



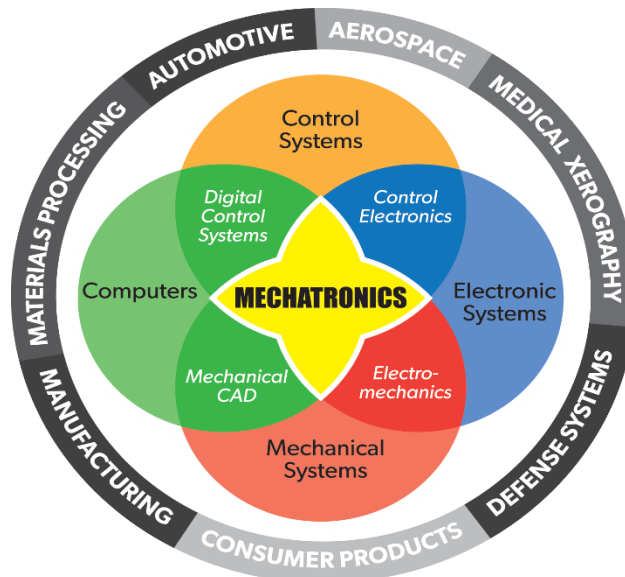
(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)

S.P.G.Chidambara Nadar - C.Nagammal Campus

S.P.G.C.Nagar, K.Vellakulam - 625 701, (Near Virudhunagar), Madurai District.

DEPARTMENT OF MECHATRONICS ENGINEERING

MECHATRONZ



August 2020

DEPARTMENT OF MECHATRONICS ENGINEERING
KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF MECHATRONICS ENGINEERING

VISION

To make the department of mechatronics engineering unique in the field of research and development towards industrial automation & robotics.

MISSION

To impart highly innovative and technical knowledge in mechatronics to the urban and unreachable rural students through “total quality education”.

PROGRAMME EDUCATIONAL OBJECTIVES

1. To provide basic knowledge in physics, chemistry, mathematics and necessary foundation in various concepts of mechatronics.
2. To impart training to the students to solve the real time problems related to the field of mechatronics and allied areas faced by the industry and society.
3. To provide an academic environment for the students to develop team spirit, leadership qualities, communication skills and soft skills exhibit professional responsibility with ethical code of conduct.

PROGRAM SPECIFIC OUTCOMES (PSO)

1. To understand and apply the recent technological developments in Engineering to develop products & software to cater the Societal & Industrial needs.
2. To develop solutions for fast learning and successful retention for the entire spectrum of automation technology.

PROGRAM OUTCOMES

Engineering Graduates will be able to:

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, research literature, and analyze electrical and electronics engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for problems in the field of electrical and electronics engineering and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and 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 electrical and electronics 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 teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on electrical and electronics engineering activities with the engineering community and with the society, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, 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 environments.
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.

ABOUT THE DEPARTMENT OF MECHATRONICS ENGINEERING

Our college with a vision to promote quality technical education to the rural folks, kicked off in the year 1998 with four branches. Knowing the importance of core branches, our dream to start Mechatronics branch comes true during the academic year 2014-2015. Mechatronics Engineering is a well-recognized course gaining importance in the industrial world. The unique features of the programme when compared with other B.E. programmes are the students are

1. Well equipped with computer skills
2. Trained in operating micro-controllers and programmable logical controllers.
3. Practiced in handling industrial sensors, hydraulic, pneumatic and electric drives.
4. Experienced in design of mechanical structure and learning of mechanisms in Manufacturing process.

This programme gives an exposure to bio-mechatronics, which integrates mechanical parts with a human being. The students of Mechatronics Engineering will do their project work in leading industries, which will help them to apply their theoretical knowledge to formulate and solve real life problems. This will be base for handling more challenging projects in an innovative application oriented projects from real life situations. The project work enables students to develop decision-making skills and to adapt to various uncertain situations in teams. Mechatronics Engineering helps the students to be placed in factories related to Robotics & Automation, Smart sensors & Actuators, MEMS & NEMS, Motion control systems, Computational intelligence, Real time embedded systems, Bio-mechatronics and Medical robotics.

ABOUT THE MECHATRONZ'20

This Newsletter brings the outline of our Department activities of the academic year 2019-20.

