RAJADHANI INSTITUTE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF
MECHANICAL ENGINEERING

THE MECH CHRONICLES

2025



Thanks to almighty

Grateful for the strength you provided, We stand with gratitude for our educational success.

Department of Mechanical engineering

FOCUS ON



Established in 2009 with an intake of 60, Mechanical Engineering department has been rated high among other engineering disciplines under APJ Abdul Kalam Technological University (KTU). The Department of Mechanical Engineering offers comprehensive education for Bachelor's Degree in Mechanical Engineering which attracts highly meritorious students. The highly dedicated and qualified faculty keeps the academics and research activities of the department in high spirits. The department has been provided with excellent infrastructure and state of the art facilities that comprise of seminar & drawing halls, department library and well-equipped laboratories. The Department has started both faculty and student chapter of Indian Society for Technical Education (ISTE) & SAE India collegiate club. The department is spreading its wing to make the students employability in various fields. The department has signed MoU with InterCAD Systems Pvt. Ltd. , Barola Technologies, Taneja Aerospace and Aviation Limited, Barola Aerosports, CADD centre, MAKS Automations Pvt Ltd, The objective behind these MoU's is to provide a forum for students to get exposed to the industry environment.

"Message From Chairman



I feel myself elated on having been conferred with the honor of presenting this Volume of the Magazine of Department of Mechanical Engineering of RIET, " THE MECH CHRONICLES 25 " before its Esteemed and elite readers. RIET in a short span of less than a decade has achieved two score years' prestigious growth and development in intellectual pursuits apart from Art & Culture. THE MECH CHRONICLES , is a marvelous representation of these glorious accomplishments and achievements.

I also appreciate the creative genius and multidimensional task-force that have given life and soul to this commendable work. When I turn the pages of this Magazine, I come across valuable contributions made by our dedicated faculty members and beloved students of Mechanical Engineering and others who extended their helping hands.

We can feel proud and contented when the posterity looks up on this volume as a beacon of light for guiding their path.

Our dear Readers! Blessed be the moments when you go through the pages of this Volume of " THE MECH CHRONICLES ".

Dr. BIJU RAMESH

"Message From Principal



It gives me immense pleasure to present before our esteemed readers the latest volume of the Department of Mechanical Engineering magazine, "THE MECH CHRONICLES 25." This publication reflects the vibrant academic spirit and creative enthusiasm that define the RIET community.

Over the years, RIET has grown steadily as a centre of learning, innovation, and holistic development. The Mechanical Engineering Department has consistently contributed to this progress through academic excellence, technical exploration, and active student participation. THE MECH CHRONICLES 25 stands as a testimony to the talent, dedication, and collaborative efforts of our students and faculty.

I commend the editorial team and all contributors who have invested their time, creativity, and commitment in bringing out this remarkable publication. Each page reflects the curiosity, ideas, and achievements that shape the learning experience within our institution.

I am confident that this magazine will inspire our students to continue exploring new horizons of knowledge and creativity. May this volume serve not only as a record of accomplishments but also as a source of motivation for future endeavors.

I extend my best wishes to the Department of Mechanical Engineering for their continued success and to all readers who engage with this wonderful compilation.

Dr. Madhukumar S
Principal,
RIET

"Message From HOD



As we navigate the ever- changing landscape of education to greater heights, it is with pride that the Department of Mechanical Engineering release this new issue of the department magazine to celebrate the remarkable journey, achievements and growth of our students.

Our students' achievements, whether in academics, sports, or extracurricular activities, are a testament to their hardwork and dedication. Nurturing a culture of curiosity, creativity and inclusivity, the department provides an environment that encourages exploration, imagination and experimentation.

Through this message, I wish my students “All the very Best” for their future endeavours and hope they bring more laurels to the department and the college.

I would like to extend my appreciation to the editorial board for their tireless efforts in bringing out this magazine. I wish that this magazine establishes to be a flint to fire the enthusiasm and excite the young minds for many intrusive innovations.

Let's keep pushing boundaries, exploring new horizons, and striving for excellence.

Dr Bindu S S
Head of Department
ME, RIET

Institute Vision

Groom the Youth as Innovative, Creative and Empathetic Technologists, Hospitality Professionals, Managers and Entrepreneurs for Social Transformation.

Institute Mission

- **M1** : To encourage holistic development of students with well balanced curricular, co-curricular and extra-curricular activities.
- **M2** : To promote ethical and value-oriented teaching, research and consultancy among faculty and students for social transformation.
- **M3**: To interact with industrial organizations, governmental agencies, engineering, hospitality, and business enterprises for collaborative learning.

EDITORIAL

Dear Readers,

It gives us great pleasure to present this year's edition of The Mech Chronicles, highlighting the achievements and memorable moments of our Mechanical Engineering Department over the past year.

The past academic year has been a testament to our department's commitment to excellence. From ground breaking research projects to outstanding performances in national-level competitions, our students and faculty have consistently pushed the boundaries of what's possible.

Moreover, our alumni network has grown stronger, with past graduates returning to share their experiences and guide current students on their career paths. Their success stories inspire us to continue the legacy of innovation and hard work.

We thank everyone who contributed to making this year a success and hope this magazine inspires you to keep pushing the boundaries of engineering.

Happy reading !

- Editorial Team

THE MECH CHRONICLES

Staff Editor



Mr Krishnakumar K
Assistant professor

Student Editor



Mr Karthik B
S8 **ME**

Department Vision

To be a preferred destination to produce technocrats in Mechanical Engineering fostering academic excellence, research, industry readiness with human values for social transformation.

Department Mission

- **M1** : To impart quality education through activity based learning and leading -edge technology.
- **M2** : To provide holistic education inculcated with research activities, human and ethical values, societal and industrial commitment, personality development and team spirit.
- **M3** : To foster strong industry- institute interaction to develop employable skills and enrich experiential learning through capstone projects.

Program Educational Objectives (PEOs)

- PEO 1 : Graduate shall have strong core and interdisciplinary knowledge, skills and professional accomplishment towards employment in allied industries, higher studies and research.
- PEO 2 : Graduates shall utilise latest tools and rapidly changing technologies to analyse, design and develop sustainable systems, testing and manufacturing for real life applications.
- PEO 3 : Graduates shall practice multidisciplinary approach, ethics, good communication, team spirit to evolve as competent technocrats and entrepreneurs.

