

# Precision Pulse

*A Newsletter of the Department of Mechanical Engineering*

**AIEMS**  
BENGALURU

WHERE  
ACCURACY  
MEETS

INNOVATION



## PRECISION PULSE EVENT LIBRARY

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## Welcome Readers!

It gives us great pleasure to welcome you to Precision Pulse, the official newsletter of the Department of Mechanical Engineering at Amruta Institute of Engineering & Management Sciences, Bidadi. Since its inception in 2012, our department has been committed to academic excellence, innovation, and holistic development. With advanced laboratory facilities and the esteemed BVVS AIEMS – Toyota Centre of Excellence, we continue to empower students and faculty to push the boundaries of engineering.

In this edition of Precision Pulse, we proudly present a glimpse into our recent milestones - ranging from funded projects, patents, outreach activities and publications to faculty development programs, student and faculty achievements, and cultural & sports activities. I invite you to explore the energy and enthusiasm that define our department and celebrate the collective efforts of our vibrant academic community.



**Prof. Nagappa Pattanashetti**  
Chief Editor, Precision Pulse



**Dr. Rajeshwar Kadadevaramath**  
Professor & Head of the Department



## Vision

*“To produce Mechanical Engineers to suit diverse sectors of industry namely, design, manufacturing, services, research & development, information technology and to promote technology & society symbiosis.”*

## Mission

1. Imparting knowledge in basic and applied areas of Mechanical Engineering.
2. Providing state-of-the art laboratories and infrastructure for academics and research.
3. Facilitating faculty development through continuous improvement.
4. Promoting research, education and training in frontier areas of Technology.
5. Strengthening collaboration with industries, research organisations and institutes for internship, joint research and consultancy.
6. Imbibing social and ethical values in students, staff and faculty through personality development programs.

## From the HOD's Desk

**Dr. Rajeshwar Kadadevarmath**  
**M.E., Ph.D.**

The Department of Mechanical Engineering drives innovation across industries - from energy and automation to robotics and design. At Amruta Institute, since our department's inception in 2012, we've focused on building skilled, forward-thinking engineers. We blend theory with hands-on experience to meet today's global challenges. Join us in shaping a better, engineered future.





# About the Department

*Estd.: 2012*

Established in 2012 with an intake of 60 students, the Department of Mechanical Engineering at Amruta Institute is committed to academic excellence, research, and industry readiness. Our well-qualified faculty focus on quality teaching, hands-on training, and mentoring students for future challenges.

The department is equipped with state-of-the-art laboratories and a computer center with licensed software like Solid Edge, ANSYS, Edge CAM, and more. These facilities support both academic learning and research, with students actively involved in funded projects from KSCST, DST, VGST, and others.

We have strong industry connections through MoUs with reputed companies such as CNC India Tools Pvt. Ltd., Bhavani Industries, Grupo Antolin, Sona Group, and more. These collaborations ensure 100% internship opportunities and foster industry-oriented projects.

The department organizes national conferences, expert talks, industrial visits, and soft skills training to enhance student exposure. A dedicated Department Advisory Board (DAB), comprising members from academia and industry, guides continuous improvement.