DEPARTMENT OF MECHATRONICS ENGINEERING

“Integration of mechanics, electronics and intelligent digital controlling”

TOP 10 REASONS TO GET A MECHATRONICS DEGREE

- ✓ Multidisciplinary skills.
- ✓ High-impact jobs.
- ✓ Hands-on labs.
- ✓ Resources and equipment.
- ✓ Internships.
- ✓ Insider insights.
- ✓ Applicable skills.
- ✓ High standards.
- ✓ Good paying jobs + high starting salaries.
- ✓ A resume that stands out.

LABORATORY DETAILS

- ✓ Robotics Lab
- ✓ Microprocessor Lab
- ✓ Mechatronics Lab
- ✓ CAD Lab
- ✓ Industrial Automation Lab

SALIENT FEATURES

- ✓ SMC Pneumatics Centre for excellence
- ✓ FPSI Student Chapter
- ✓ ISTE Student Chapter
- ✓ Association of Mechatronics Engineering

Department of Mechatronics Engineering

Faculty Profile



Dr. K. KANNAN

Associate Professor (Senior Scale) & Head

Sl. No	Name of the Faculty with Designation	Qualification	Specialization
1.	Dr. K. Kannan, Associate Professor	M.E., M.E., Ph.D.,	Digital Image Processing
2.	Mrs. G. Pabitha, Assistant Professor	M.E.,	VLSI Design
3.	Mr. G. Sakthivel, Assistant Professor	M.E., (Ph.D)	Power Electronics & Drives
4.	Mr. A. Arul Kumar, Assistant Professor	M.E., (Ph.D)	Power Electronics & Drives
5.	Mr. S. Kannappan, Assistant Professor	M.E., (Ph.D)	CAD/CAM
6.	Mr. P. Balasundar, Assistant Professor	M.E., (Ph.D)	Manufacturing Engineering
7.	Mr. B. Aravind Kumar, Assistant Professor	M.E.,	CAD/CAM
8.	Mr. A. Ganesan, Assistant Professor	M.E.,	Thermal Engineering
9.	Mr. S. Wesley Moses Samdoss, Assistant Professor	M.E.,	Communication & Networking,

Department of Mechatronics Engineering

Association Activities



Seminar on “Introduction to Internet of Things” on 12-07-2019 by Mrs. K. Pandiselvi, Manager, Live Wire for Live Careers, Madurai.



Special Lecture on “Various Domains in Mechatronics” on 02-08-2019 by Mr. B. Aravind Kumar, AP/Mechatronics Engineering, Kamaraj College of Engineering and Technology, Madurai.



One Day National Level Technical Colloquium – “Unimofest ‘2k19” on 14-08-2019.



A Motivational Talk on “Self-Motivation” on 14-09-2019 by Mr. N. Mareesh, Associate-Projects, Cognizant Technology Solutions, Chennai.



Seminar on “IPATE and Autodesk Inventor” on 29-01-2020 by A. Muthukumar, Director, Practical Technologies, Madurai.



Seminar on “Electric Vehicle Technology” on 08-02-2020 by Mr. Shajagan, CADD Centre, Madurai.



ISTE Competition on “Geometric Modelling” on 03-02-2020 by Mr. S. Chidambarakumaran AP/Mech, Kamaraj College of Engineering and Technology, Madurai.



Guest Lecture on “Industrial Automation” on 10-02-2020 by Dr. S. Kumaravel, AP/EEE, NIT Calicut.



ISTE Guest Lecture on “Intro to Indus” on 07-03-2020 by Mr. Farwiz K, Manager, Manufacturing Engineering-Paint, Daimler India Commercial Vehicles Pvt. Ltd.

