



# MECHATRONICS REWIND



## WHAT'S INSIDE?

- MEMORANDUM OF UNDERSTANDING (MOU)
- WEBINARS & EVENTS
- TECHNICAL DRILLING SERIES
- STUDENT MENTORSHIP PROGRAM
- FACULTY & STUDENT ACHIEVEMENTS
- PATENTS & PROJECTS

UNITY IS STRENGTH  
WHEN THERE IS TEAMWORK AND  
COLLABORATION, WONDERFUL THINGS CAN  
BE ACHIEVED

FIRST ISSUE 2021

JAN - JUN  
2021

### READ

#### STUDENT MENTORSHIP

CONSTRUCTIVE INTERACTION,  
GUIDANCE, AND MENTORSHIP FOR  
JUNIOR STUDENTS BY SENIOR  
STUDENTS.

AUTOMATIC PCB DEFECT  
DETECTION

TELE-OPERATION OF 4W  
VEHICLE

SCREEN EASY

HI-TECH FACE MASK

I5-SAT

FACULTY &  
STUDENT  
ACHIEVEMENTS

# NOTE TO READERS

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We are delighted to promulgate the Newsletter of the Department of Mechatronics Engineering. It is our privilege to share this newsletter with all because you are one of our impetuous factors and the one who extends constant support.

Within few weeks after declaring lockdown, we have put in place our curriculum and have continued to adapt it to our student's needs and capabilities. We have abide by all the orders and procedures necessary for the efficient and effective operation of the college. From a staff's perspective, we are establishing a sustainable professional learning community to incessantly look for improvements and innovative teaching strategies to support students to reach their full potential.

This magazine covers the events, webinars, programs initiated and conferences organized and participated by the students and faculty members. We are sure this will inspire many of our students to reach greater heights in professional development. I congratulate the entire team for bringing out the newsletter successfully which will be a great tool of communication among the students.

Please enjoy this newsletter and provide your valuable feedback.

With regards,

A handwritten signature in black ink, appearing to read 'Sarav'.

Dr. Saravana Mohan M,  
HOD, Mechatronics Engineering







# MECHATRONICS ENGINEERING

The Department of Mechatronics Engineering was established in the year 1999, offering B.E. in Mechatronics Engineering. The department has well-developed laboratory infrastructure that bridges the gap between industry and academia. It also provides consultancy services to the industries. The department regularly invites industry persons, academic and research experts to interact with the faculties and students to update them with the current knowledge and also to make them understand the needs of various Industries. To prepare industry-ready engineers of the future, the department has the right blend of faculty members having expertise in Mechanical, Electrical, Electronics, and Mechatronics engineering.

**“Science is about knowing, engineering is about doing.”**

**- Henry Petroski**

## MISSION

- Impart the right blend of knowledge and skills to students and enable them to apply it in real-life situations.
- Motivate the students towards interdisciplinary research to cater to the local and global needs.
- Achieve innovation in developing industrial products with social responsibility.

## VISION

- The vision of the department is to achieve academic and industrial excellence in industrial automation research and innovative product development driven by Mechatronics systems.



# MOU's



## MJP ENTERPRISE – A COMPONENT FABRICATION DIVISION

An MoU was signed between the Mechatronics department and MJP Enterprise on 3rd May, 2021. It's a Component Fabrication Division located in Coimbatore. It helps students to upgrade to the new technologies by providing internship and placement opportunities to the students. It gives numerous opportunities to students to enhance their career skills.



## SPARK DRIVES AND AUTOMATION



An MoU was signed between the Mechatronics department and Spark Drives & Automation, Coimbatore on 27th April, 2021. It already started to offer Internships and industrial projects to Mechatronics students. It helps them to provide hands-on experience on the new technologies to the students. In this academic year, 9 students from the Mechatronics department have undergone internships through this MOU.





The background of the slide is a collage of several video conference windows. It features various individuals, including an older man with glasses, a woman with dark hair, a man in a blue patterned shirt, and a man with a beard and glasses. The windows are arranged in a non-linear fashion, with some overlapping others, creating a sense of a busy, multi-participant online session. The overall color palette is dominated by the orange and white of the text and header, with the background images providing a professional and collaborative context.

# WEBINARS

- AWARENESS SESSION ON NPTEL
  - LEADERSHIP 360
  - FIELD PROGRAMMABLE GATE ARRAY AND ITS APPLICATIONS
  - INTELLECTUAL PROPERTY RIGHTS & PATENT SYSTEM
  - SUPPLY CHAIN MANAGEMENT
  - PLACEMENT PRO-TALKS - PREPARATION STRATEGIES FOR SOFTWARE SECTOR
  - EXPERT TALK ON ENTREPRENEURSHIP
  - INDUSTRIAL AUTOMATION & IIOT
-

# AWARENESS SESSION ON NPTEL

09 JAN 2021

## CHIEF GUEST

**Mr.R.Raffik**  
Assistant professor,  
Mechatronics  
Engineering



The webinar had a really good insight on SWAYAM organization and their works and later enhanced on the National Programme on Technology Enhanced Learning (NPTEL) .

Later the differences between various MOOCs and NPTEL were distinguished. A statistics chart was elaborated on the impact and structure of NPTEL. Step-by-step procedure on joining the course, following the course, and registering for exams, and mentoring the students was presented.

## LIST OF HAPPENINGS IN THE EVENT:

- Details about swayam platform and courses
- Benefits of doing NPTEL courses for credit transfer
- Transferring the NPTEL credits in our credits attainments
- NPTEL scholarship
- Mentoring certificates for faculties
- Hardware training and kits from Texas Instruments.
- NPTEL - Domain Certifications
- NPTEL Stars

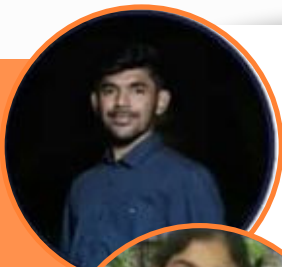
## COORDINATORS

THARUN  
RAHUL



# LEADERSHIP 360

12 JAN 2021



**Nithin S S**  
**Sports General Games**  
**Captain Junior Executive,**  
**TATA Advance System Limited**



**Kabila N**  
**Executive Research at**  
**Re - KCT**

This session touches the various aspects of life which helps us to achieve a long, happy and fulfilled life. It is based on an ancient, well practised Japanese technique called — IKIGAI.