**"ENGINEERING MOTION,  
POWERING INNOVATION –  
WE BUILD THE FUTURE, ONE  
MECHANISM AT A TIME."**



# Department Staff

## Teaching Faculty



**Dr. Rajeshwar Kadadevaramath**  
*Professor & Head of the Department*



**Dr. Vinod Kumar Biradar**  
*Associate Professor*



**Prof. Kari Ramakrishna**  
*Assistant Professor*



**Prof. Nagappa Pattanashetti**  
*Assistant Professor*



**Prof. Manjunath D Kerakalamatti**  
*Assistant Professor*



**Prof. Jagadish K K**  
*Assistant Professor*



**Prof. Kotresh U.**  
*Assistant Professor*



**Prof. Mallikarjunappa D N**  
*Guest Faculty*

## Non - Teaching Faculty

**Mr. Kumaraswamy A S**  
*Instructor*

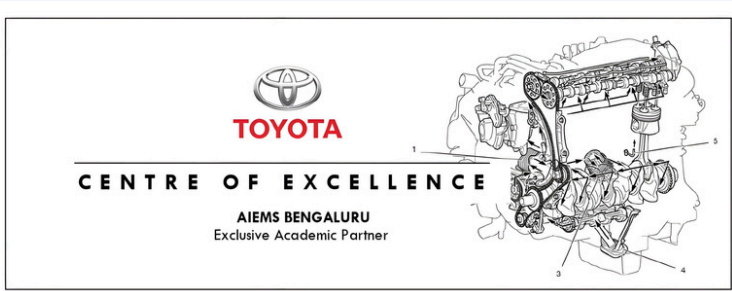
**Mr. Abhijit D S**  
*Instructor*

**Mr. Sagar R P**  
*Attender*



# Skill Lab & Centre of Excellence

## BVVS AIEMS - Toyota Centre of Excellence



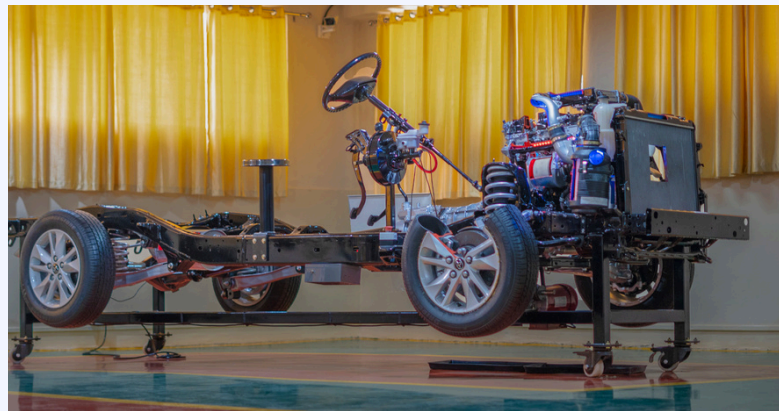
Established in 2019, the Toyota Centre of Excellence Skill Lab at the Mechanical Engineering Department of Amruta Institute of Engineering & Management Sciences, Bidadi, has been playing a pivotal role in equipping students with practical, industry-relevant skills from the very start of their engineering journey.

This state-of-the-art facility is developed in collaboration with Toyota, one of the world's leading automobile manufacturers, to provide hands-on exposure to the technologies and systems that drive modern automotive engineering.

The lab features two comprehensive vehicle setups - Toyota Etios and Toyota Innova Crysta - both designed with cut sections of key components. These specialized setups allow students to visualize and understand the internal workings of major automotive systems such as the engine, transmission, suspension, braking, and steering mechanisms. The Toyota Skill Lab is not limited to automotive education alone. It also serves as a foundational training ground for first-year students across all engineering disciplines, introducing them to a wide array of core engineering processes. These include:

- Welding and joining techniques
- Forging and casting methods
- Lathe machining operations
- Carpentry skills
- Computer-Aided Design (CAD)
- Computer-Aided Manufacturing (CAM)

Through this integrative learning approach, students gain not only theoretical knowledge but also vital practical skills that prepare them for multidisciplinary challenges in the industry. The Toyota Centre of Excellence continues to be a cornerstone of our department's commitment to experiential learning, innovation, and industry alignment - nurturing the next generation of skilled, confident, and competent engineers.



