

# MECH MAGAZINE



■ Volume 05  
■ Issue 01  
■ JANUARY 2026

## DEPARTMENT OF MECHANICAL ENGINEERING

## Department Vision & Mission

### Vision

To endeavour the excellence in Mechanical Engineering field globally by producing competent and confident graduates to face the future challenges.

### Mission

- ❖ Provide transformative education to students and improving their skills to face the global challenges in Mechanical and Allied Engineering.

- ❖ Nurture innovation, attitude, creativity, core competency and serve the society through requisite infrastructure and environment.

- ❖ Inculcate real world challenges, emerging technologies and endeavour the students to become entrepreneurs or employable.

### Program Educational Objectives (PEOs)

**PEO I :** Graduates shall excel in the field of design, thermal, materials and manufacturing, as successful engineers or researchers or as entrepreneurs.

**PEO II :** Graduates will analyze problems, design solutions and develop products as a team member in advanced industrial projects.

**PEO III :** Graduates shall have professional ethics, team spirit, life-long learning, good oral and written communication skills and adopt corporate culture, core values and leadership skills.

### Program Specific Outcomes (PSOs)

- ❖ **PSO 1 : Professional skills:** Students shall understand, analyze, design and develop integrated equipment, thermal devices and composite components.

- ❖ **PSO 2 : Competency:** Students shall qualify at the State, National and International level competitive examination for employment, higher studies and research.

### Program Outcomes (POs)

Engineering Graduates will be able to:

**PO1: Engineering Knowledge:** Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

**PO2: Problem Analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

**PO3: Design/Development of Solutions:** Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

**PO4: Conduct Investigations of Complex Problems:** Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

**P05: Engineering Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

**P06: The Engineer and The World:** Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

**P07: Ethics:** Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

**P08: Individual and Collaborative Team work:** Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

**P09: Communication:** Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

**P010: Project Management and Finance:** Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

**P011: Life-Long Learning:** Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

### CHIEF PATROS

Dr. PSK.R.Periaswamy

Chairman

Kongunadu Educational Institutions

### ADVISORS

Dr. R.Asokan,

Principal

Dr. D.Jagadeesh,

Professor & Head/MECH

Dr. K.Periasamy,

Professor/MECH

### EDITORS

Dr. G.Saravanan, Associate Professor/MECH

Mr. N.Kawin, Assistant Professor / MECH

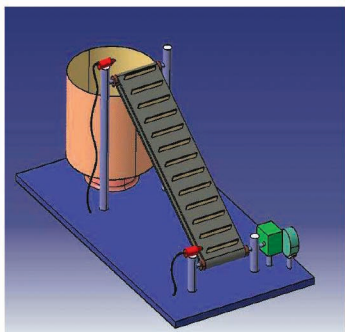
M.Mathan (IV-MECH)

A.Gowtham (III-MECH)

P.Yuvaraj (II-MECH)

