119, 123-148.
DOI: https://doi.org/10.37934/arfmts.119.2.123148

[15] Rithik R Nambiar, Karthik Sankar K, **Manikandan, M.**, Balbir Singh & Manoj T Nair (2024). Numerical Prediction of Axisymmetric Jet Screech Tones in Supersonic Flows. *CFD Letters*, 18(4), 34-53.
DOI: https://doi.org/10.37934/cfdl.18.4.3453

[16] Abhishek Vinayak Pai & **Manikandan, M.** (2025). A Comparative Study of Aerodynamic Characteristics of Conventional and Multi-lobed Airships. *The Aeronautical Journal*, 129 (1339), 2435-2459.
DOI: https://doi.org/10.1017/aer.2025.39
Impact Factor: 1.6

[17] Pratham G., Arnav Choudhary, Tejaswar Pokuri, Abhigyan Basak, **Manikandan M.** & Balbir Singh (2025) On the Role of Artificial Intelligence in Aerospace Engineering: Current State of the Art and Future Trajectories. *The Aeronautical Journal*, 129(1342), 3506-3532.
DOI: https://doi.org/10.1017/aer.2025.10050
Impact Factor: 1.6

[18] Adavayya Sangayya Chikkamath, Vinod Kumar V Meti, I G Siddhalingeshwar, M A Umarfarooq, Kiran Shahapurkar, N R Banapurmath, Ashok M Sajjan, Tabrej Khan, Tamer A. Sebaey, **Manikandan M.**, & Balbir Singh (2026) Enhanced Corrosion Resistance and Aesthetic Properties of Titanium Alloys through Stabilized Anodizing Processes: A Review. *IEEE Access*, 14, 65972-65990
DOI: https://doi.org/10.1109/ACCESS.2026.3679601
Impact Factor: 4.2

[19] Arjun Nair & **Manikandan M.** (2025) Dynamic Stability Control Using Active Aerodynamic Surfaces for Improved Traction and Performance Optimization in Motorsport Applications. *Journal of The Institution of Engineers (India): Series C* - **Under Review**

[20] Bharath Udupa, Vedant Vijaykrishnan, Anwak Manoj Kumar & **Manikandan, M.** (2025). A Surrogate-Assisted Evolutionary Framework for Low-Reynolds-Number Airfoil Optimization. *The Aeronautical Journal* - **Under Revision**.

[21] Pavan Ravikumar Renukeshwar, Omkar Uday Shanbhag, Abhinav Pradeep Naidu, & **Manikandan, M.** (2026). Conceptual Design and Mission Performance Assessment of Electric and Hybrid-Electric Airships. - **Under Revision**.

[22] Prisha Desai, Anwak Manoj Kumar, & **Manikandan, M.** (2026). FALCON: An Open-Source Multi-Fidelity Framework for Automated Airfoil Analysis, CFD Workflow Management and Dataset Generation. *SoftwareX* - **Under Review**.

[23] Pedapudi Anantha Hari Arun, Sudarsan D. Naidu, Pranav Mittal & **Manikandan, M.** (2026). STRATOS: Software-based Tool for Rapid Airship Transformation & Optimized Shaping. *SoftwareX* - **Under Revision**.