Program Specific Outcomes (PSOs)

- **Mechanical Design** – Capable to Design Mechanical Systems with updated software tools and equipment's/Processes to meet desired Specifications and requirements within realistic constraints to solve real time mechanical/societal problems.
- **Managing Efficiency** - Develop Capabilities to address the challenges in the Energy Sector and Develop Energy Efficient Systems
- **Industrial Application** - Manage the Resources in an Organization more effectively and efficiently in the Dynamic Industrial Environment.













Our Infrastructure and Facilities

Thermal Engineering Laboratory

Basic workshop

IC Engines Lab

Manufacturing CNC lab

Production Engineering Lab

Fluid Mechanics and Machinery Lab

CAD Analysis Lab

Machine Tools Lab

Strength of Materials Lab

Machine Tools and Metrology Lab

PROGRAM OUTCOMES

1. Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2. Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
3. Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the environmental considerations.
4. Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.
5. Modern Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective and give and receive clear instructions.
11. Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary.
12. Life-Long Learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Major Internships, Projects

Our Association

AURIFEROUS CHAMBER OF MECHANICAL ENGINEERING

Auriferous Chamber for Mechanical Engineering ACME is a prestigious hub at our college dedicated to fostering innovation and excellence in mechanical engineering. It serves as a collaborative platform connecting Alumni, Faculty, and Students to share knowledge, resources, and experiences. ACME provides opportunities for mentorship, industry engagement, and cutting-edge projects, bridging the gap between academia and industry. It stands as a testament to our commitment to advancing mechanical engineering and building a thriving community of engineering professionals.

Department Programmes





The Department of Mechanical Engineering successfully organized a comprehensive training programme titled “Fundamentals of Industrial Piping and Job Opportunities” on 28/01/2025, conducted from 11:00 A.M. to 12:45 P.M., with the objective of providing students with fundamental knowledge of industrial piping systems and creating awareness about related career opportunities in the industry





BIM enabled facility management by CORE institute of technology 10/03/2025 A technical session on BIM Enabled Facility Management was conducted by CORE Institute of Technology on 10/03/2025 at Rajadhani Institute of Engineering and Technology. The program focused on the application of Building Information Modeling (BIM) in facility management, highlighting how digital models support efficient operation, maintenance planning, asset tracking, and lifecycle management of buildings. The session provided practical insights into modern FM practices and the role of BIM in improving sustainability and cost efficiency.





The Department of Mechanical Engineering successfully organized a comprehensive training programme titled "Enhancing Career Prospects in Occupational Health and Safety". The event took place on 11/03/2025 from 10:00 A.M. to 12:00 P.M. The workshop on NEBOSH, which provided valuable insights into the significance of occupational health and safety and the role of NEBOSH certification in career advancement was conducted. The session was conducted by Ms. Riya S from IREZ Academy and was organized by ACME. The technical session commenced with a presentation that covered the fundamentals of NEBOSH, including the various opportunities available and the essential role of NEBOSH certification in career advancement.



The Department of Mechanical Engineering organized an expert session on 19th March 2025 by Mr. Sreyas Kumar, a certified NDT Trainer from TCHMEX, a reputed industrial training and consultancy organization. The session covered Oil and Gas Sector Overview, Quality Assurance and Quality control, Non-Destructive Testing (NDT) Techniques. The objective of the talk was to bridge the gap between academic concepts and industry requirements, providing students with insights into career opportunities and technical competencies essential in these sectors.

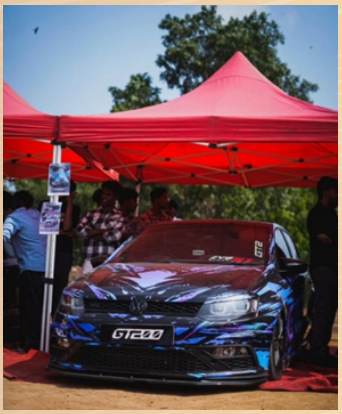
ITIHAA

AUTO SHOW

The Department of Mechanical Engineering proudly organized the MECHAVOC AUTO SHOW 2025 on 14th February at the RIET College Ground, marking a significant milestone in fostering innovation and technical excellence among students. Powered by the dedicated efforts of the department, the event served as a vibrant platform for budding engineers to exhibit their passion for automobiles and cutting-edge technology. A notable highlight of the event was the positive reception it garnered from all corners.













Farewell 2024



2021- 2025 Batch Farewell Function



2021- 2025 Batch





The Department of Mechanical Engineering, RIET, organised a six-day hands-on workshop on SOLIDWORKS from 9th to 14th June 2025 at the CAD Laboratory. The workshop was conducted by Mr. Jithin Prasanth, an experienced CAD Trainer from CADD Centre, with the objective of strengthening students' proficiency in 3D modelling, design automation, and engineering visualization.





A Student Talk session was organized by the Department of Mechanical Engineering under the banner of ACME (Auriferous Chamber of Mechanical Engineering) on 21st July 2025. The session featured presentations by Mr. Ashik Ashok and Mr. Ananthagiri S on the topic "Legends on Wheels." The presentation explored the legacy of some of the most iconic automobiles in history and how they became symbols of engineering brilliance and cultural transformation. The speakers highlighted legendary vehicles that redefined performance, safety, design, and affordability in the automobile industry. They also explained how these vehicles influenced industrial growth, mass mobility, and technological advancement across different generations.





To bridge the gap in curriculum and provide students with updated knowledge in emerging fields, the Department of Mechanical Engineering, in association with ACME (Auriferous Chamber of Mechanical Engineering), ISTE, and the SAE India Collegiate Club of RIET, organized an Expert Talk on “Renewable Energy Across Disciplines” on 20th July 2025 at the Mini Auditorium, RIET. The resource person for the session was Mr. Rahul Sivakumar, Co-founder of Consult FOX, Berlin, Germany. In his address, he provided a comprehensive overview of renewable energy systems, their multidisciplinary nature, and their critical role in ensuring a sustainable future.



Prof. S. Sivakumar, visiting faculty in the Department of Mechanical Engineering, has been guiding and enlightening the final year Mechanical Engineering students with innovative project ideas on 20th July 2025. Through interactive sessions, Prof. Sivakumar introduces students to contemporary engineering challenges and encourages them to explore creative solutions. .