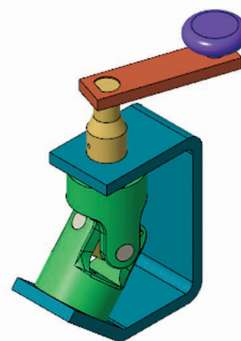
# 3D MODELS CREATED BY STUDENTS

## ROLLER MECHANISM



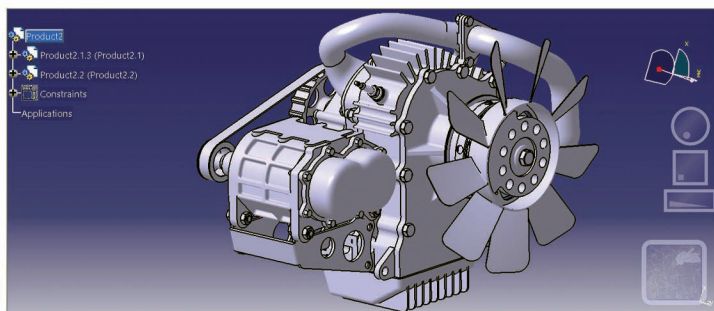
K.Santhosh Kumar,  
IV- Mech

## U-JOINT



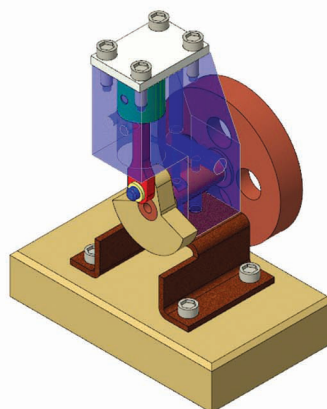
M.Mathan,  
IV- Mech

## MOTOR ASSEMBLY



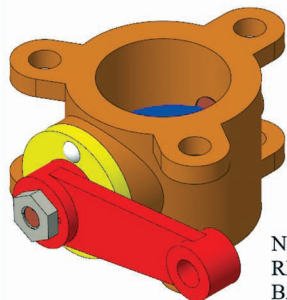
P.L.Raveena,  
IV- Mech

## AIR MOTOR ASSEMBLY



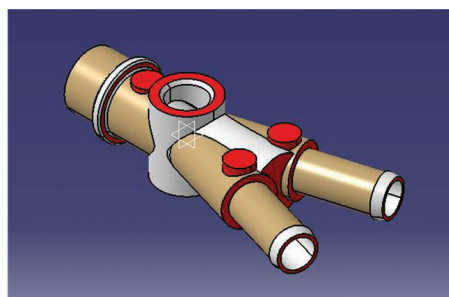
NAME : KRISHNAN A  
REG : 621322114043  
BATCH: 2022-2026

## BUTTERFLY VALVE



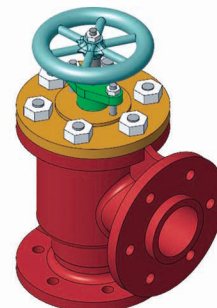
NAME : KRISHNAN A  
REG NO: 621322114043  
BATCH : 2022-2026

## COUPLING



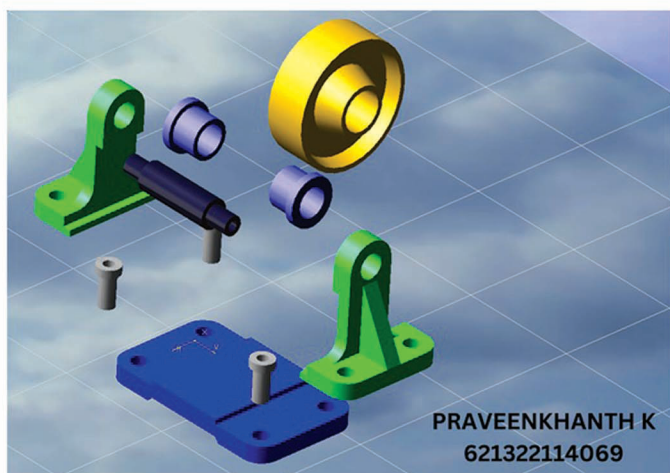
B.Srinath,  
IV- Mech

## FEED CONTROL VALVE



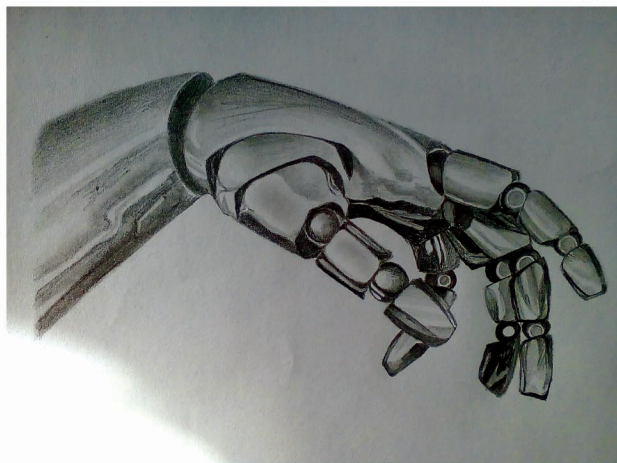
NAME : KRISHNAN A  
REG NO : 621322114043  
BATCH : 2022-2026