Department of Mechatronics Engineering

Faculty Publications

- ❖ Dr. K. Kannan has published a research paper on the title of “Analysis on the performance of bilateral filters in multi focused image fusion” in ICTACT Journal on Image and Video Processing 2020. (ISSN 0976-9102).
- ❖ Mr. P. Balasundar et al. has published a research paper on the title of “Physico-chemical study of pistachio (*Pistacia vera*) nutshell particles as a biofiller for eco-friendly composites” in Material Research Express, IOP Publications. (ISSN 2053- 1591).
- ❖ Mr. P. Balasundar et al. has published a research paper on the title of “A New Natural Cellulosic Pigeon Pea (*Cajanus cajan*) Pod Fiber Characterization for Bio-degradable Polymeric Composites” in Journal of Natural Fibers, Taylor & Francis Publications. (ISSN 1544- 046X).
- ❖ Mr. P. Balasundar et al. has published a research paper on the title of “Characterization of a novel natural cellulosic fiber from *Calotropis gigantea* fruit bunch for ecofriendly polymer composites” in International Journal of Biological Macromolecules, Elsevier Publications. (ISSN 0141-8130).

Department of Mechatronics Engineering

Attended FDPs/STTPs/Fellowship Programmes

- ❖ Dr. K. Kannan has attended AICTE Sponsored Short Term Course on “Internet of Thing: Concept and Implementation” held at IIITDM Kancheepuram on 15.11.2019 to 19.11.2019.
- ❖ Mr. P. Balasundar has attended AICTE-QIP Sponsored Short Term Course on “Advanced in Power Metallurgy and 3D Printing” held at IIT Kharagpur on 10.11.2019 to 16.11.2019.
- ❖ Mr. S. Kannappan has attended a Short Term Course on “Advanced Engineering Optimization through Intelligent Techniques” held at S.V. NIT Surat on 25.11.2019 to 29.11.2019.
- ❖ Mr. A. Ganesan has attended a PALS Sponsored Faculty Development Programme on “Teaching Learning Process” held at IIT Madras on 27.11.2019 to 29.11.2019.
- ❖ Mr. B. Aravind Kumar has attended an AICTE Sponsored Faculty Development Programme on “Power Electronic converters and controllers for EV and smartgrid” held at IIITDM Kancheepuram on 18.12.2019 to 22.12.2019.

Our faculty members actively attended various FDP, STTP, Hands on training / Workshop and Online courses during the period of lockdown.

S.No	Event	No. of Event Attended
1	FDP	14
2	STTP	01
3	Hands on Training / Workshop	03
4	Online Course	03

S. No.	Name of the Faculty Member	Date	Title of the Programme	Duration	Programme offered by
1.	Dr.K.Kannan	18.04.2020	FDP on Cyberforensics	1 Day	Kalasalingam Academy of Research and Education & Indian Servers
2.	Dr.K.Kannan	20.04.2020	FDP on Cybersecurity	1 Day	Vels Institute of Science and Technology & Indian Servers
3.	Dr.K.Kannan	27.04.2020 to 01.5.2020	FDP on Technological Advancement in Power System Control, Power Controllers, Drives & E-Vehicles - TAPPAD 2020	5 days	Dr.N.G.P.IT-IQAC and Sponsored by AUTODESK
4.	Dr.K.Kannan	28.04.2020	FDP on Developing Thinking abilities relevant to Engineering Education	1 Day	FACE
5.	Dr.K.Kannan	02.05.2020	FDP on Machine Learning	1 Day	Santhiram Engineering College
6.	Dr.K.Kannan	11-05-2020 to 16-05-2020	FDP on Research Challenges and Innovations in	1 Week	Aarupadai Veedu Institute of Technology

			Renewable Energy Systems		
7.	A.Arulkumar	28-05-2020 to 30-05-2020	Workshop on Technology Development of E-Vehicles	3 Days	Sri Venkateswara college of Engineering
8.	A.Arulkumar	25-06-2020 to 27-06-2020	Three Day STTP on "Advanced Power System Simulation Softwares"	3 Days	SSN College of Engineering
9.	A.Arulkumar	01-06-2020 to 05-06-2020	FDP on “Renewable Energy Systems”	5 day	RVS College of Engineering and technology
10	S.Kannappan	20.04.20 to 06.05.20	Two-week FDP Managing online classes and creating MOOCS	14 Days	Teaching Learning Centre Ramanujam College University of Delhi
11	S.Kannappan	12.05.2020	How to Write and Publish a Scientific Paper (Project-Centered Course - Four Week)	4 Week	Coursera (École Polytechnique)
12	S.Kannappan	12.05.2020	How to Get Skilled: Introduction to Individual Skills Management (Project-Centered Course - Six Week)	6 Week	Coursera (State University of New York)
13	S.Kannappan	16.06.2020	Campus Connect Learning Experience	5 Days	Infosys
14	S.Kannappan	04.05.2020	Season 4 - The Future of Education, Employment and Entrepreneurship	5 Days	ICT Academy Sky Campus
15	P. Balasundar	13.05.2020 to 18.05.2020	FDP on “Novel Materials and Its Industrial Applications”	1 Week	Karpagam College of Engineering, Coimbatore
16	P. Balasundar	25-05-2020	FDP on "Emerging Areas in manufacturing"	1 Week	Vimal Jothi Engg College, Kerala