His guidance covers conceptualization, design approaches, feasibility analysis, and practical implementation of projects, enabling students to develop technically sound and innovative outcomes. During the sessions, Prof. Sivakumar introduces students to emerging trends and technologies in mechanical engineering, including renewable energy systems, automation



A knowledge-enhancing session on "How to Publish Academic Articles in Peer-Reviewed Journals" was conducted to guide students and researchers through the essential steps of academic publishing on 15th July 2025. The expert speaker Dr. Rajkumar Easwara Pillai began by explaining the importance of peer-reviewed journals in maintaining research quality, academic credibility, and global knowledge exchange. Participants were introduced to the process of identifying suitable journals by examining factors such as journal scope, indexing, impact factor, and publication timelines.



To bridge the gap between curriculum and emerging industrial trends, the Department of Mechanical Engineering, in association with ACME (Auriferous Chamber of Mechanical Engineering), ISTE, and the SAE India Collegiate Club of RIET, organized an Expert Talk titled "From Chips to Layers" on 25th July 2025 at the Mini Auditorium, RIET. The session was aimed at enhancing student knowledge in the rapidly growing field of additive manufacturing, which is transforming product design and modern industrial practices.



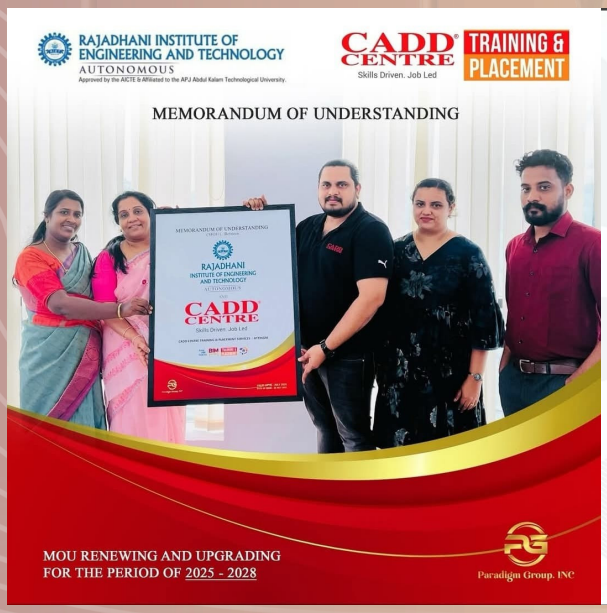


To bridge the gap in curriculum and provide students with exposure to defense technologies, the Department of Mechanical Engineering, in association with ACME (Auriferous Chamber of Mechanical Engineering), ISTE, and the SAE India Collegiate Club of RIET, organized an Expert Talk on “Missile & Helicopter Aviation Maintenance” on 30th July 2025 at the Mini Auditorium, RIET. The resource person for the session was Wing Commander U. Sathyan, IAF Veteran, who brought with him vast experience and expertise in the field of aviation maintenance. In his address, he provided a detailed overview of missile technology, helicopter systems, and the crucial aspects of their maintenance and operational readiness.





A one-day workshop on Flight Mechanics was conducted on 20th JULY 2025to provide students with a clear understanding of the principles governing the motion and performance of aircraft. The program began with an introductory session highlighting the importance of flight mechanics in aeronautical engineering, aircraft design, and aviation safety. Participants were introduced to the four fundamental aerodynamic forces—lift, weight, thrust, and drag—along with the basic concepts of airfoils, angle of attack, and the generation of aerodynamic lift.





Rajadhani Institute of Engineering and Technology (RIET), Trivandrum, continues to strengthen its industry–academia linkage through strategic collaborations aimed at enhancing student skill development and employability. As part of this initiative, the institute renewed and upgraded its Memorandum of Understanding with CADD Centre Training & Placement Services, Attingal, for the period 2025–2028, reinforcing training and placement support in advanced engineering and design domains. In addition, RIET signed a new MoU with BIM Café Learning Hub on 23/07/2025, focusing on Building Information Modeling (BIM) education and industry-oriented learning.

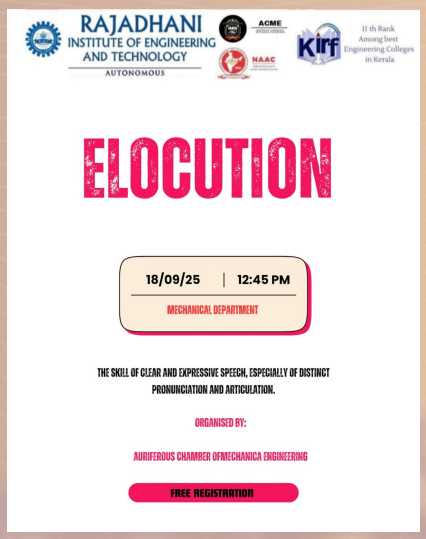


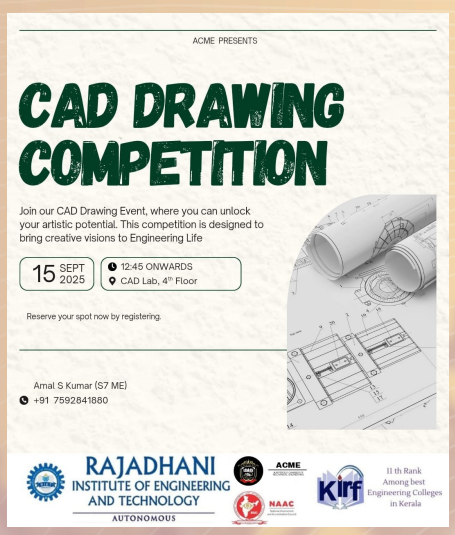
Commencement Day 2025 was celebrated with great pride and enthusiasm at Rajadhani Institute of Engineering and Technology and Rajadhani Polytechnic College on 18th August 2025, marking a significant milestone in the academic journey of the graduating students. The event was graced by distinguished dignitaries including Dr. Biju Ramesh, Chairman, Dr. M. Abdul Rahman, Former Pro Vice Chancellor, KTU & Director, LBS Centre for Science & Technology, Megha B. Ramesh, Associate Director (Academics), Dr. Madhukumar S., Principal, RIET, and Dr. Sangeetha Y., Vice Principal, whose inspiring addresses encouraged students to pursue excellence, uphold professional ethics, and contribute responsibly to society.