CONFERENCE PRESENTATIONS

1. **Manikandan M.** (2011) Conceptual Design Approach for Sub-Orbital Launch Vehicle, National Symposium on Astronomy and Space Engineering (NSASE 2011), MIT Manipal, India, 27 – 28 April 2011.
2. Bajrang Maheshwari and **Manikandan M.** (2012) Conceptual Design of Solar-Wind Powered HALE Autonomous System with Pressurized Structure, International Conference on Competitiveness & Innovativeness in Engineering, Management & Information Technology (ICCIEMI 2012), Jagadhri, 29 January 2012.
3. **Manikandan M.**, Srinivas, G., Thirunavukkarasu, I., & Tapan, S., (2013) Sizing and Sensitivity Analysis of Aerobot for Planetary Exploration, National Conference on Frontiers in Aeronautical, Aerospace, and Automotive Engineering, Noorul Islam University, Tamilnadu, India, 01 – 02 March 2013.
4. Santosh K., Shiva Prasad U., Srinivas G., and **Manikandan M.** (2012) Computational Analysis of Hypersonic Flow Field Over Re-Entry Bodies, International Conference on Applied Science and Engineering (ICASE 2012), Hyderabad, India, 30 July 2012.
5. **Manikandan M.**, Shah, R.R., & Pant, R.S. (2018) Multi-disciplinary Design Optimization of a Solar Powered Tri-lobed Stratospheric Airship Configuration, Symposium on Applied Aerodynamics and Design of Aerospace Vehicles (SAROD 2018) & Workshop on "Stealth in Aerospace Design, Bengaluru, Karnataka, India, Nov. 29-30 & Dec. 01, 2018.
6. **Manikandan M.**, & Pant, R.S. (2019) Conceptual Design Optimization of High-Altitude Airships having a Tri-lobed Envelope. In 2nd National Conference on Multidisciplinary Design, Analysis, and Optimization was held in Bengaluru, India, 22 – 23 March 2019.
7. **Manikandan M.**, & Pant, R.S. (2020) Conceptual Design Optimization of High-Altitude Airship Having a Tri-Lobed Envelope. In: Salagame R., Ramu P., Narayanaswamy I., Saxena D. (eds) Advances in Multidisciplinary Analysis and Optimization. Lecture Notes in Mechanical Engineering. Springer, Singapore.
   DOI: https://doi.org/10.1007/978-981-15-5432-2_4
8. **Manikandan M.**, & Pant, R.S. (2021) Surrogate Based Aerodynamic Shape Optimization of Tri-lobed Hybrid Airship Envelope. In AIAA Aviation Forum and Exposition, 2 – 6 August, 2021.
   DOI: https://doi.org/10.2514/6.2021-2989
9. Peela, A., **Manikandan M.**, & Pant, R.S. (2021) Prediction of Volumetric Drag Coefficient of Tri-lobed Airship Envelopes Using ML Tools. In 8th IEEE CSDE 2021, the Asia-Pacific Conference on Computer Science and Data Engineering, Australia, Brisbane, 8 – 10 December 2021.
   DOI: https://doi.org/10.1109/CSDE53843.2021.9718376
10. Manish Tripathi, **Manikandan M.**, Pranshul Pandey, & Pant, R.S. (2022) Numerical Investigation of LOTTE Airship in Subsonic Flow using SimScale. In 34th National Convention of Aerospace Engineers, Kanpur, India, 21 – 22 March, 2022.
11. Rithik R. Nambiar, Pranav Gupta, & **Manikandan M.** (2023) Conceptual Design of a Solar-Powered Winged Hybrid Airship for Agricultural Purposes. In AIAA Aviation 2023 Forum, San Diego, CA, 12 – 16 June 2023.
    DOI: https://doi.org/10.2514/6.2023-3791

12. Pratham G. Shenwai, Pugazhendi Priyan, Ruchit R. Shah, & **Manikandan M.** (2023) Effect of Multi-lobed Envelope Geometries on Added Mass Computation. In AIAA Aviation 2023 Forum, San Diego, CA, 12 – 16 June 2023.
DOI: https://doi.org/10.2514/6.2023-4141

13. Rithik R. Nambiar, Karthik Shankar, **Manikandan M.**, & Manoj Nair (2023) Numerical Prediction of Generation of Axisymmetric Mode Jet Screech Tones. In AIAA Aviation 2023 Forum, San Diego, CA, 12 – 16 June 2023.
DOI: https://doi.org/10.2514/6.2023-4389

14. Suhas K S, Rohit Krishna, Kanak Agarwal, & **Manikandan M.** (2024) A MATLAB GUI-Based Approach to Wing Design and Aerodynamic Performance Evaluation. In the International Conference on Futuristic Advances in Mechatronics Engineering for Aerospace and Defence: ICFAMEAD-2024 during 04 – 05 October 2024 at Symbiosis Institute of Technology, Symbiosis International (Deemed University), Pune, India.

15. Kanak Agarwal, Vedant Vijaykrishnan, Dyutit Mohanty, & **Manikandan M.** (2024) MATLAB-Enhanced Wing Design and Aerodynamic Modeling. Symposium on Applied Aerodynamics and Design of Aerospace Vehicles (SAROD), Thiruvananthapuram, Kerala, 12 – 14 December 2024.

16. Darpan Theng, Kadar Basha Azad, & **Manikandan M.** (2024) Enhancing Performance of SAM Interceptors through Control Surface Optimization using Particle Swarm Optimization (PSO). Symposium on Applied Aerodynamics and Design of Aerospace Vehicles (SAROD), Thiruvananthapuram, Kerala, 12 – 14 December 2024.