17	P. Balasundar	15-06-2020	Faculty Development Programme on "Future Materials: Nanocomposites"	1 Week	Bharati Vidyapeeth (DU), COE, Pune (India)
18	P. Balasundar	22-06-2020	Faculty Development Programme on "Research Opportunities in Advanced Manufacturing Processes"	1 Week	Bharati Vidyapeeth (DU), COE, Pune (India)
19	P. Balasundar	29-06-2020	Faculty Development Programme on "Technological Advancement in Mechanical Engineering"	1 Week	BITS WARANGAL
20	B.Aravindkumar	12-05-2020	Training on CLAD (Lab View)	3 days	National Instruments
21	B.Aravindkumar	29-06-2020	FDP on Automation in industrial revolution	3 Days	Kalasalingam institute of Technology

Department of Mechatronics Engineering

Students Co-Curricular Activities

*Industrial Visit to GTN Textiles Ltd, Kerala and Kaveri
Plastics Pvt Ltd, Kerala on 08-08-2019 & 09-08-2019*



Department of Mechatronics Engineering

Students Co-Curricular Activities

Winners Details

S. No.	Name of the Student	Date	Name of the activity	Organizing Institute	Prizes Won
1	Prince Yona RLC.	23/01/2020 to 31/01/2020	District Skill Competition 2020	Tamil nadu Skill Development Corporation & District Administration, Madurai.	Second
2	Saravanakumar P.	23/01/2020 to 31/01/2020	District Skill Competition 2020	Tamil nadu Skill Development Corporation & District Administration, Madurai.	Second
3	Rahini G.	25/01/2020	Poster Presentation	St. Michael College of Engineering & Technology, Madurai.	First
4	Rohini G.	25/01/2020	Poster Presentation	St. Michael College of Engineering & Technology, Madurai.	First
5	Harshini T.	25/01/2020	Poster Presentation	St. Michael College of Engineering & Technology, Madurai.	First
6	Rahini G.	14/02/2020 & 15/02/2020	Model Presentation	KPR Institute of Engineering & Technology, Coimbatore.	First
7	Rohini G.	14/02/2020 & 15/02/2020	Model Presentation	KPR Institute of Engineering & Technology, Coimbatore.	First

Department of Mechatronics Engineering

Students Co-Curricular Activities

Participation Details

S. No.	Name of the Student	Date	Name of the activity	Organizing Institute	Remarks
1	Karthikeyan V.	28/09/2019	Non Destructive Testing – Penetrant Testing	Praziksana Training & Placement, Thoothukudi.	Participated.
2	Karthikeyan V.	28/09/2019	Python Web Development	Praziksana Training & Placement, Thoothukudi.	Participated.
3	Karthikeyan V.	28/09/2019	Industrial Automation – PLC & SCADA	Praziksana Training & Placement, Thoothukudi.	Participated.
4	Prince Yona RLC.	12/09/2019 to 14/09/2019	Recent Trends in Industrial Automation Using PLC Integrated with DCS	IOLOGIX Automation Solutions	Participated.
5	Prince Yona RLC.	14/07/2019	Workshop on “Solar Recent Technologies”	HILD Energy Private Limited, Kamuthi.	Participated.
6	Prince Yona RLC.	25/08/2019	Industrial Based Mobile Controlled Robotic Car	Coimbatore Institute of Technology	Participated.
7	Prince Yona RLC.	23/08/2019	PALS Workshop	Mepco Schlenk Engineering College, Sivakasi.	Participated.
8	Prince Yona RLC.	06/08/2019	Workshop on “Raspberry Pi”	Sri Ramakrishna Engineering College, Coimbatore.	Participated.
9	Prince Yona RLC.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
10	Tamilselvan V.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
11	Joy Sebastin S.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
12	Vishnu Kumar P.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
13	Sivaraj R.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
14	Adhavan A	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
15	Rathina samy R.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
16	Subasurya E.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.