A Project Exhibition was conducted at KPM Model School, Mayyanad, Kollam, on 29th November 2025, with active participation from III and Final Year students. The exhibition served as a platform for students to demonstrate their technical knowledge and creativity by presenting innovative working models and engineering concepts. The exhibits reflected practical problem-solving approaches and real-world applications, fostering scientific curiosity among school students. The interaction between exhibitors and visitors promoted knowledge sharing, hands-on learning, and awareness of engineering education, making the event both educational and inspiring for all participants.The event also strengthened the institution–school connect by encouraging early exposure to engineering disciplines among young learners.







In commemoration of Engineers' Day 2025, the Department of Mechanical Engineering at Rajadhani Institute of Engineering and Technology) organized a series of engaging competitions designed to showcase student creativity and technical prowess. The celebrations kicked off on September 15th with a high-stakes CAD Drawing Competition in the CAD Lab, where students translated imaginative visions into precise engineering designs. This was followed on September 16th by an Essay Writing Competition themed around storytelling and imagination, and an Elocution Competition on September 18th that challenged participants to demonstrate clarity and expressive speech. Organized by the Auriferous Chamber of Mechanical Engineering (ACME), these events successfully fostered a spirit of innovation and professional excellence among the budding engineers of the 2025 academic year.





The Department of Mechanical Engineering at Rajadhani Institute of Engineering and Technology organized a comprehensive two-day Faculty Development Program on December 15th and 16th, focusing on "Fusion 360 for Mechanical Design". Held at the CAD Lab, the program featured Adil N S, a professional BIM Modeller, as the guest speaker, providing faculty members with hands-on expertise in industry-standard software. This initiative aimed to bridge the gap between academic theory and modern engineering practices, ensuring the department remains at the forefront of technological advancements in mechanical design.





During the 2025 academic year, the Department of Mechanical Engineering at Rajadhani Institute of Engineering and Technology (Autonomous) hosted a series of technical and creative programs organized by the Auriferous Chamber of Mechanical Engineering (ACME). The initiatives included a CAD Drawing Competition held on September 15th to test design precision, an Essay Writing Competition on September 16th focused on storytelling, and an Elocution Competition on September 18th centered on expressive speech. Additionally, the department presented a technical "Master Workshop on Go-Karting" by Team MECKARTANS on December 18th, which offered students specialized insights into automotive engineering and activity points.





The Mechatronics & Hydraulics session was organized to enhance students' practical understanding of hydraulic systems and control applications. The program included live demonstrations and insightful industry-based discussions, providing hands-on exposure to real-world systems. The session was conducted by SMC Kerala, offering valuable industrial perspectives and bridging the gap between theoretical knowledge and practical implementation. 12/11/2025





A one-day workshop was conducted in the Machine Tools Laboratory to provide students with hands-on exposure to conventional machining processes and machine tool operations. The session focused on practical demonstrations, safety practices, and real-time machining techniques, helping participants strengthen their understanding of manufacturing principles and improve their technical skills through experiential learning. 12/11/2025

Celebrations



The Department celebrated **Onam** with great enthusiasm and cultural spirit, showcasing the rich traditions and heritage of Kerala. Faculty members and students actively participated in the celebrations, which included traditional decorations and festive activities, fostering unity, joy, and cultural harmony within the department. The event provided a refreshing break from routine academics while strengthening interpersonal bonds and promoting a sense of togetherness among all participants.



Ayudha Pooja was celebrated with devotion and traditional fervor in the Mechanical Engineering Laboratory of Rajadhani Institute of Engineering and Technology (RIET), highlighting the importance of tools, machines, and technology in engineering education. Faculty members, lab staff, and students participated in the pooja, seeking blessings for the safe, efficient, and successful use of laboratory equipment.



The Department celebrated Christmas with warmth and festive spirit, creating a joyful and welcoming atmosphere on campus. Faculty members and students came together to mark the occasion through decorations and cheerful interactions, promoting unity, goodwill, and mutual respect. The celebration reflected the values of sharing and harmony, strengthening camaraderie within the department and adding a festive touch to academic life.

Sports 25







Meliga," the annual football tournament organized by the Mechanical Engineering Department, is one of the most anticipated sporting events on campus held from 17th February 2025. The tournament brings together students from various branches, fostering a strong sense of camaraderie, teamwork, and healthy competition. More than just a game, Meliga serves as a platform for students to showcase their talent, leadership, and sportsmanship. Meliga 2025 continued this tradition with remarkable energy, uniting the college community and celebrating the passion for sports.



The Mechanical Engineering second-year team clinched the Intra-College Volleyball Championship with an outstanding display of skill, teamwork, and determination.Their dominant performance and fighting spirit set them apart throughout the tournament.

Graduation Day 2025





Congratulations to the 2025 graduates of the Department of Mechanical Engineering at Rajadhani Institute of Engineering and Technology on their successful convocation ceremony held on May 25, 2025.





Honours and Minor Degree holders- Kailas J K (Minor dgree in Robotics and Automation Engg.), Adithyan T S (Honors Degree in Mechanical Engineering), Deepak Krishna U (Minor Degree in Robotics and Automation Engg.)

Semester Toppers



Adhithyan TS
SGPA-9.7 (S8)



Vaishnav SS
SGPA-8.24 (S6)



Adhithyan B
SGPA- 8.03 (S4)



Aswin BS
SGPA - 8.2 (S2)

Alumni Interaction Programmes

The Alumni Interaction Programme was organized to bridge the gap between academic learning and real-world industry exposure. Our esteemed alumni shared their professional journeys, technical insights, and career guidance, inspiring students to explore emerging opportunities and build practical skills. The session was highly interactive, motivating, and enriching, leaving students with valuable takeaways for their future endeavors.



ALUMNI INTERACTION by Bijin Prakash, Director – Operations, Gen robotics, Trivandrum on 18/09/2025



ALUMNI INTERACTION by Ramzy Rahim, Senior Sales Engineer - Danube , 2017-2021 batch



ALUMNI INTERACTION by Sidharth S P, Horizon Survey Company, 2017-2021 batch on 11/08/2025

Placement Training & Career Guidance



Placement-oriented training for S8 Students; program conducted by Mr. Nidhin Krishna, powered by TalenTus, designed for highly aspirational Mechanical Engineering students at Rajadhani Institute of Engineering and Technology, Trivandrum."