17. Prisha Desai, Anwak Manoj Kumar, **Manikandan M.**, & Rajkumar S Pant (2026) FALCON: Framework for Airfoil CFD and anaLysis OptimizatioN. 35th ICAS Congress in Sydney, Australia, 13 – 18 September 2026. **Accepted for oral presentation**

18. Pedapudi Anantha Hari Arun, Sudarsan D. Naidu, **Manikandan M.**, & Rajkumar S Pant (2026) STRATOS: Software-based Tool for Rapid Airship Translation & Optimized Shaping. 35th ICAS Congress in Sydney, Australia, 13 – 18 September 2026. **Accepted for poster presentation**

BOOKS AND CHAPTER(S)

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1. **Green Hybrid Composites in Engineering and Non-Engineering Applications, Jawaid Khan, Springer Nature, 2023 (ISBN – 978-981-99-1582-8)**

   - Chapter 5: Natural Fiber Reinforced Composites and their Role in Aerospace Engineering, Balbir Singh, Kamarul Arifin Ahmad, **Manikandan M.**, Raghuvir Pai, Eddie Yin Kwee Ng, and Noorfaizal Yidris.
   DOI: https://doi.org/10.1007/978-981-99-1583-5_5
   - Chapter 6: Advanced Natural/Synthetic Polymer Hybrid Composites of the Future for the Aerospace Industry, Balbir Singh, Kamarul Arifin Ahmad, **Manikandan M.**, Raghuvir Pai, Eddie Yin Kwee Ng, and Noorfaizal Yidris.
   DOI: https://doi.org/10.1007/978-981-99-1583-5_6

2. **Nanomaterials: The building blocks of modern technology – Synthesis, properties and applications, Springer Nature, 2023 (ISBN – 978-981-99-4148-3)**

- Chapter 1: Introduction to nanomaterials and their features, **Manikandan M.**, Balbir Singh, Tabrej Khan.
  DOI: https://doi.org/10.1007/978-981-99-4149-0_1
- Chapter 2: Synthesis, characteristics, and applications of nanomaterials, Tabrej Khan, Balbir Singh, **Manikandan M**.
  DOI: https://doi.org/10.1007/978-981-99-4149-0_2

3. **High-Performance Computing for Biomimetics – Architecture, Modeling and Applications, Springer Nature, 2024 (ISBN – 978-981-97-1016-4).**
   - Chapter III: Bio-Inspired Computing and Associated Algorithms, Balbir Singh and **Manikandan M**.
     DOI: https://doi.org/10.1007/978-981-97-1017-1_3
   - Chapter XI: Application of Machine Learning and Deep Learning in High Performance Computing, **Manikandan M**.
     DOI: https://doi.org/10.1007/978-981-97-1017-1_14
4. **Bio-Inspired Optimization Techniques in Blockchain Systems**, V. Vignesh, **Manikandan M.**, and Ruchi Doshi., IGI Global, 2024.
   DOI: https://doi.org/10.4018/979-8-3693-1131-8
5. **Design and Engineering of Lighter Than Air Systems**, Rajkumar S. Pant and **Manikandan M.**, Taylor & Francis (CRC Press), 2025 (In progress).

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1. **Title:** Support-Free, Lightweight, Cost-Effective 3D-Printed Drone Propellor Fender
   - **Status:** Filed
   - **Application Number:** 202541042491
   - **Inventor(s):** Nidhi Ashok, Chiranth Reddy K, Aryan Reddy Banda, Hursh Ramachandra Pai, Shashank Divakar Devadiga, Saurabh Sharma, **Manikandan Murugaiah**
2. **Title:** Smartphone-Compatible Custom Ground Control Station for UAVs
   - **Status:** Published
   - **Application Number:** 202541052170
   - **Inventor(s):** Nidhi Ashok, Chiranth Reddy K, Aryan Reddy Banda, Gautam Gupta Manish, Sriram Sunderajan, Manas Changlani, **Manikandan Murugaiah**
3. **Title:** FALCON (Framework for Airfoil CFD and anaLysis OptimizatioN)
   - **Status:** Registered
   - **Diary Number:** SW-47114/2025-CO
   - **Inventor(s):** Prisha Desai, Anwak Manoj Kumar, **Manikandan Murugaiah**

AWARDS/RECOGNITIONS

1. **2025 Best written paper award** for A Parametric Design Approach for Multi-lobed Hybrid Airships, *The Aeronautical Journal*, **DOI:** https://doi.org/10.1017/aer.2023.37 by Royal Aeronautical Society (RAeS), London.