## PART DRAWINGS CREATED BY STUDENTS



## STUDENTS CREATIVITY

### ROBOT ARM



S.S.Navin,  
II- Mech

### SQUIRREL



J.Caleb Thomas,  
II- Mech

### LOTUS



M.Rajprasad,  
II- Mech

### CAR



D.Subash,  
II- Mech

### DOG



S.Velmurugan,  
II- Mech

# STUDENTS POEM

## LIFE

Life is a road with turns unknown,  
A path we walk, yet not alone.  
Through shining days and skies of grey,  
We learn, we fall, we find our way.  
Each tear that falls, each smile we wear,  
Builds quiet strength and shapes our care.  
The storms may roar, the winds may rise,  
But hope still whispers in our skies.  
Dreams are seeds within the soul,  
Faith and effort make them whole.  
Step by step, though slow it seems,  
Life moves forward on our dreams.  
Not every night is filled with stars,  
Not every heart escapes its scars.  
Yet dawn arrives with gentle light,  
To prove the dark won't win the fight.  
So live with kindness, bold and true,  
Let purpose guide in all you do.  
For life's true beauty, deep and wide,  
Is found in love we hold inside.

K.Jayavalli,  
III- Mech

## THE JOURNEY

Travel is more than moving feet,  
It's stories and strangers we happen to meet.  
Mountains that whisper, oceans that sing,  
Roads full of wonder each new day brings.  
A map may show where paths will bend,  
But not the lessons journeys send.  
In distant lands and skies so wide,  
We often find our true self inside.  
Sunsets glow in colors untold,  
Memories shine brighter than gold.  
Each step away, each mile we roam,  
Teaches the heart what "home" means.  
The world's a book with pages wide,  
Turned by courage, not by guide.  
For those who travel, learn to see—  
The journey shapes who we will be

S.Madheshwaran,  
III- Mech

## SCHOOL DAYS

School days bloom like morning light,  
Filled with laughter, warm and bright.  
Books in hand and dreams in eyes,  
Learning wings that help us rise.  
Chalk-dust air and ringing bells,  
Stories every classroom tells.  
Friends who share both joy and tears,  
Moments treasured through the years.  
Lessons more than words we write,  
Truth and courage, wrong and right.  
Teachers guide with patient care,  
Lighting minds with love they share.  
Playground talks and silent tests,  
Little fears inside our chests.  
Yet every challenge makes us strong,  
Teaching hearts where we belong.  
Years may pass and roads may part,  
But school stays living in the heart.  
For in those halls we learned to be  
The best version of you and me.

S.Komalaselvan,  
III- Mech

## படிப்பு - வெற்றியின் பாதை

படிப்பு ஒரு பாலம், கனவுகளுக்கு வழி,  
அறிவு ஒரு செல்வம், வாழ்விற்கு ஒளி.  
ஒவ்வொரு பக்கமும் திறக்கும் உலகம்,  
ஒவ்வொரு நாளும் வளர்க்கும் நம்பிக்கை மலர்.  
கஷ்டம் வந்தாலும் புத்தகம் துணை,  
கற்றல் என்றால் வெற்றி நிச்சயம் உணை.  
சிறு முயற்சி தினமும் சேர,  
பெரும் சாதனை நாளை தேர்.  
இரவு விழித்தாலும் கனவு உறங்காது,  
முயன்ற மனதில் தோல்வி தங்காது.  
ஆசிரியர் சொல் வழிகாட்டும் தீபம்,  
அறிவு தரும் வாழ்க்கைக்கு சீபம்.  
படிக்கும் மாணவன் உயரம் தொடுவான்,  
பொறுமை கொண்டு உலகை வெல்வான்.  
இன்று உழைப்பு, நாளை புகழ்,  
படிப்பு தான் வாழ்க்கையின் மிகப்பெரும் விழா.

R.Vignesh,  
IV- Mech

## நட்சத்திரங்கள்

இருள் வானில் மின்னும் ஒளி,  
இவை தான் நட்சத்திரங்கள் - இயற்கையின் பொலி.  
தொலைவில் இருந்தும் நம்பிக்கை தரும்,  
மெளனமாக வாழ்வின் பாடம் சொல்லும்.

சிறு ஒளி கூட இருளை உடைக்கும்,  
சிறு முயற்சி கூட வெற்றியை உருவாக்கும்.  
வானத்தை நோக்கி கனவு காண,  
நட்சத்திரம் போல நீயும் மிளிர் மாணா.