Placement-oriented training for S5 Students; program conducted by Mr. Nidhin Krishna, powered by TalenTus, designed for highly aspirational Mechanical Engineering students at Rajadhani Institute of Engineering and Technology, Trivandrum."

Faculty Achievements

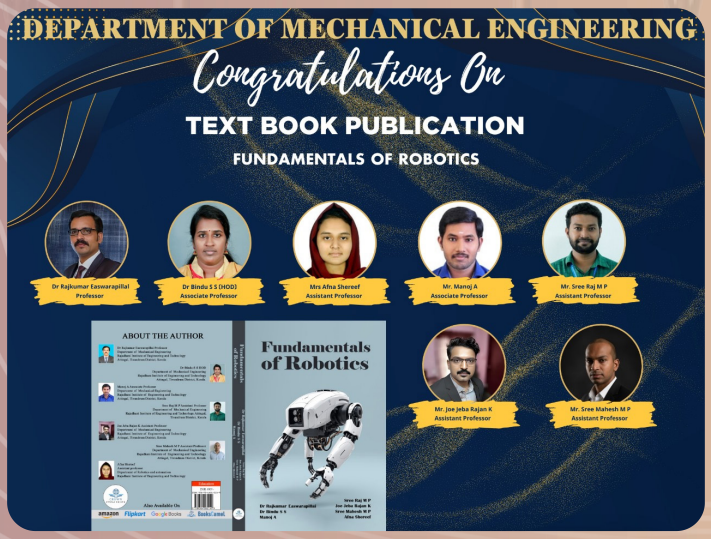




The Department of Mechanical Engineering congratulates its faculty members on the successful publication of the textbooks “Fundamentals of Engineering Graphics" and "Computer Aided Fixture Design". This achievement reflects the department’s strong academic culture and commitment to quality engineering education for Engineering students. The publication by Rajadhani Institute of Engineering and Technology highlights the institution’s contribution to technical learning and research excellence.



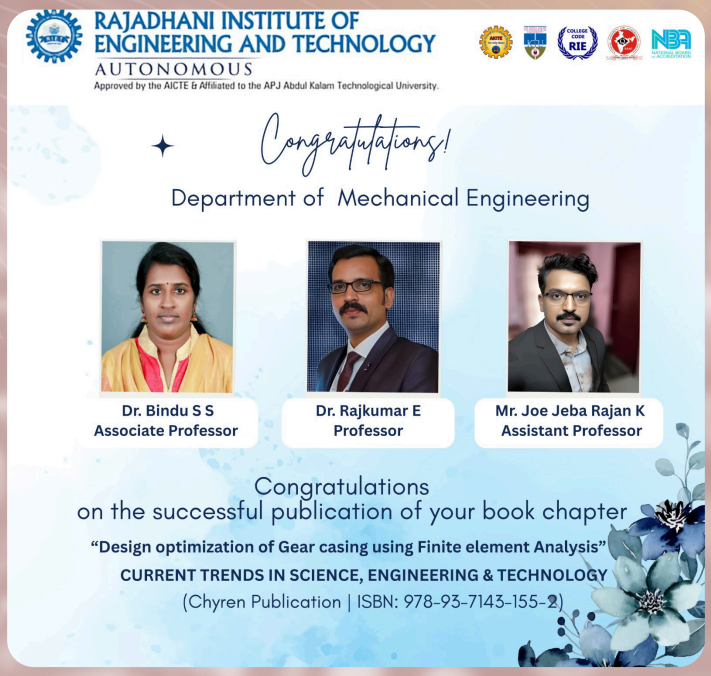
The Department of Mechanical Engineering proudly congratulates Dr. Bindu S. S, Associate Professor and HOD, on her successful research paper publication. Her work on magnesium–boron carbide composites highlights significant advancements in mechanical and tribological performance for lightweight structural applications. This achievement reflects the department’s strong commitment to research excellence and innovation.











The Department of Mechanical Engineering congratulates Dr. Bindu S S, Dr. Rajkumar E, and Mr. Joe Jeba Rajan K on the successful publication of their book chapter titled "Design Optimization of Gear Casing using Finite Element Analysis" in Current Trends in Science, Engineering & Technology. This achievement reflects their expertise in advanced design and analysis, contributing valuable insights to modern mechanical engineering practices.



The department also extends heartfelt congratulations to Dr. Rajkumar E, Mr. Manoj A, Mr. Sree Mahesh M P, and Mr. Sree Raj M P for their book chapter "Design and Analysis of Lower Limb Exo-Skeleton for Differently Abled Persons." Their work highlights innovative and socially impactful engineering research, reinforcing the department's commitment to inclusive technology and academic excellence.This contribution demonstrates a strong integration of mechanical design, biomechanics, and assistive technology, addressing real-world challenges faced by differently abled individuals.



- **Self-Leveling Wheelchair with Telescopic Limbs:** The department celebrates the successful design registration of this innovative assistive technology (Design No. 469360-001), developed by Dr. Rajkumar Easwarapillai, Mr. Sree Raj M P, Dr. Bindu S S, Mr. Sree Mahesh M P, Mr. Joe Jeba Rajan K, Mr. Amal J Anil, and Mr. Aswin S. The design reflects a strong commitment to inclusive engineering and mobility solutions for differently abled individuals.



- **Sensor-Based Monitor Mount Bracket:** We are proud to announce the registration of this ergonomic and sensor-integrated design (Design No. 476401-001), achieved by Dr. Rajkumar Easwarapillai, Dr. Bindu S S, Ms. Lekshmi B S, Mr. Sree Raj M P, Mr. Joe Jeba Rajan K, Mr. Sree Mahesh M P, and Mr. Aswin S. This device redefines workspace safety. It uses integrated sensors to detect human proximity and automatically halts nearby robotic systems to prevent accidents. It's the perfect balance of ergonomic flexibility and smart safety for collaborative environments.



पेटेंट कार्यालय, भारत सरकार The Patent Office, Government Of India

डिजाइन के पंजीकरण का प्रमाण पत्र | Certificate of Registration of Design

- **Six-Axis Robotic Arm:** Congratulations to Dr. Rajkumar Easwarapillai, Mr. Sree Raj M P, and Mr. Aswin S for securing the design registration (Design No. 474512-001) for this advanced automation project, which demonstrates expertise in robotic systems, mechanical design, and industrial automation. The claimed portion of the design of the SIX-AXIS ROBOTIC ARM consists of a fully articulated, compact automation system designed for precision tasks in manufacturing environments. With six independently controlled joints, it offers a wide range of motion—allowing for rotation, tilting, bending, and swiveling—to perform operations requiring high dexterity and repeatability.