## LIST OF HAPPENINGS IN THE EVENT:

- This session focused on the mission to discover the ikigai in oneself. This concept shows how to leave urgency behind, find our purpose and throw ourselves into our passions.
- The speaker following the life changing concept - IKIGAI states that, pursuing it and nurturing it every day will bring meaning to life. This session gave us a way to the reality that "stay with those thoughts in which you can easily confide in and enjoy your life".
- This session also conveyed that working seamlessly and being disciplined never fails to bring an impact.



# FIELD PROGRAMMABLE GATE ARRAY AND ITS APPLICATIONS

13 FEB 2021

## CHIEF GUEST

**Mr. G.Gowtham Balaji,**  
**Imagination Technologies,**  
**England.**



This "FIELD PROGRAMMABLE GATE ARRAYS (FPGA) & ITS APPLICATIONS" webinar was conducted with Mr. G. Gowtham Balaji as chief guest. He has 7 years of work experience in the field of FPGA firmware design and embedded system design.

## LIST OF HAPPENINGS IN THE EVENT:

- He gave the details about FPGA, its applications and market trends.
- He also spoke about the demand of FPGA engineering and the opportunities for mechatronics engineers in FPGA.
- We got a detailed insight of history and industrial applications, performance and the latest FPGA in the market. We got introduced to hdl and hvl and designing using FPGA.
- There is also a demand for FPGA engineers and nice scope of opportunity for the mechatronics department in FPGA.

## COORDINATORS

KEERTHIVAASAN  
SELVA KANNAN



# INTELLECTUAL PROPERTY RIGHTS & PATENT SYSTEM

18 FEB 2021



## CHIEF GUEST

**Mr. P. BALAMURUGAN**  
Department of Promotion of  
Industry and Internal Trade,  
Chennai.

The Guest of honor was Mr. P. BALAMURUGAN, M.E, Deputy controller of patents & designs, Patent office - Branch, Chennai. Department of promotion of industry and internal trade. Under the Ministry of Commerce and Industry, Govt of India.

The webinar was very useful and it is one of the important topics that are needed for students in all sectors.

It was a wonderful session and the chief guest explained each act clearly. The students doubt was also cleared in Q&A session. More than 50 students participated in the webinar.

## LIST OF HAPPENINGS IN THE EVENT:

- Importance of IPR in present day's knowledge society
- Few forms of IPR
- Learning to assess the potency of your creations
- Provisional, Complete patent form submission and details.

## COORDINATORS

LOKESH  
KAILASH

# SUPPLY CHAIN MANAGEMENT

20 FEB 2021

## CHIEF GUEST

Mr. Laxman Subramanian  
Senior Manager,  
Supply Chain Solutions,  
Apple, USA.



The Guest of honor was Mr. Laxman Subramanian, Senior Manager, Supply Chain Solutions, Apple, USA. He is Skilled in Materials & Supply Planning, Master Data & Industrial Engineering.

The webinar was very useful and interesting. He gave the details about Supply Chain nodes, Bill of Materials & Materials Requirement Planning. He also gave an idea of a career path in Supply Chain Management. It was a wonderful session and the chief guest explained all the concepts clearly.

## KEY TAKEAWAYS :

- Introduction to supply chain nodes
- Fundamentals of material planning
- Fundamentals of demand plannings
- Career path in operations and supply chain
- The Synergy between engineers and supply chain

## COORDINATORS

ABISHEK D  
RAHUL S



# PLACEMENT PRO TALKS – PREPARATION STRATEGIES FOR SOFTWARE SECTORS

25 APR 2021

## CHIEF GUEST

**Mr.V.Sai Prasanth**  
Project trainee  
Solution Technologies Pvt. Ltd.



The Guest of honor was Mr. V.Sai Prasanth, a Project trainee at Soliton Technologies Pvt Ltd, Coimbatore. Sai is an enthusiastic Mechatronics engineer with accomplishments in data science, machine learning, predictive modeling with hands-on experience.

The webinar was very useful and interesting, he kept us on our toes with his brainstorming question and answers. He shared various ideas on how to ace the IT interview process and various steps to follow with preparation strategies and suggested a lot of useful key strategies to follow.

## LIST OF HAPPENINGS IN THE EVENT:

- Aceing IT interviews
- Types and categories in IT
- Steps and methods to ensure to get placed
- Key concepts for software sector placement and preparation strategies

## COORDINATORS

THANISH  
RAHUL

# EXPERT TALK ON ENTERPRENEURSHIP

1 MAY 2021

## CHIEF GUEST

**Mr. Sathish Nair**  
CEO and Founder  
EssEmm Corporation Pvt. Ltd.  
Coimbatore



This webinar was conducted with Mr. Sathish Nair as chief guest. He is the alumnus of the batch-1995 and the CEO and Founder of EssEmm Corporation, Coimbatore. He is a successful entrepreneur for over two decades and he established his reputation in overseas too.

He added spice to the session by advising upcoming entrepreneurs to gain knowledge, either from real-time experience or by wise utilization of the internet.

He also stated that self-analyzing and sincerity towards work are the keys to remark oneself in any field.

## KEY TAKEAWAYS:

- Skills to be developed to become an entrepreneur
- Choosing the right business
- Things to be considered before establishing a start-up
- Maintaining stability in the market
- Maintaining reliability with customers.

## COORDINATORS

NANDHITHA  
KAILASH



# INDUSTRIAL AUTOMATION & IIOT



19 JULY 2021

## CHIEF GUEST

**Mr. Sandeep Sugumaran,  
Aggressor Automation,  
Canada.**

This "Industrial Automation & Industrial Internet of Things" webinar was conducted with Mr. Sandeep Sugumaran as chief guest. He made clear explanations & demo on PLC, Drivers, HMI and SCADA.

## LIST OF HAPPENINGS IN THE EVENT:

- He explained the role of data in IOT and Industrial communication protocols for Data Transfer.
- He illustrated the challenges in industry which gave a clear view for the students who look forward to work on that.
- Mr. Sandeep Sugumaran is currently working on 3D-printing, IIOT, Custom HMI, Mobile robotics, and Computer vision.