# Awards & Recognitions

## UK Design Patent: Automated Solar - Powered Weeding Robot

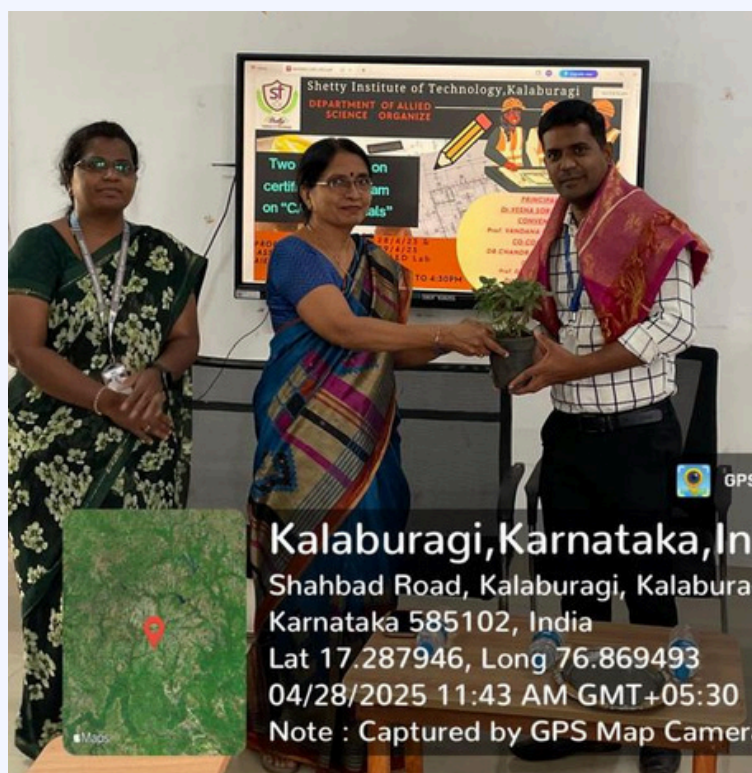


**Prof. Nagappa Pattanashetti** has been awarded a **UK Design Patent** for his innovation titled, "**Automated Solar-Powered Weeding Robot.**"

This invention integrates sustainable solar technology with automation to assist in efficient and eco-friendly agricultural weed management.

The recognition highlights Prof. Pattanashetti's contribution to advancing smart farming solutions through design and innovation at an international level.

## Resource Person



## CAED Essentials

**Prof. Jagadish K K** was invited as a resource person for the workshop titled, "**CAED Essentials**", organized by Shetty Institute of Technology, Kalaburagi, on 28<sup>th</sup> April 2025.

The workshop aimed to equip participants with foundational knowledge and practical insights in to Computer Aided Engineering Drawing (CAED), an essential component in engineering education. Prof. Jagadish, known for his expertise in the subject and his engaging teaching methodology, delivered an insightful session that covered both theoretical concepts and hands-on applications.



# Awards & Recognitions

## Journal Reviewer

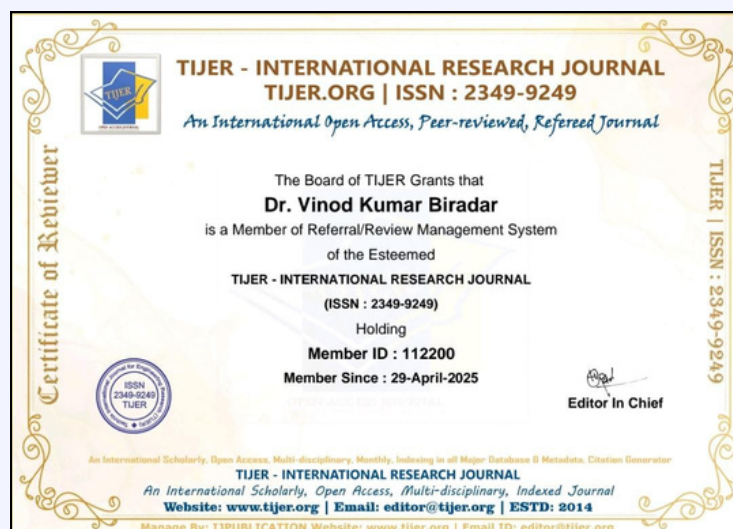


### Reviewer Certificate for IJRAR

The Board of IJRAR has awarded "Reviewer Certificate" to **Dr. Vinod Kumar Biradar** for the esteemed Journal **International Journal of Research and Analytical Reviews (IJRAR)**.