Congratulations to Dr. Rajkumar Easwarapillai, Professor of Mechanical Engineering at RIET Trivandrum, for being honored with the Swami Vivekanand National Spirit Award 2025. This prestigious Certificate of Excellence recognizes his exceptional contributions to engineering education, innovative research in design optimization, and over two decades of professional leadership in advancing modern engineering practices. International Teacher Excellence Award: Our department is proud to celebrate Dr. Rajkumar Easwarapillai, Professor at RIET, for being honored with the "International Teacher Excellence Award 2025" by the Tretayug Foundation in recognition of his outstanding dedication to education and his lasting impact on students.

Internship & Industrial Visits



On September 27, 2025, the S8 Mechanical Engineering students of Rajadhani Institute of Engineering and Technology conducted a one-day industrial visit to Kerala Agro Machinery Corporation Ltd. (KAMCO) at its prime manufacturing center in Athani, Ernakulam.

The visit provided the final-year students with invaluable insights into the large-scale assembly of power tillers and the precision engineering required for high-performance agricultural machinery.



From December 1, 2025, to December 5, 2025, the S8 Mechanical Engineering students of Rajadhani Institute of Engineering and Technology completed a focused five-day industrial internship at MAKS Automation Pvt. Ltd. in Kollam. During this period, students gained hands-on experience in the assembly and troubleshooting of advanced industrial packaging systems and conveyor solutions.

The internship successfully bridged the gap between academic theory and real-world application, equipping the future engineers with practical skills in industrial automation and precision manufacturing.



On December 5, 2025, the S4 Mechanical Engineering students of Rajadhani Institute of Engineering and Technology conducted a one-day industrial visit to Kerala Agro Machinery Corporation Ltd. (KAMCO) at its prime manufacturing center in Athani, Ernakulam.



On August 2, 2025, the S5 Mechanical Engineering students of Rajadhani Institute of Engineering and Technology (RIET) conducted a productive industrial visit to HMT Machine Tools Ltd. The visit provided the students with a comprehensive look at the manufacturing of equipment, including CNC bed turning centers and heavy-duty lathes.



Manjunath S M, Bithul B, Amal Krishna P, Anzal N, Jayashankar M Biju, Suraf Suresh, Afzal S, and Hijas Ahamed— of final year Mechanical Engineering department attended the DST-SERB Sponsored Two-Day National Seminar on the theme *"Innovate, Integrate, Elevate: Advanced Materials for Industrial Applications"* held on 21st and 22nd August 2025.

The seminar provided valuable exposure to cutting-edge material technologies and fostered knowledge exchange on advanced materials driving industrial innovation, thereby enhancing the students' technical awareness and research orientation.



IV trip of 2022-2026 Batch

Ink & Imagination

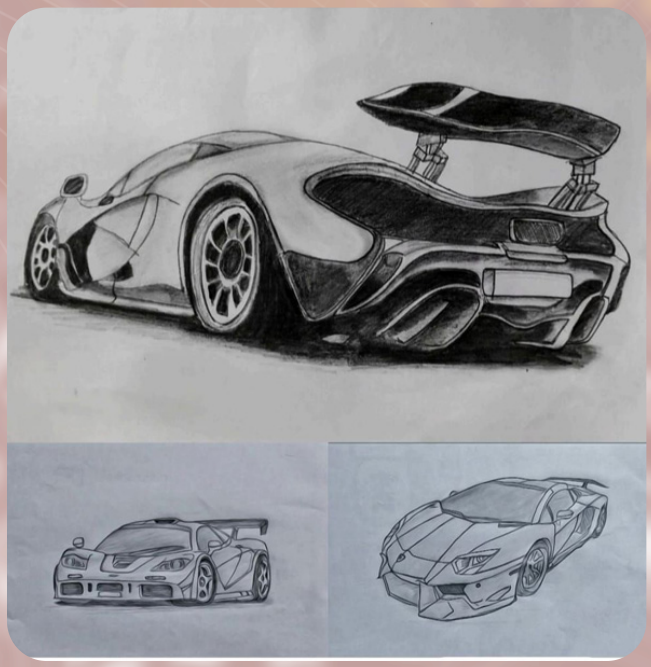
Ink & Imagination is a creative space that brings together the artistic expressions and original thoughts of our students. This section showcases drawings, sketches, articles, and written works that reflect imagination, innovation, and individuality. It serves as a platform where ideas flow freely, giving voice to creativity beyond classrooms and celebrating the diverse talents within our campus.







Anandakrishnan S
S6 ME





Sebin Mohammed
S6 ME

A LONE FARMER

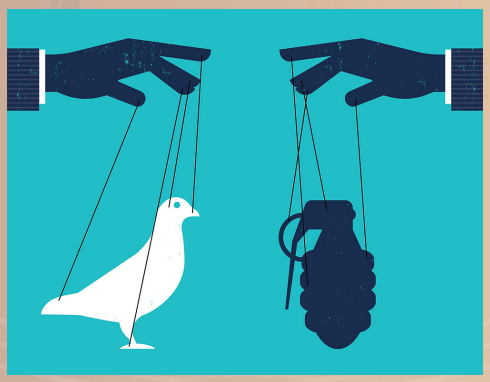


A middle aged lone farmer sat in his sunflower garden,
With the crescent moon his only companion.
Having sent his issues to the city,
To be people he once longed to be.
The hues of the night sky his only embrace,
His brother the black sheep, Oh! What a disgrace.
He watched the night unfold,
The city awaken into a distant glow.
The farmer reclined,
Having found solace in his simple life.
He gazed at the stars and thought,
How it would be to just get lost.
In this peace and serenity he felt,
For a fleeting moment he dealt.
But no, because another sun would rise
A new sunflower would bloom.
That sun too would learn to set,
And they will forget, the cost of his sweat.



— Arjun Shaji
S6 Mechanical Engineering

HUMAN TENDENCIES FOR VIOLENCE



"An eye for an eye makes the whole world blind."