## COORDINATORS

ABISHEK  
KAILASH



# STUDENT HUDDLE



**“Engineering is about using science to find and provide creative, innovative and practical solutions”.**

Student huddle is a collaborative program that happens together with two or three other departments. The Department Association will present a slide that briefs the happenings of the department. It is an initiative to share the DA activities with other departments. It enables and constitutes light on all the DA activities. Also, it acts as a booster and motivator to do more and grow more.

As a part of STUDENT HUDDLE, the Department of Mechatronics Engineering conducted huddles in collaboration with ECE, EEE, EIE, Aeronautical, Automobile, and Mechanical departments. Three sessions were conducted in the past 6 months. It provided clear views on all the past, present, and future activities of all Department Associations

## AGENDA

1. STUDENT TALKS
2. STUDENTS ACHIEVEMENTS
3. PAST & FUTURE DA ACTIVITIES
4. INTER-COLLEGE EVENTS
5. INTRA COLLEGE EVENTS
6. CLUBS & FORUMS WEEKLY CALENDAR

# Master Mind - Virtual Chess Tournament

13 JAN 2021



**Jaya Prakash M**  
**1st prize**



**Bavishna S**  
**2nd prize**



**Praveen M**  
**3rd prize**

The Department of Mechatronics Engineering organized a virtual chess tournament using online chess platform called lichess.com on 13th January, 2021.

## LIST OF HAPPENINGS IN THE EVENT:

- To improve brain skills, memory and cognitive abilities, strategic thinking and attention improvement, mechatronics department association organised the open chess event to all KCTians.
- It also helped the chess enthusiasts to know each other in this lock-down period.
- Prize money of worth Rs. 1000 was given to the competition winners as a small token of appreciation and motivation.



# PLC PROMAKERS

19 MAR 2021



**V. Sai Prasanth**  
**1st prize**



**A.G. Padmanaaban**  
**2nd prize**

The Department of Mechatronics Engineering and Institution Innovation Council joined hands to organize a PLC Promakers event on 19th March 2020.

## LIST OF HAPPENINGS IN THE EVENT:

- In the first round , a simulation video was played and participants were asked to develop codes for the program shown in the video.
- In the second round, the shortlisted participants were given a problem statement and were allowed to create ladder diagrams using PLC programming software. Prize money of worth Rs. 1.7K was given to the winners.





**TDS**

# TECHNICAL DRILLING SERIES ON “**ROBOT OPERATING SYSTEM**”

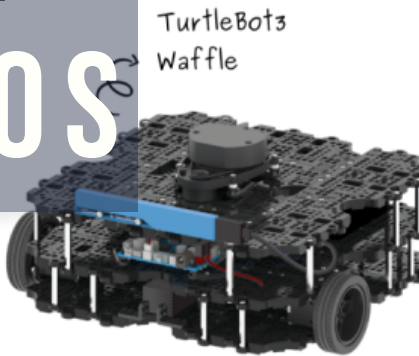
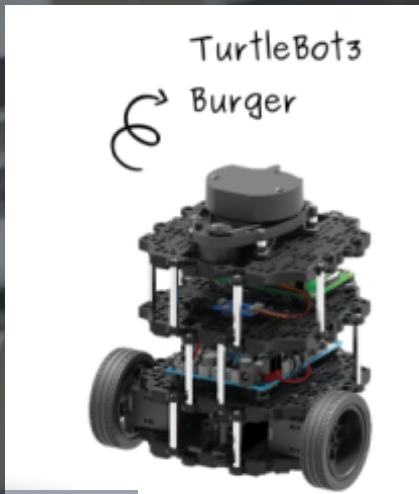


**MR. S. KATHIK  
LORAWAN  
ACADEMY AMBASSADOR  
DEPARTMENT OF ECE  
KUMARAGURU COLLEGE OF TECHNOLOGY**

The Department of Mechatronics Engineering along with Robotics and Automation Club(RAC) of KCT organized Technical Drilling Series - Training programmes for the students. In the March month, RAC offered a hands-on training programme on the topic “Robot Operating System”.

Robotics has been a part of day to day life, since from the start of Robotics, the evaluation has grown even bigger apart and the extent of Robotics has also grown. In order to make the students to learn more about Robotics, Linux operating platform with the use of Robotics Operating System, this workshop was conducted with the guidance of various experts.

# ROS



# GAZEBO

## LIST OF HAPPENINGS IN THE EVENT:

- This was conducted through Microsoft Teams, and we had around 40 enthusiastic learners.

### The objectives of the event are:

- To help the students to gain clear knowledge on ROS.
- To help the learners to control Turtlebot in simulation.
- To teach about the interfacing of ROS with Arduino.
- The series was split into synchronous and asynchronous sessions.
- Tasks were assigned to keep the participants engaged and hands-on experience.
- E-certificates were provided to active learners.