### Reviewer Certificate for TIJER

The Board of TIJER has awarded "Reviewer Certificate" to **Dr. Vinod Kumar Biradar** for the esteemed Journal **International Research Journal (TIJER)**.



# Funded Projects & Journal Publications

## Development of an Arduino Controlled Pesticide Sprayer Robot

### KSCST Funded Project

Grants Received: ₹6,000 /-

The project titled, “Development of an Arduino Controlled Pesticide Sprayer Robot for Agriculture”, guided by **Prof. Nagappa Pattanashetti**, has been shortlisted for funding by the **Karnataka State Council for Science & Technology (KSCST)** under the **48<sup>th</sup> series of the Student Project Programme**.

The project is undertaken by final-year Mechanical Engineering students:

- **Thirumala Reddy K**
- **Manya S L**
- **Vinay Kumar Y**

The project focuses on developing a cost-effective, automated solution for safe and efficient pesticide spraying in agriculture.

**ಕರ್ನಾಟಕ ರಾಜ್ಯ ವಿಜ್ಞಾನ ಮಂಡಳಿ**  
**ಕಂಪ್ಯೂಟರ್ ಮಂಡಳಿ**  
(An autonomous organisation under Dept. of Science and Technology, Government of Karnataka)

**50**  
**KSCST**  
Celebrating Golden Jubilee 1973-2023

**Karnataka State Council for Science and Technology**  
(An autonomous organisation under Dept. of Science and Technology, Government of Karnataka)

**Dr. U T Vijay**  
Executive Secretary

Ref: 7.1.01/SPP/713

14th March, 2025

To,  
The Principal  
Amrutha Institute of Engineering and Management Sciences  
Bidadi Industrial Zone Near Toyota Kirloskar Motors,  
Bengaluru - 562 109.

Dear Sir/Madam,

**Sub :** Sanction of Student Project - 48th Series: Year 2024-2025

**Project Proposal Reference No. :** 48S\_BE\_2885  
**Ref :** Project Proposal entitled **DEVELOPMENT OF AN ARDUINO CONTROLLED PESTICIDE SPRAYER ROBOT FOR AGRICULTURE**

We are pleased to inform that your student project proposal referred above, has been approved by the Council under "Student Project Programme - 48th Series". The project details are as below:

Student(s)	Department	Sanctioned Amount (in Rs.)
Mr. THIRUMALA REDDY K	MECHANICAL ENGINEERING	6,000.00
Ms. MANYA S L		
Mr. VINAY KUMAR Y		
Guide(s)	Prof. NAGAPPA PATTANASHETTI	

**Comments / Suggestions of the Experts**

THE PROJECT IS AMBITIOUS. ALTHOUGH IT LACKS RELEVANCE, THERE IS GOOD AMOUNT OF LEARNING FOR THE STUDENTS.