– Mahatma Gandhi

Humans or homo sapiens are the most intelligent creature that our planet has seen in its 4.5 billion years of existence and yet even with all this intelligence and thousands of years development we are never too far away from hurting each other. Why is that the case?

I have an interesting theory that may pave the way for this question. One such theory is "The survival of the fittest".

It is possible that violence is in our genes. Studies show that in animals violence and aggression are traits that can be passed through their genes, although this doesn't imply that the offspring of a violent animal has to necessarily be violent but instead, it has more chance to be so. In the ancient times when we were simply mindless cavemen the only rule that followed was this, The survival of the fittest. And violence and aggression are effective tools in order to win fights that dictate life or death. So it is more logical to think those with violent traits are those who survived and thus became our ancestors. Most of the human population if not all might carry these genes thus making violence an instinct rather than our last resort.



— ADEEB AL ZAYAN

S6 Mechanical Engineering

MY UNDYING PRIDE

I've tried to speak
But my voice is drowned
Nobody can hear me Underneath,
buried in pride.



I've screamed
The shovel trying to dig
But the soil is too hard
Buried in pride.

Six feet under
Once a happy person
No longer hears variety
Their own opinion trapped within them
In that coffin
Underneath
Buried in pain.

Maybe their descendants
Will help dig them out
Try not to face the same fate
Of being underneath
Buried in pride.



— DEVANARAYAN S
S6 ME

PAPER PUBLICATION BY STUDENTS

- Sidharth S Nair, 'Design and fabrication of a low-cost reverse trike with hybrid drive mechanism',International Journal of Research and Analytical Reviews (IJRAR), Volume 12, 708-713, ISSN: 2349-5138, 2025
- Adithyan T S, 'Experimental investigation of TIG-welded Aluminium 7075 joints: weld application &thermal properties', Strad Research, Volume 12, 243-260, ISSN: 0039-2049, 2025.
- Ananda Krishna S, 'Development of an IOT-enabled fuel monitoring & alert system' International Journal of Research and Analytical Reviews(IJRAR), Volume 12, 655-664, ISSN:2349-5138, 2025
- Jerin Jose, 'Innovation in Semi-Automated Floor Cleaning: Design and Prototype Development' Strad Research, Volume 12, 234-242, ISSN: 0039-2049, 2025.
- Anuvind S S, 'Design and Integration of a semi- autonomous robot for agricultural mechanization'International Journal of Research and Analytical Reviews (IJRAR), Volume 12, 556-563, ISSN: 2349-5138, 2025.
- Kailas J K, 'Harnessing human power: a sustainable energy generation system using fitness' equipment International Journal of Research and Analytical Reviews (IJRAR), Volume 12,227-233, ISSN: 2349-5138, 2025.
- Jeevan P R, 'Design optimization and implementation of a maglev wind turbine prototype', High Technology Letters, Volume 31, 373-382, ISSN: 1006-6748, 2025.

CONFERENCE PRESENTATION BY STUDENTS

- AdithyanT.S, 'Stress unvield: Comparative ANSYS study of welded and unwelded Aluminium', International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.
- Aswin Raj, 'Stress unvield: Comparative ANSYS study of welded and unwelded Aluminium', International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.
- Akshara M.S, 'Stress unvield: Comparative ANSYS study of welded and unwelded Aluminium',International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.
- Ananda Krishna S,'Railway line crack detector', International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.

- Likhith J , ‘Conversion of mechanical energy to electrical energy using wrist curl machine’, International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.
- Kailas J K, ‘Conversion of mechanical energy to electrical energy using wrist curl machine’, International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.
- Bharathsethulal , ‘Conversion of mechanical energy to electrical energy using wrist curl machine’, International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.
- S Sivachaithanyaji, ‘Design & fabrication of reverse hybrid trike’, International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.
- Adersh P B, ‘Design & fabrication of reverse hybrid trike’, International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli on 09/05/2025.
- Sidharth S Nair International Conference on Engineering and Scientific Innovations 2025, Universal College of Engineering, Tirunelveli Design & fabrication of reverse hybrid trike 09/05/2025

PAPER PUBLICATION BY FACULTIES

- P Saravana Kumar, H Vinoth Kumar, P Pramerla, Bindu S S,G Saveetha,Nellore Manoj Kumar, Avinash Kumar, M Mathiyarasi “Enhanced Mechanical and tribological performance of Magnesium-Boron Carbide composites fabricated via stir casting for light weight structural applications”, Journal of Polymer and Composites.
- Dr.Bindu S S, “Enhanced Mechanical and Tribological Performance of Magnesium-Boron Carbide Composites Fabricated via Stir Casting for Light Weight Structural Applications”, Journal of Polymer and Composites, 13, 29-38 (2025): 2321-2810.
- Dr.Bindu S S, “Impact Analysis of Femoral Implant of Injured Human Knee Using Finite Element Analysis”, American Journal of Psychiatric rehabilitation, 14, 648-656 (2025): 1548-7768.
- Dr.Bindu S S, “Design and Fabrication of a Low-Cost Reverse Trike with Hybrid Drive Mechanism”, International Journal of Research and Analytical Reviews(IJRAR), 12, 708-713 (2025): 2349-5138.

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- Dr.Bindu S S, “Development of an IOT-enabled Fuel Monitoring & Alert System”, International Journal of Research and Analytical Reviews (IJRAR), 12, 655-664 (2025) : 2349-5138.
- Manoj A, “Innovation in Semi-Automated Floor Cleaning: Design and Prototype Development”, Strad Research, 12, 234-242 (2025): 0039-2049.
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- Manoj A, “Development of an IOT-Enabled Fuel Monitoring & Alert System, International”, Journal of Research and Analytical Reviews (IJRAR), 12, 655-664 (2025): 2349-5138.
- Krishnakumar K, “Impact Analysis of Femoral Implant of Injured Human Knee Using Finite Element Analysis”, American Journal of Psychiatric rehabilitation, 14, 648-656 (2025): 1548-7768.
- Krishnakumar K, “Experimental Investigation of TIG-welded Aluminium 7075 joints: Weld Application & Thermal Properties”, Strad Research, 12, 243-260 (2025): 0039-2049.
- Krishnakumar K, “Development of an IOT-Enabled Fuel Monitoring & Alert System”, International Journal of Research and Analytical Reviews (IJRAR), 12, 655-664 (2025): 2349-5138.
- Niju V S, “Impact Analysis of Femoral Implant of Injured Human Knee Using Finite Element Analysis”, American Journal of Psychiatric rehabilitation, 14, 648-656 (2025): 1548-7768
- Niju V S, “Design Optimization and Implementation of a Maglev Wind Turbine Prototype”, High Technology Letters, 31, 373-382 (2025): 1006-6748
- Niju V S, “Design and Integration of a Semi-Autonomous Robot for Agricultural Mechanization”, International Journal of Research and Analytical Reviews (IJRAR), 12, 556-563 (2025): 2349-5138