# TECHNICAL DRILLING SERIES ON “PCB- DESIGN AND LAYOUT”



**TDS**



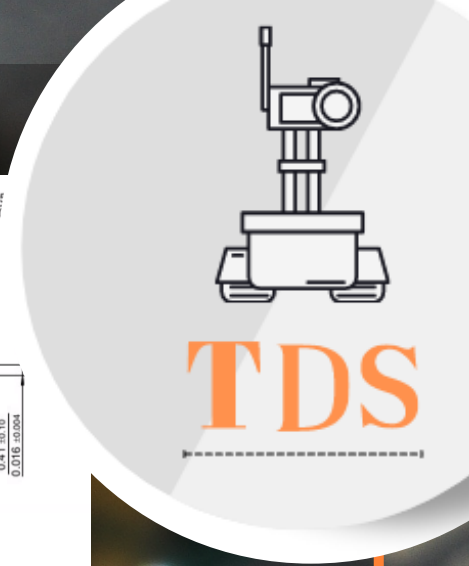
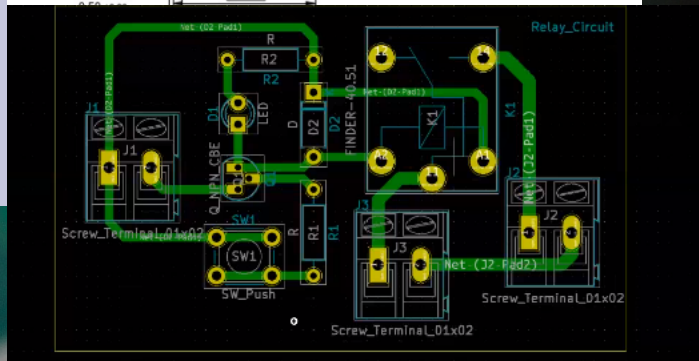
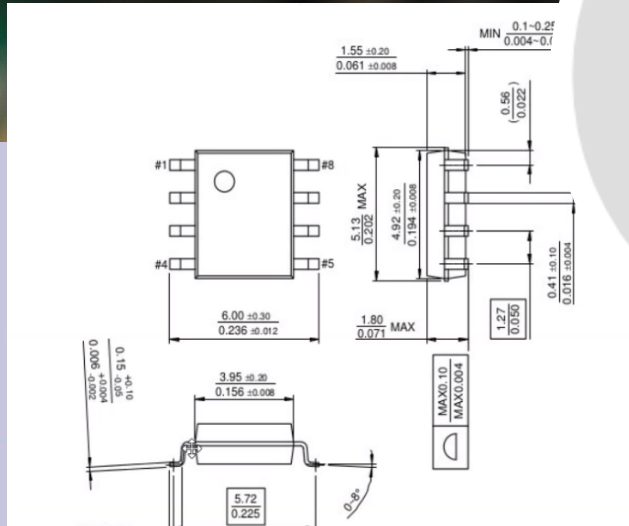
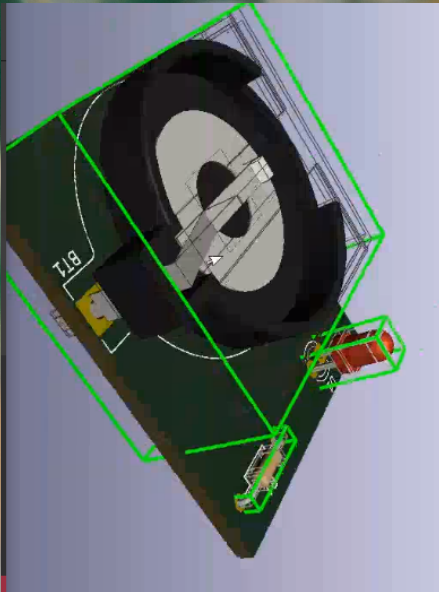
**SUBHASH P**  
AUTOMATION DEVELOPER,  
MANFREE TECHNOLOGIES



**GOKUL K**  
EMBEDDED DEVELOPER,  
MANFREE TECHNOLOGIES

The Department of Mechatronics Engineering along with Robotics and Automation Club(RAC) of our college organized Technical Drilling Series - Training Programme in the month of June & July. In that series, a value-added course on the topic “PCB-Designing & Selection of Electronic components” was offered. The sessions were handled by resource persons from Manfree Technologies, Coimbatore.





## LIST OF HAPPENINGS IN THE EVENT:

- The session was conducted through Microsoft Teams.
- We received the great response from the students and a selection process was carried out to finalize the intake due to limited number of seats.
- Diverse topics ranging from basic circuit designing to manual routing, relay and micro-controllers were covered in this value added course.
- The series of sessions was infused with many practical sessions. It helped the students to get familiarized with software such as KiCad and Proteus.
- E-Certificates were provided to the participants.

## KO-MIND

# STUDENT MENTORSHIP PROGRAM

Connect Mentoring in New Dimension



## What is KO-MIND?

Student Mentorship Program is a program organized for the Department of Mechatronics Engineering students by MCE - Department Association. The primary objective of this program is to enable the constructive and positive interaction, guidance, and mentorship for junior students by senior students.

## OBJECTIVE

It was started on February 24, 2021, to provide a platform for 1st and 2nd-year students to become more active in the teaching-learning process. It also helps them to actively explore Technical & other Skills which are important to the recent transitions in the world, Career Opportunities, Self-Awareness, Extra-curricular activities, and various opportunities present in the college. The students are constantly guided and mentored by the senior students for their personal and academic growth.

## What's Inside:

- **MENTORING**
- **LEARNING**
- **RESEARCH**
- **CAREER GUIDANCE**
- **SELF AWARENESS**
- **SKILL DEVELOPMENT**
- **COMPETITIONS**





# KO-MIND IS ONE OF THE SUCCESSFUL PROGRAMS LAUNCHED BY THE DEPARTMENT OF MECHATRONICS ENGINEERING AND IT BENEFITS THE STUDENT COMMUNITY.

The KO-MIND was started with orientation in the first week and followed by a student mentor team introduction. For the past few months, the agenda was followed as,

- Fun games to create bonding.
- Domain Exploration - Mech designs, Electronic basics, Boards (Arduino)
- Session on Fusion 360.
- Session on TinkerCAD (for Electronic).
- An event in Circuit building using TinkerCAD.
- Student Mentor Team Lead selection.

Mentor Allocation:

Technical and Extra-Curricular student mentors - Pre-final year students.

Career Guidance Student mentors - Final year students.

**Week 1 – Technical Topic.**

**Week 2 – Skill Development Activities and Self - Awareness.**

**Week 3 – Career Guidance and Domain Brief - Group Discussion.**

**Week 4 - Technical Competition.**

## Student Mentors



Sai Prasanth V



Ishthiaq hussain



Padmanaaban A G



Praveen M



Arunprasanth D



Maharaja M



Mugunthan N



Deniston



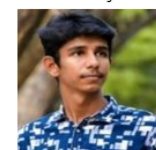
Meeth Mehta



GOKULNATHAN V



Mohan A



Hari Haran E



Abinaya



SHIVA PADHBANABAN



Sridhar



Soundharya



Gokul Krishnan



Venkatesh 11



# VIRTUAL LINE FOLLOWER

## OBJECTIVES :

To design a virtual BOT which has to follow the line in the given simulation environment Gazebo by using suitable algorithms. It aimed to improve the Problem-solving skills, programming skills and to promote the students to explore different software and simulation tools through virtual events. This virtual event helped students to regain their spirit even in this virtual era.