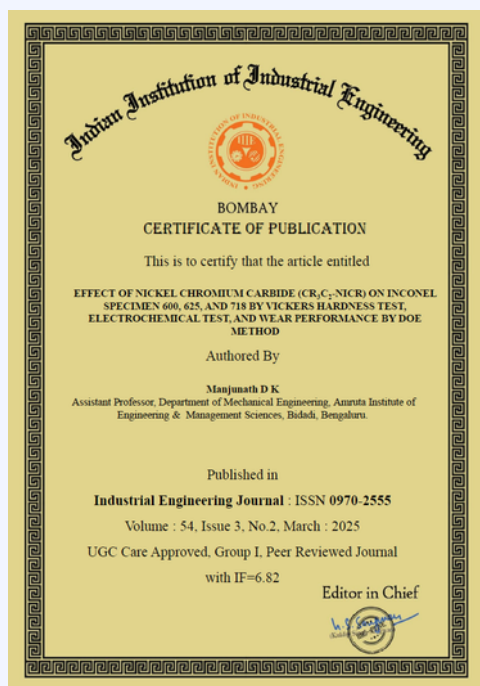
**Instructions:**

- The project should be conducted based on the objectives outlined in the submitted proposal.
- Any changes to the project title, objectives, or student team will result in the project's rejection, and your institution will be required to return the sanctioned funds to KSCST.
- Please include the project reference number printed above in all future correspondence.
- Upon project completion, a 2-3 page synopsis (in MS Word format) must be uploaded to the following Google Forms link: <https://forms.gle/EqAUv7AwPxqAjeTA>. The synopsis should include following:
  - Project Reference Number
  - Title of the project
  - Name of the College & Department
  - Name of the students & Guide(s)

Indian Institute of Science Campus, Bengaluru - 560012  
office.kscst@iisc.ac.in, office@kscst.org.in

080-23341652, 23348848/49/40  
<https://kscst.karnataka.gov.in> & <https://www.kscst.org.in>

## National Level Journal Publication



### Industrial Engineering Journal

**Dr. Vinod Kumar Biradar & Prof. Manjunath D Kerakalamatti** have published a paper titled, “Effect of Nickel Chromium Carbide (Cr<sub>3</sub>C<sub>2</sub>-NiCr) on Inconel Specimen 600, 625, and 718 by Vickers Hardness Test, Electrochemical Test, and Wear Performance by DOE Method”.

The journal has been published in the **Industrial Engineering Journal**, a **Group - I UGC Care approved & peer reviewed journal**, with an impact factor of 6.82, in the month of March 2025.



# Faculty Development Programs Attended



# Workshops Attended

Sl. No.	Name of the Faculty	Title of the Workshop	Organized by	Date (From - To)
1	Prof. Kari Ramakrishna	Two Days National Workshop on, "Applied Artificial Intelligence"	The Department of Artificial Intelligence and Machine Learning, Shetty Institute of Technology, Kalburgi	28th February to 01st March 2025
2	Prof. Manjunath D Kerakalamatti	Two Days National Workshop on, "Applied Artificial Intelligence"	The Department of Artificial Intelligence and Machine Learning, Shetty Institute of Technology, Kalburgi	28th February to 01st March 2025
3	Prof. Jagadish K K	Two Days National Workshop on, "Applied Artificial Intelligence"	The Department of Artificial Intelligence and Machine Learning, Shetty Institute of Technology, Kalburgi	28th February to 01st March 2025
4	Prof. Jagadish K K	5 - Day Online workshop on, "Rural Technologies with Special Emphasis on North East India"	National Institute of Technology, Mizoram	17th to 21st March 2025
5	Dr. Vinod Kumar Biradar	Autonomous Vehicle Design	Thapar Institute of Engineering & Technology, Punjab	16 <sup>th</sup> April 2025

## Outreach Activity



### "Reduce, Reuse and Revive: The Fight Against Single - Use Plastics"

**Motive:** To create awareness on the environmental impact of single-use plastics and to suggest alternatives

**Date:** 14<sup>th</sup> March 2025

**Venue:** Government Higher Primary School, Ramanahalli, Bidadi, Ramanagara, Karnataka

**Faculty Coordinators:** Dr. Vinod Kumar Biradar, Prof. Nagappa Pattanashetti, Prof. Manjunath D K



# Sports Events

## Chess Competiton



### Chess Competition

**Date:** 05<sup>th</sup> April 2025

**Venue:** BVVS AIEMS - Toyota Centre of Excellence, Department of Mechanical Engineering

**Faculty Coordinators:** Prof. Nagappa Pattanashetti

**Winners:**

- **First Place:** Mr. Manoj Kumar B (1AR23ME001), 4<sup>th</sup> Semester, Mechanical Engineering
- **Second Place:** Mutturaj H P (1AR24ME404), 4<sup>th</sup> Semester, Mechanical Engineering