2. **Active member** - AIAA Technical Committe (LTA group)

FUNDING APPLIED/GRANTED

1. **Project Title:** National-level Conference on Advances in Aerial/Road Vehicles and Its Applications (2013)
   - **Funding Received:** 0.5 Lakhs INR
   - **Funding Source:** Defence Research and Development Organization (DRDO)
   - **Status:** Granted
2. **Project Title:** Faculty Development Programme on "Lighter-than-Air Systems" (2022)
   - **Funding Received:** 0.93 Lakhs INR
   - **Funding Source:** AICTE Training and Learning (ATAL) Academy
   - **Status:** Granted
3. **Project Title:** AICTE IDEA Lab (2024)
   - **Amount Applied for:** 90 Lakhs INR
   - **Funding Source:** All India Council for Technical Education (AICTE), Government of India
   - **Status:** Granted
   - **Duration:** Two years
4. **Project Title:** Accelerated Space Technology Readiness & Access, ASTRA (2025)
   - **Amount Applied for:** 2.6 Crores INR
   - **Funding Source:** Dhruva Space and MAHE
   - **Status:** Approved for establishing
   - **Duration:** Two years
5. **Project Title:** Setting up labs in Drone Technology sector (2024)
   - **Amount Applied for:** 50 Lakhs INR
   - **Funding Source:** All India Council for Technical Education (AICTE), Government of India
   - **Status:** Provisionally selected
   - **Duration:** Two years

RESPONSIBILITIES

- **Head of the Aerodynamics and Propulsion Lab** *2010 - 2017*

  As the head of the Aerodynamics and Propulsion Lab, I led a team of researchers and students in conducting experiments, research, and development in the field of aerodynamics and propulsion. This role involved overseeing lab activities, mentoring students, and managing research projects.

- **Coordinator of Curriculum Development** *2010 - 2021*

  Actively contributed to the development and enhancement of the curriculum within the institution. This role involved collaborating with faculty members to update and improve educational programs, ensuring alignment with industry standards and emerging trends.

- **Faculty Advisor for ICARUS – Aero Modelling Club** *2010 - 2015*

  Served as the faculty advisor for the ICARUS Aero Modelling Club, guiding and supporting students in their pursuit of aeronautical engineering projects. This role included mentoring club members, organizing events, and facilitating hands-on learning experiences.

- **Faculty Advisor for AeroMIT** *2010 - 2015*

  Provided guidance and mentorship to the AeroMIT team, the official aeromodelling and aerial robotics team of the Manipal Academy of Higher Education. Collaborated with students on challenging projects and competitions, fostering innovation and teamwork.

- **Faculty Advisor for Project DronAid** *2018 - Present*

  Currently advising Project DronAid, an official team focused on developing an intelligent network of UAV systems for medical applications. This role involves supervising research, project management, and ensuring the team's objectives are met.

- **Faculty Advisor for NACDeC-VI** *2022 - 2023*

  Served as a faculty advisor for the National Aerospace Conceptual Design Competition (NACDeC-VI), where I guided and supported student participants in addressing the complex design challenge of developing a Vertical Take-off and Landing Autonomous Air Ambulance.

- **Lab and Project Coordinator for M. Tech Defence Technology** *Since 2022*

  Currently coordinating and overseeing laboratory activities and projects related to the M. Tech Defence Technology program. This role involves managing resources, facilitating research, and ensuring the successful execution of projects.

- **Faculty Advisor for NACDeC-VII** *2023 - 2024*

  In my capacity as a faculty advisor for the National Aerospace Conceptual Design Competition (NACDeC-VII), a prestigious national event, I oversaw and mentored students engaged in the conceptual design and sizing of a UAV intended for exploration missions on Mars. **Secured second position among 45 teams participated nationwide**.

- **Faculty Advisor for Project Aviate** *2023 - Present*

  Currently advising Project Aviate, an official team focused on developing UAV systems for long-range and long-endurance applications. This role involves supervising research, project management, and ensuring the team's objectives are met.

- **Coordinator - Centre for Aerospace Science and Technology** *2024 - Present*

  The centre will focus on pivotal domains such as Aerodynamics, Biomimetics, AI & ML, Space Technology, High-Fidelity Computational Fluid Dynamics (CFD) Simulations, Lighter-Than-Air (LTA) systems and space education.

- **Coordinator - ISRO START Programme** *2024 - Present*

- **Coordinator - AICTE IDEA LAB** *2025 - Present*

  IDEA Lab provides all facilities under one roof, for conversion of an idea into a prototype.