## WINNER :

**TEAM AP**  
(KUMARAGURU COLLEGE OF TECHNOLOGY)

ANANTHA PRAJITH. K  
PRADEEP. S

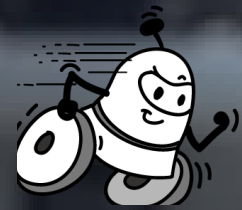
## RUNNER :

**TEAM REDEYE**  
(DR. NGP INSTITUTE OF TECHNOLOGY)

AKASH. S & GOKUL. M

## Summary :

- Virtual Line Follower was a simulation-based line following event using ROS (Robotic Operating System) or Gazebo.
- The main objective of this event is to create algorithm to follow lines in the given simulation environment Gazebo.
- It was conducted through virtual mode from 29th March 2021 to 4th April 2021 and 55+ participants registered from all over India.
- Synapse Robotics sponsored the event by providing an internship opportunity to the winners.
- The Head of the Mechatronics Department announced the prize winners and congratulated them.



# STEPPING INTO ROS

## OBJECTIVES :

The workshop aimed to teach students to work on Linux OS, ROS ecosystem, files and packages installation, designing a ROS-based robot, turtlesim demonstration, and future applications with hands-on experience.

The ROS workshop was provided with an opportunity to learn more about Robot Operating System( ROS) programming, modelling, designing a ROS-based robot, turtlesim demonstration, and future application.

The workshop focuses on how to work on Linux OS, ROS ecosystem, files, package installation, some cool projects with many hands-on and live training sessions. To make students learn what is actually ROS, fundamentals of ROS, Publisher, Subscriber, Turtlesim Simulation has been taught in this workshop.

### Happenings:

**Overview and Basic Fundamentals of ROS.**

**Task on Publisher , Subscriber and  
2D Simulation using turtlesim,  
Brief introduction on Gazebo.**

**3D Simulation with Gazebo.**

**DATE**

**27-29 MARCH, 2021**

**DOMAIN**

**ROBOTICS**

**VENUE**

**MS TEAMS**

**APPLICATION**

**LINUX OS, ROS,  
GAZEBO, ROS  
DEVELOPMENT  
STUDIO.**



**DAY 1**

**DAY 2**

**DAY 3**

# DA PROBATION

## DEPARTMENT ASSOCIATION

Department Association is the right opportunity to improve Personality and Social skills of the students. It is the right place to implement the new ideas for the growth of students in various fields. It is a way to conduct themselves to set an example and a benchmark to their juniors and fellow Mechatronics.

## DA - FIRST YEAR PROBATION

The Department of Mechatronics Engineering conducted recruitment for the first-year students. The students who registered for DA were interviewed and selected.

Then happened the immersion for two days.

### FIRST YEAR IMMERSION:

On the first day, the activities of DA and how it helps the students, faculties, and oneself were explained. The flow of an event and webinar was also explained.

On the second day, social media management and database management were clearly explained.

Tasks were given to the students to check their interest and skills. They made PowerPoint presentation and presented before other DA members.



DHANUSH ARAVINDHAN M



HARISH B



JAYALAKSHMI R



KAVYASHREE T



NITISH RS



RAGURAM.K



SWAMINATHAN C



THILAK B



## AICTE FDP ORAGANIZED:



### Dr. K. AKILA

Dr. K. Akila organized a National Level Short Term Training Program in three phases which was sponsored by the All India Council for Technical Education with a fund amount of Rs.3,02,000. More than 175 participants from all over India got benefited out of this programme.

## FACULTY AS RESOURCE PERSON:

### DR. A. VASUKI

Dr. A.Vasuki delivered a lecture in the National level FDP on Recent Research Issues in Digital Image Processing held on 27/05/2021



### DR. M. SARAVANA MOHAN

Dr. M. Saravana Mohan was appointed as PG Project Examiner to conduct Viva Voice, for International students, SRM University on 22/05/2021.



### DR. B. SABITHA

Dr. B. Sabitha was the Chairperson for the "International Conference on Electrical Science -ICES 2021" held on 04/03/2021.



### Mr. R. RAFFIK

Mr. R. Raffik was the Resource Person for three webinars - "Awareness Session on NPTEL & its Benefits" conducted for KCT, KCLAS & KCT-Business School students & faculty members on 9th, 25th & 26th of January 2021.



### MR. S. GNANASAMBANDAM

Mr. S. Gnanasambandam delivered a guest lecture on "The Dreamers & The Doers - Students awareness program" at Sri Ranganathar Institute of Polytechnic College on 21/05/2021.



## JOURNAL PUBLISHED & REVIEWED

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**Dr. M. Saravana Mohan** reviewed a paper on the title “**Design and Control of a Cable-Driven Rehabilitation Robot for Upper and Lower Limbs**” for Robotica an International journal indexed with Scopus / WoS / SCI.

**Dr. A. Vasuki** reviewed a paper on the title “**A Novel Voice Activity Detection for Multi-channel Noise Reduction**” for IEEE Access which is indexed with Scopus / WoS / SCI.

**Dr. R. Venkatesan** published a paper on the title “**Development of Integrated Model Framework for Selection of 3PL Service Provider in SCM Environment through Estimation and Analysis of Selection Criteria**” for Solid State Technology Volume: 63 Issue: 5 in January 2021.

## FACULTY ACHIEVEMENTS

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**Mr. T. SURESH**

Mr. T. Suresh was recognized with NPTEL Discipline Star in Mechanical Engineering on December 2020

## STUDENT'S PUBLICATIONS AND ACHIEVEMENTS

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### PATENTS FILED :

1. “Garbage collecting redundant robotic manipulator”  
-Dr.M.Saravanamohan(HOD), Sikkandhar Thanish G.
2. “An Automated Health Screening and Protection System”  
-Rakesh D , Keerthivaasan K V R, Mohan A, Jayananden M, Prakash Ganesan, Samvasan P.
3. “ Hi-tech face mask to detect various diseases”  
-Mugunthan N, Mayukha S, Hareesh Chandran S, Abishek D along with Dr.B.Sabitha, Dr.K.Akila, Dr.K.M.Senthil Kumar.



## RESEARCH PAPERS PUBLISHED BY MECHATRONICS STUDENTS :

1. "Simulation of Hi-Technology Mask to Detect Various Diseases" was published in BBRC.

- Mayukha S, Mugunthan N, Hareesh Chandran S, Abishek D, Dr.B.Sabitha

2. "Developing a smartphone app for ARECANUT farmers and integrating it with an IoT-enabled smart weighing scale."

- Meeth A Mehta, Mohit Kangotra, Satish Kumar, Mr. D. Ram Kumar

## PROJECTS :

1. "Autonomous Weeding Robot"

- Abishek D, Mayukha S, Hemchander J, Deepak Kumar S, Tharun R.