ஒவ்வொரு நட்சத்திரமும் ஒரு கதை,  
ஒவ்வொரு ஒளியிலும் ஒரு நம்பிக்கை.  
உயரம் தொட்டாலும் நிலம் மறவாதே,  
ஒளி தரும் வாழ்வு உலகை மகிழ்வாதே.

நேற்று பார்த்த நட்சத்திரம் இன்று இல்லை,  
ஆனால் அதன் ஒளி இன்னும் துளிரக்கும் எல்லை.  
அப்படியே அறிவு சேர்த்து வளர்ந்தால்,  
உன் பெயர் கூட வானில் மின்னும் நாள்தான்.

S.Harish,  
III- Mech

## மாணவர் கனவு

காலை ஒளியில் கனவு விழிக்கும்,  
கையில் புத்தகம் உலகம் திறக்கும்.  
சிறு முயற்சி பெரிய வெற்றி,  
நம்பிக்கை தான் வாழ்வின் செற்றி.

தோல்வி வந்தால் தளர்ந்து போகாதே,  
தூண் போல நின்று முன்னே போவே.  
முயற்சி விதைத்தால் பலன் மலரும்,  
மனதில் நம்பிக்கை என்றால் வாழ்க்கை விளையும்.

ஆசிரியர் வார்த்தை விளக்காய் எரியும்,  
அறிவு பாதை ஒளியாய் திரியும்.  
நண்பர்கள் சேர்ந்து பயணம் செய்தால்,  
கற்றல் ஒரு இனிய அனுபவம் ஆகும்.

நாளைய உலகம் உன்னை காத்தது,  
நம்பிக்கையுடன் நீ முன்னே நட.  
மாணவர் இன்று, தலைவர் நாளை,  
உன் கனவு தான் உன் வாழ்வின் தாளை.

A.Diwakar,  
III - Mech

## STUDENTS THOUGHTS

### The Future of Flight : Smart Technologies in Modern Aviation

#### Introduction

Aviation has revolutionized the way people and goods move across the globe. Since the Wright brothers' first flight in 1903, the industry has continuously evolved with groundbreaking innovations. In recent years, aviation technology has advanced rapidly, focusing on safety, efficiency, sustainability, and passenger experience. These developments are reshaping the future of air travel and making it smarter, greener, and more connected.

#### Key Recent Technologies in Aviation

##### 1. Electric and Hybrid Aircraft

❖ To reduce fuel consumption and emissions, companies are developing electric and hybrid aircraft. These eco-friendly planes aim to support short-haul flights with lower operating costs and minimal environmental impact.

##### 2. Sustainable Aviation Fuels (SAF)

❖ Made from renewable resources like bio-waste and algae, SAF reduces carbon emissions by up to 80% compared to conventional jet fuel. Major airlines have already begun blending SAF into their operations.

##### 3. Artificial Intelligence (AI) and Automation

❖ AI is being used in flight planning, predictive maintenance, and air traffic management. Automated systems help pilots optimize fuel use, detect mechanical issues early, and enhance flight safety.

##### 4. Advanced Materials and 3D Printing

❖ Lightweight composite materials such as carbon fiber reduce fuel consumption. 3D printing allows faster and cheaper production of aircraft components, improving efficiency and customization.

##### 5. Next-Generation Air Traffic Management

❖ Modern air traffic systems use satellite-based navigation (like ADS-B) to improve flight paths, reduce delays, and enhance safety.

##### 6. Passenger Experience Innovations

❖ Recent improvements include in-flight high-speed Wi-Fi, personalized entertainment, larger windows, noise-reducing cabins, and advanced seating designs for comfort.

##### 7. Urban Air Mobility (UAM) and Drones

❖ Electric Vertical Take-off and Landing (eVTOL) aircraft are being developed as air taxis for urban transport. Drones are also widely used for cargo delivery, surveillance, and emergency response.

#### Benefits of Recent Aviation Technologies

- Environmental Protection through reduced emissions and fuel consumption.
- Cost Savings for airlines due to efficient designs and alternative fuels.
- Increased Safety with AI-assisted monitoring and automation.
- Better Passenger Comfort through improved cabin design and digital services.
- Future Mobility Solutions with air taxis and drone-based logistics.

## Challenges and Future Prospects

While these innovations hold great promise, challenges include high development costs, regulatory hurdles, battery limitations for electric aircraft, and global infrastructure needs. However, with ongoing research, investments, and global cooperation, the aviation industry is moving closer to achieving sustainable and smart air travel by 2050.