- **Program Coordinator - Aeronautical Engineering, School of Mechanical Engineering** *2025 - Present*

- **Coordinator - Space Research Centre, a collaborative platform with Dhruva Space for cubesat fabrication and testing** *2026 - Present*

PROFESSIONAL PROGRAMS AND WORKSHOPS CONDUCTED

- **Convener - Workshop on Fabrication of Fixed Wing UAV** *2010*

  Organized and led a workshop focused on the fabrication and assembly of fixed-wing Unmanned Aerial Vehicles (UAVs) as part of the Aero Modelling Club. The workshop provided students with hands-on experience in building UAVs, enhancing their practical skills.

- **Convener - National Conference on Advances in Aerial/Road Vehicles and Its Applications** *2014*

  Took the role of convener for a national conference that explored advancements in aerial and road vehicle technologies and their diverse applications. The conference was sponsored by DRDO (Defence Research and Development Organization) and brought together experts and researchers from across the country.

- **Convener - First-ever National-level Faculty Development Programme on Lighter-Than-Air Systems** *2021*

  Spearheaded the organization of the first-ever national-level Faculty Development Programme (FDP) focused on Lighter-Than-Air (LTA) Systems. The program, sponsored by AICTE-ATAL (All India Council for Technical Education - AICTE Training and Learning), aimed to enhance faculty expertise in LTA systems and promote research in this domain.

- **Resource Person - Delivered a Talk on Hybrid Airships** *2021*

  Delivered an informative talk on the topic of Hybrid Airships during the Faculty Development Programme on Lighter-Than-Air Systems sponsored by AICTE-ATAL. The presentation shared insights into the latest developments and applications of hybrid airship technology.

- **Publication Chair at the International Conference on Design and Engineering of Lighter-Than-Air Systems (DELTAs - 2022)** *2022*

  Assumed the role of Publication Chair at the prestigious International Conference on Design and Engineering of Lighter-Than-Air Systems (DELTAs - 2022), organized by the LTA Systems Laboratory at the Department of Aerospace Engineering, IIT Bombay. This role involved overseeing the publication process and ensuring the quality of conference papers.

- **Editorial Committee Chair at the International Conference on Design and Engineering of Lighter-Than-Air Systems (DELTAs - 2024)** *2024*

  Appointed as the Editorial Committee Chair for the prestigious International Conference on Design and Engineering of Lighter-Than-Air Systems (DELTAs - 2024), hosted by the LTA Systems Laboratory at the Department of Aerospace Engineering, IIT Bombay. In this capacity, I assumed responsibility for the meticulous oversight of the publication process, ensuring the high quality of conference papers.

- **Keynote Speaker at the One-Day Seminar on Sustainable Aviation using Cargo Airships (SACA - 2024)** *2024*

  Delivered an informative talk on the topic of Design Challenges for Cargo Airships. The presentation shared insights into the challenges involved in the design of cargo airships.

- **Guest Speaker at the One-Day Seminar on Hybrid Airships (Plaksha University - 2025)** *2025*

Delivered an informative talk on the topic of Design Challenges for Hybrid Airships. The presentation shared insights into the challenges involved in the design of Hybrid airships.

JOURNAL REVIEWS

Total Journals Reviewed: 14

1. **Applied Energy**
   - Number of Manuscripts Reviewed: 5
2. **Aerospace Science and Technology**
   - Number of Manuscripts Reviewed: 6
3. **MDPI Journals (Sustainability, Aerospace, Energies, Processes, Sensors, Applied Sciences, Drones, Mathematical and Computational Applications)**
   - Number of Manuscripts Reviewed: 25
4. **Advances in Space Research**
   - Number of Manuscripts Reviewed: 9
5. **Journal of Aircraft**
   - Number of Manuscripts Reviewed: 1
6. **Chinese Journal of Aeronautics**
   - Number of Manuscripts Reviewed: 1
7. **Aircraft Engineering and Aerospace Technology**
   - Number of Manuscripts Reviewed: 1
8. **The Aeroanutical Journal**
   - Number of Manuscripts Reviewed: 2

Total Reviews Completed: 50

PARTICIPATION IN QUALITY IMPROVEMENT PROGRAMME

- **Lecture Course on Flow Measurement Techniques**

  Conducted by National Aerospace Laboratories (NAL) *02 – 04 February 2010*

  Participated in an informative lecture course on Flow Measurement Techniques organized by NAL, enhancing expertise in critical aerospace measurement technologies.