2. "Copper Tube Chamfering Machine"

- Meeth A Mehta, Mohit Kangotra, Aashish Uttamani, Mohammad Fiaz, Soundaraya N.K, Adithvaas A

3. "Mask Detection using Deep Learning"

- Mohan A, Samvasan P, Keerthivaasan K V R.

4. "Loadcell Modbus Transmitter"

- Maharaja M, Sangeetha R A.

5. "Weigher Controller Module Tester"

- Thirunavukkarasu P, Kowsigapriya N, Sridhar Shyam N

6. "Animal Intrusion Indicator"

- Kishore K, Nirmal Prasanth Faizuddin, Dhanaprasath

7. "Drone Delivery System"

- Vinothini R, Ishthiaq Hussain J, Shriram S G, Koushal A C

## ACHIEVEMENT IN COMPETITIONS

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**Sikkandhar Thanish G** got 2nd place in the **National Design competition, Bannari Amman Institute of Technology, Sathyamangalam.**

**Jayananden M** secured 2nd place in **POSTYER - A National level Poster Presentation fest** organized by **Bannari Amman Institute of Technology, Sathyamangalam.**

**Mohan A and Rakesh D** won **2nd place** in the International project competition **VISAI-2021, organized by Vel Tech Institutions, Chennai.**

**Mohan A and Rakesh D** won 3rd place in **Tech and Innovation Fair - Shaastra 2021**, organized by **IIT-Madras, Chennai**.

**Anantha Prajith K and Pradeep S** won 1st place in the **Virtual Line Follower event - Yugam 2021 - Kumaraguru College of Technology, Coimbatore**.

**Abishek M** won 3rd place in **Anna University fusion challenge, Anna University - Guindy Campus, Chennai**.

**Jayanandhen M, Anantha Prajith K, and Pradeep M** won 1st place in in **International project competition VISAI-2021**, organized by **Vel Tech Institutions, Chennai**.

**Yeshwant S** bagged 1st place in the **Voice of Peace: 1st International Poetry And Short Story Anthology Competition 2021** conducted by **The League of Poets**

**Kailash S** bagged the prize in **INDIAN INTERNATIONAL SCIENCE FESTIVAL 2020** conducted by **CSIR, Delhi**.

**Dhanush Anand SB, Nishant N, Saravanamani CS , Pradeep M** participated in **HackerJack** conducted by **Bannari Amman Institute of Technology, Sathyamangalam**.

**Samvasan P, Keerthivaasan K V R and Mohan A** participated in the **5th National Level IEEE Project Competition, GSSS Institute of Engineering & Technology for Women, Mysuru**.

**Deniston A** acted as Team Lead in **BOSCH Hackathon**.

**Jayananden M** secured 2nd place in **POSTYER - A National level Poster Presentation fest** organised by **Bannari Amman Institute of Technology**.

## SPORTS

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**Kiran Prasanth. E** participated in **KHO-KHO and Athletics in Anna University Sports Zonal**.

**Mourian** participated in Handball in **Sports Zone 2021** conducted by KCT.

**Selva Kannan A** won 1st place in the **17th Senior State Wushu Championship-2021 held at Tuticorin**.

**Nandhitha R** participated in the **29th Senior National Wushu Championship** held at Chandigarh University, Mohali.

**Sriram, Harishankar, Madhu Sudhanan and the team** won **First Place** in a **zonal cricket match tournament** conducted by **Anna University**. **Harishankar** is the Highest scorer and **Sriram** took 4 wickets haul in the Final match.



# TELE-OPERATION OF 4W VEHICLE

## TEAM MEMBERS:

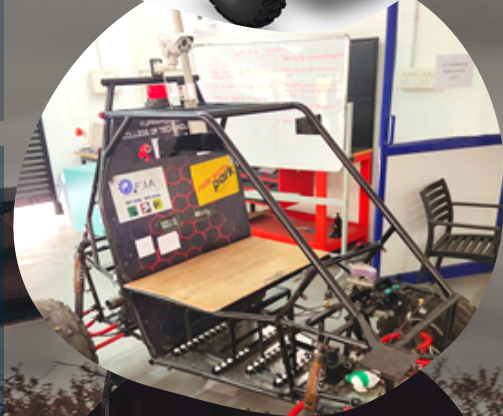
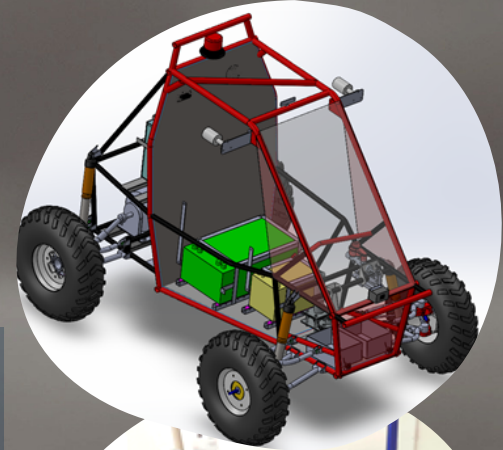
Final Year Students - Akbar Ali N H,  
Shanmugavadivel A, Praveen M

## OBJECTIVE:

Tele-operation of 4W Vehicle is conversion of manual driven All-Terrain Electric Vehicle into Tele-operated mode. This can be achieved by replacing all the manual operation systems like brake, steering and throttle by respective actuators like servo motors for steering and throttle, and linear actuator for brakes.

## OVERVIEW:

This project is to operate the vehicle remotely from base station through the car simulator to get the driver's perspective from the camera mounted on the vehicle. Transmission of respective signals for steering, brakes, throttle and other accessories will be taken care by vehicle control unit which receives the signal from base station through antenna and sends signal to the respective subsystems. Every subsystems like brake, steering, etc. has their own controllers and Each controller is working under main vehicle control unit. This Project identified Challenges faced in Currently available Mechanisms such as Steering, braking, Battery Mounting and overcame those Problems. This will reduce the human loss and increase the efficiency. This project can be used for many applications especially in defense where, this vehicle can be operated to track land-mines, attacking purposes with additional attachments.