## Conclusion

Recent aviation technology is transforming the skies with a focus on safety, sustainability, and passenger experience. From electric planes and biofuels to AI-driven systems and urban air mobility, the aviation industry is embracing innovation at an unprecedented pace. These advancements will not only make air travel more efficient but also play a vital role in addressing climate change, paving the way for a future where flying is greener, smarter, and more accessible.

**T.Palanimuthu,  
IV- Mech**

## Sustainable Energy Solutions for a Greener Future

### Introduction

Energy is the backbone of human civilization. From lighting our homes to running industries, transportation, and technology, energy is essential in every aspect of modern life. Traditionally, most of the world's energy has come from non-renewable sources such as coal, oil, and natural gas. However, these fossil fuels are limited, cause severe environmental damage, and contribute to global warming. As a solution, renewable energy has emerged as a clean, reliable, and sustainable alternative.

### What is Renewable Energy?

Renewable energy comes from natural sources that are constantly replenished. Unlike fossil fuels, they do not run out and are eco-friendly. Common sources include:

- Solar energy – captured from sunlight using solar panels.
- Wind energy – generated from wind turbines.
- Hydropower – produced from the flow of water in rivers and dams.
- Biomass energy – obtained from organic matter such as plants and waste.
- Geothermal energy – harnessed from heat within the Earth.

### Advantages of Renewable Energy

1. Environmentally Friendly – Renewable energy reduces greenhouse gas emissions and air pollution.
2. Sustainability – Unlike fossil fuels, these resources are inexhaustible.
3. Energy Security – Countries can reduce dependence on imported fuels.
4. Job Creation – The renewable energy sector creates employment in manufacturing, installation, and maintenance.
5. Economic Benefits – Falling technology costs make renewable energy increasingly affordable.

### Challenges in Renewable Energy

Despite its advantages, renewable energy faces some challenges:

- Intermittency – Solar and wind power depend on weather conditions.

- High Initial Cost – Installation of solar panels, wind turbines, and hydro plants requires significant investment.
- Storage Issues – Efficient energy storage systems like advanced batteries are still developing.
- Land and Resource Use – Large-scale projects may require vast land and can impact ecosystems.

## Global and Indian Perspective

Globally, countries are investing heavily in renewable energy to meet climate goals under the Paris Agreement. Nations like Germany and China are leading in solar and wind adoption, while Iceland utilizes geothermal power extensively.

In India, renewable energy has become a priority under initiatives like the National Solar Mission and Renewable Energy Development Programs. India aims to achieve 500 GW of renewable energy capacity by 2030, making it one of the largest clean energy producers in the world.

## Future of Renewable Energy

With rapid technological advancements, the future of renewable energy looks bright. Innovations such as smart grids, improved energy storage, floating solar farms, and offshore wind projects are expected to revolutionize the energy sector. The integration of artificial intelligence (AI) and the Internet of Things (IoT) will make energy systems more efficient and reliable.

## Conclusion

Renewable energy is not just an alternative—it is the future of global energy. By reducing dependence on fossil fuels, it offers a pathway towards sustainable development, cleaner air, and a healthier planet. While challenges exist, continued innovation, government policies, and public awareness will ensure a smooth transition to a renewable-powered world. Embracing renewable energy today means securing a brighter and greener tomorrow.

**K.Harini,  
IV- Mech**

# COLLEGE VISION & MISSION

## VISION

“To become an internationally renowned Institution in technical education, research and development, by transforming the students into competent professionals with leadership skills and ethical values.”

## MISSION

- ❖ Providing the best resources and Infrastructure.
- ❖ Creating Learner centric Environment and continuous –Learning.
- ❖ Promoting Effective Links with Intellectuals and Industries.
- ❖ Enriching Employability and Entrepreneurial Skills.
- ❖ Adapting to Changes for Sustainable Development.



Namakkal - Trichy Main Road, Thottiam, Trichy (Dt) 621 215, Tamilnadu.

Mob : 80125 05000, 80125 05011, 80125 05054      email : [admission@kongunadu.org](mailto:admission@kongunadu.org)

[www.kongunadu.ac.in](http://www.kongunadu.ac.in)