- **QIP Short Term Course on Spacecraft Attitude Dynamics and Control**

  Conducted by IIT Bombay *17 – 21 June 2010*

  Attended a QIP Short Term Course focusing on Spacecraft Attitude Dynamics and Control at IIT Bombay, expanding knowledge in the field of spacecraft dynamics and control.

- **QIP Short Term Course on Navigation and Guidance of Flight Vehicles**

  Conducted by IIT Bombay *13 – 17 June 2011*

  Participated in a QIP Short Term Course on Navigation and Guidance of Flight Vehicles at IIT Bombay, gaining insights into navigation and guidance systems in aerospace.

- **QIP Short Term Course on Dynamics and Control in State Space**

  Conducted by IIT Bombay *06 – 10 May 2013*

  Engaged in a QIP Short Term Course centered on Dynamics and Control in State Space at IIT Bombay, deepening my knowledge of state-space control systems.

- **SERC Summer School on Combustion Fundamentals for Aerospace Propulsion**

  Conducted by DRDO *19 – 21 July 2012*

  Participated in the SERC Summer School on Combustion Fundamentals for Aerospace Propulsion organized by DRDO, gaining insights into aerospace combustion.

- **CEP Course on Design and Development of UAVs and LTA Systems**

  Conducted by IIT Bombay *15 – 16 February 2014*

  Took part in the CEP Course focused on Design and Development of UAVs and LTA Systems at IIT Bombay, expanding expertise in unmanned aerial vehicles and lighter-than-air systems.

- **Three-Day Short Course on Helicopter Design & Technology**

  Conducted by Jain University *24 – 26 February 2015*

  Participated in a comprehensive Three-Day Short Course on Helicopter Design & Technology organized by Jain University, gaining insights into helicopter technology.

- **Short Term Course on Advances in Computational Fluid Dynamics**

  Conducted by IIT Bhubaneswar *08 – 12 June 2015*

  Engaged in a Short Term Course focused on Advances in Computational Fluid Dynamics at IIT Bhubaneswar, enhancing knowledge in computational fluid dynamics.

- **Faculty Development Programme in Innovation & Entrepreneurship**

  Organized by Manipal Institute of Technology *02 – 12 March 2016*

  Successfully completed a Faculty Development Programme in Innovation & Entrepreneurship organized by Manipal Institute of Technology, gaining valuable insights into fostering innovation and entrepreneurship.

- **Faculty Development Programme on Inculcating Universal Human Values in Technical Education**

  Organized by All India Council for Technical Education (AICTE) *02 – 06 August 2021*

  Attended a Faculty Development Programme focusing on Inculcating Universal Human Values in Technical Education, organized by AICTE, emphasizing the importance of ethical and human values in technical education.

- **Short Term Course on Introduction to Solar Physics**

  Organized by Manipal Centre for Natural Sciences *06 – 10 June 2022*

  Participated in a Short Term Course providing an Introduction to Solar Physics, organized by Manipal Centre for Natural Sciences, enhancing knowledge in the field of solar physics.

- **Online Three Day Workshop on Basics of CFD and OpenFOAM**

  Organized by FOSSEE (Free and Open Source Software for Education) and the Spoken Tutorial Projects, MoE, Government of India *11 – 13 January 2023*

- **Online Two Day Workshop on How to guide Postgraduate Students in their Research**

  Organized by NPTEL, Educational Technology, IIT Madras *4 – 5 May 2024*

- **Online One Day Workshop on Introduction to Instructional Design**
  Organized by NPTEL, Educational Technology, IIT Madras *8 June 2024*

CERTIFICATION

- **Experimental Design Basics**
  Arizona State University
  Completed a certification course in Experimental Design Basics from Arizona State University, enhancing skills in designing and conducting experiments effectively.
- **Introduction to High-Performance and Parallel Computing**
  University of Colorado
  Successfully completed the certification course on Introduction to High-Performance and Parallel Computing offered by the University of Colorado, gaining proficiency in high-performance computing techniques.
- **On Being a Scientist**
  Universiteit Leiden
  Completed a certification course in On Being a Scientist from Universiteit Leiden, enhancing knowledge of scientific conduct & ethics.
- **Control Design Onramp with SIMULINK**
  MathWorks
  Certified in Control Design Onramp with SIMULINK by MathWorks, demonstrating expertise in control system design using SIMULINK.
- **Simulink Onramp**
  MathWorks
  Attained certification in Simulink Onramp from MathWorks, showcasing proficiency in using Simulink for modeling and simulation tasks.

REFERENCES

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