# AUTOMATIC PCB DEFECT DETECTION

## TEAM MEMBERS:

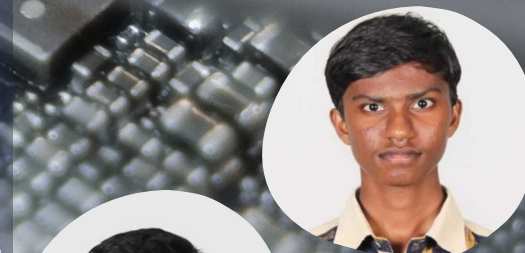
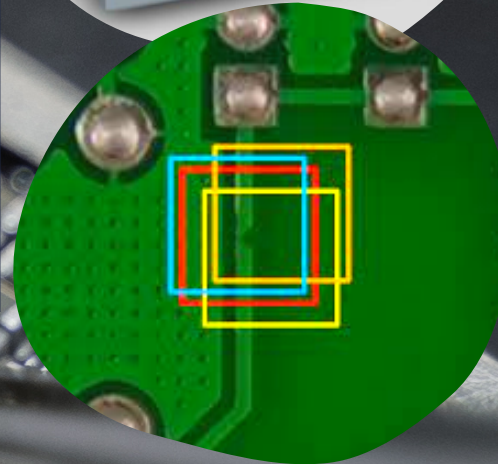
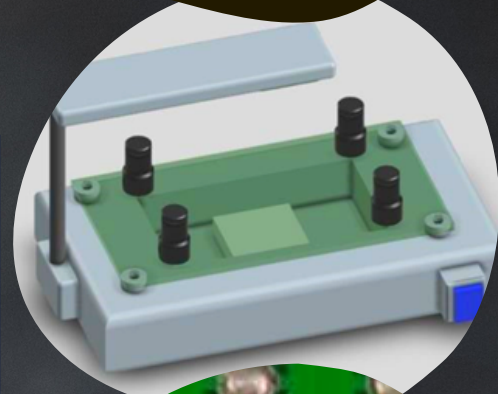
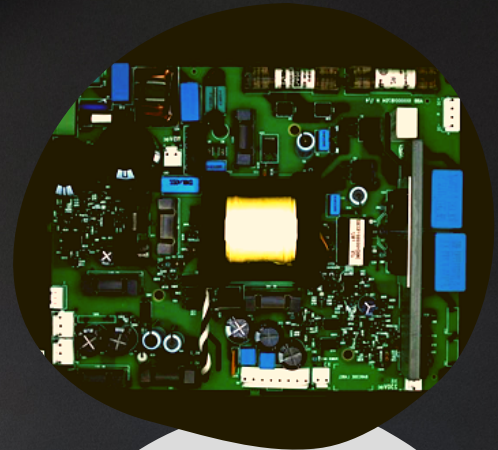
Final Year Students - **D. Arunprasanth, A.G Padmanaaban, E. Karthikeyan, V. Sai Prasanth .**

## OBJECTIVE:

In the design of the PCB inspection system, one of the key technologies the Component's position detection which improves the speed and accuracy of the system. It includes positioning and defect-recognition of the individual parts in PCB. In this project, They build a full PCB defect Detector that automates the tasks of detecting and classifying defects in Printed circuit boards, which can be implemented in local PCB manufacturing industries.

## OVERVIEW:

Defects like spurs, shorts, pinholes, and mouse bites cause issues like leakage of current and open circuits, which affects the performance of PCB. PCB manufacturers must give their utmost priority to deliver defect-free products to remain in the market and to meet customer satisfaction. PCB analysts are employed in every industry to ensure that the defects are kept to a minimum or negligible level. An automated solution for detecting and classifying defects in PCBs is in great demand. The project is all about the automation of Printed Circuit Boards to detect the defects of manu-factured boards and errors in the missing components. The defective images are captured by the Computer vision system, then processed by the use of trained models and then displayed in the GUI. The GUI is the front end of the project for the end users and the back end of the program is deep learning.





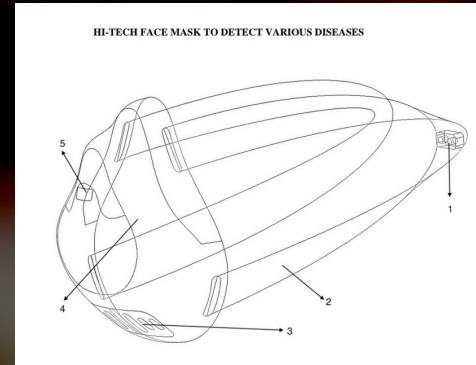
# HI-TECH FACE MASK

## TEAM MEMBERS:

Pre-Final Year Students **Mugunthan N, Mayukha S, Hareesh Chandran S, Abishek D** and Faculty Co-ordinators **Dr.B.Sabitha, Dr.K.Akila, Dr.K.M.Senthil Kumar.**

## OBJECTIVE:

The mask provides the information about user's body to determine the symptoms of possible diseases. All the calculated information's are displayed in mobile app and alerts the user. It also ensures the safe distance between users to control the spread. It also ensures the best efficiency and reusability by alerting the user to change the filter at certain interval of time.



## OVERVIEW:

The masks which are in the market today mostly protect us from the exposure of the pollution and diseases. And some other smart masks use some form of technology only to purify the air or to display some fancy contents on the mask. Therefore, there is a need to provide a new, efficient, and technically advanced mask which provides useful information about the body and health by ensuring its efficiency by protecting the users from diseases. To solve the above problems, we can use a mask which incorporates various sensors placed precisely to monitor vital parameters like body temperature, SpO2, heart rate etc. These values received from the sensors are then processed to get optimum values. The processed values are then compared with the reference or normal values to determine the symptoms for possible diseases. The information on symptoms including the values of the parameters are displayed on the mobile app which can be easily accessed by the user.