CONFERENCE PUBLICATION BY FACULTIES

- Dr. Bindu S S, has presented a paper titled “Experimental Investigation of TIG Welded Aluminium 7075 Joints: Weld Applications; Thermal Properties” in the International Conference on Engineering and Scientific Innovations 2025 held at Universal College of Engineering, Tirunelveli on 09/05/2025.
- Mr. Krishnakumar K, has presented a paper titled “Experimental Investigation of TIG Welded Aluminium 7075 Joints: Weld Applications; Thermal Properties” in the International Conference on Engineering and Scientific Innovations 2025 held at Universal College of Engineering, Tirunelveli on 09/05/2025.
- Mr. Joe Jeba Rajan K, has presented a paper titled “Harnessing Human Power: A Sustainable Energy Generation System Using Fitness Equipment” in the International Conference on Engineering and Scientific Innovations 2025 held at Universal College of Engineering, Tirunelveli on 09/05/2025.
- Mr. Sree Raj M P, has presented a paper titled “Harnessing Human Power: A Sustainable Energy Generation System Using Fitness Equipment” in the International Conference on Engineering and Scientific Innovations 2025 held at Universal College of Engineering, Tirunelveli on 09/05/2025.
- Mr. Manoj A, has presented a paper titled “Design and Fabrication of Semiautomatic Floor Cleaning Machine” in the International Conference on Engineering and Scientific Innovations 2025 held at Universal College of Engineering, Tirunelveli on 09/05/2025.
- Mr. Sree Mahesh M P, has presented a paper titled “Design and Fabrication of Low Cost Reverse Trike with Hybrid Drive Mechanism” in the International Conference on Engineering and Scientific Innovations 2025 held at Universal College of Engineering, Tirunelveli on 09/05/2025.
- Mr. Vijil J, has presented a paper titled “Design of an Automated Fuel Monitoring System for Vehicles” in the International Conference on Engineering and Scientific Innovations 2025 held at Universal College of Engineering, Tirunelveli on 09/05/2025.

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- Dr.Rajkumar Easwarapillai, , Dr.Bindu, S.S., Raj, S., Rajan, J. J., & Aswin, S. (2025, July), Industrial automation (1st ed.). SCI Publisher.
- Dr.Rajkumar Easwarapillai, R., Dr.Bindu, S.S., Raj, S., & Shareef, A. (2025, August), Fundamentals of robotics (1st ed.). Crown Publisher.
- Dr.Rajkumar Easwarapillai, R., & Aswin, S. (2025, September), Computer aided fixture design (1st ed.). SCI Publisher.
- Dr.Rajkumar Easwarapillai, R., Dr.Bindu, S.S, Raj, S., & Aswin, S. (2025, November), Machine drawing with real-time projects (1st ed.). SCI Publisher.
- Dr.Rajkumar Easwarapillai, Dr.Bindu, S.S., Raj, S., Kumar, K. K., Vikraman, A. V. J., & Aswin, S. (2025, August), Fundamentals of engineering graphics (1st ed.). Crown Publisher.
- Dr.Rajkumar Easwarapillai, R., Dr.Bindu, S.S, Raj, S., & Aswin, S. (2025, December), Introduction to CNC machines (1st ed.). SCI Publisher.

Our Proud Alumni





















Toboids Automata: A Story of Passion and Persistence.

Toboids Automata was never just a business venture—it was a pursuit born from a profound passion for robotics. What began as a simple vision driven by curiosity and determination has grown into a deep-tech company dedicated to pushing the boundaries of engineering and innovation.

In the early days, we spent countless hours studying control systems, analyzing structural stability, coding, and running simulation models. Every prototype taught us something new; every failure yielded valuable data; every improvement marked progress. When Toboids Automata emerged nearly eight years ago, the startup ecosystem was still taking shape. Structured mentorship, incubation support, and access to advanced facilities were limited. Even acquiring basic components posed challenges within India's nascent robotics landscape.

These obstacles became opportunities for innovation. To address the scarcity of components, we established an e-commerce platform for robotics and automation. Yet, building a robotics company required far more than technical skills—it demanded mastery of legal, regulatory, and financial frameworks. Each step, from company formation to compliance, had to be learned through experience.

The first four years were particularly demanding. At a time when AI tools and simulation platforms were rare, we designed and built most of our systems from the ground up—developing mechanical structures, motor control systems, embedded electronics, and algorithms through continuous iteration. This hands-on approach fostered resilience and an engineering mindset that became the cornerstone of our identity.

A defining moment in this journey came with national recognition through the DRDO Dare to Dream 4.0 Innovation Award, presented by the Honorable Defence Minister of India. The award acknowledged our indigenous development of the MTMUR—a robot capable of operating in air, on land, on water, and underwater. This milestone validated our belief in purposeful innovation and underscored the significance of indigenous robotics in strengthening national capabilities.

Our efforts have also led to multiple patents, reflecting our commitment to original research, precision engineering, and sustained technological advancement. Today, Toboids Automata stands as a symbol of persistence and passion, with a diverse product portfolio that includes MYKE (Social Robot), MTMUR, drones, 3D printers, autonomous mobile robots, MALVA (humanoid robot), toy-based products, and research platforms.

Looking ahead, we continue to focus on advancing indigenous robotics technologies—humanoids, autonomous systems, and intelligent machines that address real-world challenges. Built on years of experimentation and unwavering belief in the power of robotics, this journey is far from over. We remain dedicated to shaping a future where globally competitive robotics solutions emerge from India.



Adarsh R S (2011-2015 Batch)
M. Tech (RAU),
MBA, M. Tech (AI), MCA
Founder of Toboids Automata Pvt Ltd

RAJADHANI INSTITUTE OF
ENGINEERING AND TECHNOLOGY

Thank you

THE MECH
CHRONICLES
2025