## Carrom Competition



### Carrom Competition

**Date:** 05<sup>th</sup> April 2025

**Venue:** BVVS AIEMS - Toyota Centre of Excellence, Department of Mechanical Engineering

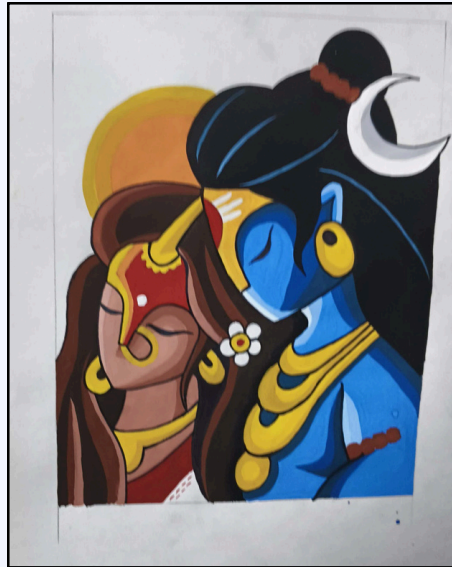
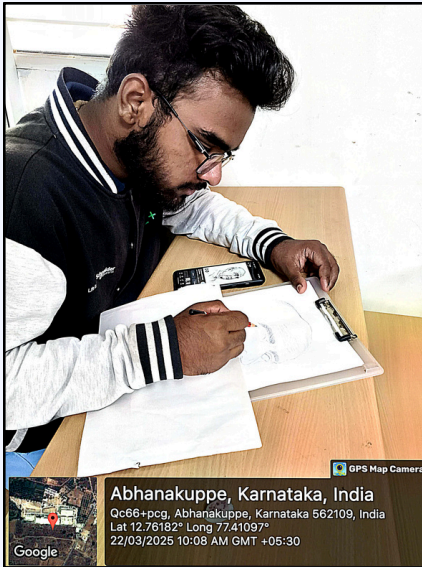
**Faculty Coordinators:** Prof. Kotresh U.

**Winners:**

- **First Place:** Mr. Prajwal R. (1AR24ME406), 4<sup>th</sup> Semester, Mechanical Engineering
- **Second Place:** Mutturaj H P (1AR24ME404), 4<sup>th</sup> Semester, Mechanical Engineering

# Cultural Events

## Pencil Sketching & Painting Competition



### Pencil Sketching & Painting Competition

**Date:** 22<sup>nd</sup> March 2025

**Venue:** Classroom No. 120, Department of Mechanical Engineering

#### Faculty Coordinators:

- Dr. Vinod Kumar Biradar
- Prof. Manjunath D Kerakalmatti

## Singing Competition



### Singing Competition

**Date:** 22<sup>nd</sup> March 2025

**Venue:** Classroom No. 120, Department of Mechanical Engineering

#### Faculty Coordinators:

- Dr. Vinod Kumar Biradar
- Prof. Manjunath D Kerakalmatti

## Industry Partners - MoUs & Linkages

- Bhavani Industries, Bidadi
- CNC India Tools Pvt. Ltd., Bengaluru
- Chaithanya Precision Pvt. Ltd., Bengaluru
- Distinct Productivity Solutions, Bengaluru
- Grupo Antolin Pvt. Ltd., Bidadi
- Kshipra Simulations, Bengaluru
- Mac Precitec India, Bengaluru
- Madhus Garage Equipments Pvt. Ltd.
- Medini Technologies, Bengaluru
- Nikit Engineers Pvt. Ltd., Harohalli
- PEE Solar India, Bengaluru
- Sree Mookambika Precision Industries, Bengaluru
- Sona Group of Industries, Bengaluru



# Labs & Infrastructure

CAD, CAM Lab



Material Testing Lab



Foundry & Forging Lab



Toyota CoE



Workshop



Classroom



**AIEMS**  
BENGALURU

## Amruta Institute of Engineering & Management Sciences

Approved by AICTE, New Delhi, Recognized by Government of Karnataka & Affiliated to VTU, Belagavi, Accredited by NAAC

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