# SCREEN EASY

An Automated Health Screening and Protection System

## TEAM MEMBERS:

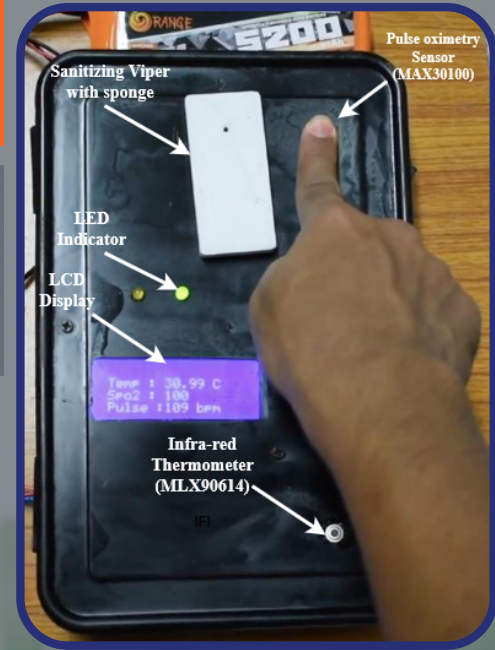
Pre-Final Year Students **Rakesh D,**  
**Keerthivaasan K V R,** **Mohan A,** **Jayananden M,**  
**Samvasan P,** **Prakash Ganesan.**

## OBJECTIVE:

This station has been meticulously designed to make the screening process as fast, consistent and safe as possible. This system can quickly measure the person's body temperature, heart rate and blood oxygen saturation level. These measurements are done by low energy consuming sensors. This data is stored and tracked with respect to the person's identity for future references using an RFID receiver placed right next to the station.

## OVERVIEW:

The pandemic has caused misery and harm to countless individuals. The pandemic is so unnerving as people cannot gather in public places and closed venues. The best means to make sure that we can keep these venues opened while, at the same time, make sure everyone inside is safe and risk-free, is to test everyone entering. It is essentially a hyper-smart and convenient way to screen and monitor the health vitals of everyone entering a venue. It employs every means necessary to properly understand the state of health well-being of a potential entrant. The vitals that it measures ranges from blood oxygen saturation level , Heart Rate and Body Temperature. It also has safety contingency measures like Mask detection, RFID verification. Automated screening and protection station. This project has been recognized in Technology and Innovation Fair, Shasstra 2021 - IIT Madras with cash prize of Rs. 15000, It also won third place in VISAI 2021 (International project Competition) with cash prize of Rs.6000





# i5-SAT

A PICO SATELLITE

## TEAM MEMBERS:

**Mugunthan N** - 3rd Year Mechatronics Department

**Sabarish M** - Final Year EIE Department

**Midhun B** - Final Year Aeronautical Department

**Vignesh R** - 3rd Year EEE Department

**Ashwin Balaji** - 3rd Year EEE Department

## OBJECTIVE:

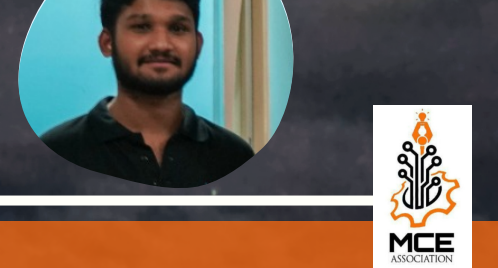
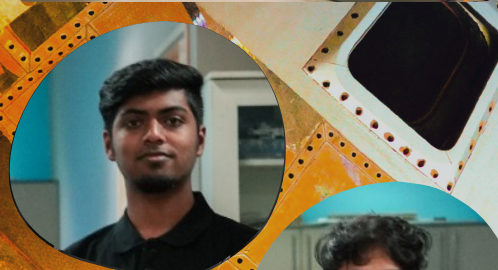
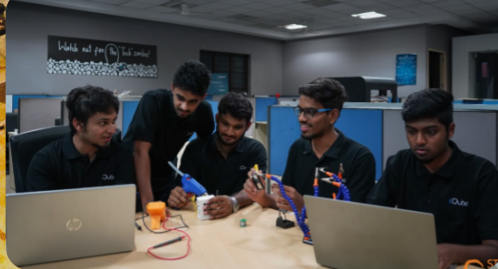
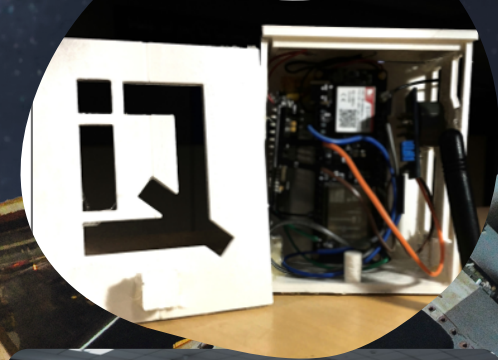
i5-SAT is a miniature-sized satellite of 73x84x43 millimetres in dimensions and 171 grams in weight which monitors the live weather data and Air quality index level.

## OVERVIEW:

Mugunthan N from 3rd year of mechatronics department and his four other team members collaboratively worked for technological solutions in iQube - Innovation Lab under different domains to build a satellite. i5-SAT aims to collect Temperature, Humidity, Pressure, Image and Air Quality from the atmosphere. It helps researchers to collect and analyze the air quality data. The Special Aspect of i5 SAT is it includes

- 5 People
- 5 Hours of ideation
- 5 Parameters
- 5 Payloads
- 5 days of life time

These people came up with this idea after 5 hours of brainstorming and have built it within 24 hours. Also, they have planned to participate in the ISRO student SAT program.



DA is privileged in informing you that we have conducted several activities from January to June 2021.

We take this platform to thank each and every student from DA and active participants from our department for rendering their involvement in the Technical and Non-technical sides.

We value and respect our HOD and Faculty members for always being on our side and providing constant encouragement.

We couldn't have pulled these off without the participants!  
Our deepest thanks to you all for your deepest involvement and support!  
We like to have the bond stronger than before in the upcoming future!!!

**We would wish to thank the Faculties and the DA members of Mechatronics Engineering Department for bringing out this Magazine successfully....!!**



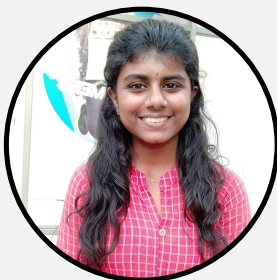
**Dr. M. SaravanaMohan**

**Chief Editor**



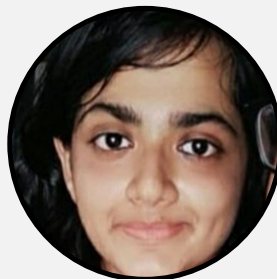
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**Chief Editor**



**Nandhitha**

**Content Writer**



**Jayalakshmi**

**Content Writer**



**Pradeep**

**Editor**



# KNOWLEGE - CHARACTER - TRANSFORMATION



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da.mce@kct.ac.in