17	Sylesh Karthik M.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
18	Karumalai Pandiyan P.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
19	Saravanakumar P.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
20	Dinesh Kumar M.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
21	Naga rajesh P.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
22	Siva P.	04/07/2019	Workshop on “Trends in Embedded Automotive”	Techland Automation, Trichy.	Participated.
23	Prince Yona RLC.	30/01/2020	District Skill competition 2020	Tamilnadu Skill Development Corporation, Madurai.	Participated.
24	Prince Yona RLC.	24/01/2020 & 25/01/2020	Workshop on “Hyperloop”	Madras Institute of Technology, Chennai.	Participated.
25	Prince Yona RLC.	24/01/2020 & 25/01/2020	Workshop on “Robotics”	Madras Institute of Technology, Chennai.	Participated.
26	Siva P.	24/01/2020	INFINITY 2k20	PSNA College of Engineering and Technology.	Participated.
27	Sivaraj R.	24/01/2020 & 25/01/2020	Workshop on “Embedded System Design with TI Controller”	Mepco Schlenk Engineering College, Sivakasi.	Participated.
28	Deeparaj Annamalai C.	23/01/2020 to 25/01/2020	Autonomous Mobile Robots	PSG centre for Non-formal and Continuing Education, Coimbatore.	Participated.
29	Abishek Samuel	23/01/2020 to 25/01/2020	Autonomous Mobile Robots	PSG centre for Non-formal and Continuing Education, Coimbatore.	Participated.
30	Ganesan M.	23/01/2020 to 25/01/2020	Autonomous Mobile Robots	PSG centre for Non-formal and Continuing Education, Coimbatore.	Participated.
31	Dev Ajay Kumar V S.	23/01/2020 to 25/01/2020	Autonomous Mobile Robots	PSG centre for Non-formal and Continuing Education, Coimbatore.	Participated.
32	Eashwar N N.	23/01/2020 to 25/01/2020	Autonomous Mobile Robots	PSG centre for Non-formal and Continuing Education, Coimbatore.	Participated.
33	Aravindasundar M.	23/01/2020 to 25/01/2020	Autonomous Mobile Robots	PSG centre for Non-formal and Continuing Education, Coimbatore.	Participated.

34	Benwin steward J J.	23/01/2020 to 25/01/2020	Autonomous Mobile Robots	PSG centre for Non- formal and Continuing Education, Coimbatore.	Participated.
35	Karthikeyan V.	28/09/2019	Industrial Automation on Programmable Logic Controller	Praziksana Training & Placement, Thoothukudi.	Participated.
36	Abishek S.	21/12/2019 to 31/12/2019	Workshop on Javascript	TANDEM Informatics, Madurai.	Participated.
37	Sai sethuraman M.	04/01/2020 & 05/01/2020	Workshop on “Advanced course training on Electric Vehicles and Smart Battery Management System”	EVOLTX, Chennai.	Participated.
38	Saravanakumar P.	30/01/2020	District Skill competition 2020	Tamilnadu Skill Development Corporation, Madurai.	Participated.
39	Saravanakumar P.	24/01/2020 & 25/01/2020	Workshop on “Hyperloop”	Madras Institute of Technology, Chennai.	Participated.
40	Saravanakumar P.	24/01/2020 & 25/01/2020	Workshop on “Robotics”	Madras Institute of Technology, Chennai.	Participated.
41	Rahini G.	25/01/2020	Poster Presentation	St.Michael College of Engineering & Technology, Madurai.	Participated.
42	Rohini G.	14/02/2020 & 15/02/2020	Poster Designing	KPR Institute of Engineering & Technology, Coimbatore.	Participated.
43	Rahini G.	25/01/2020	Poster Presentation	St.Michael College of Engineering & Technology, Madurai.	Participated.
44	Rohini G.	14/02/2020 & 15/02/2020	Poster Designing	KPR Institute of Engineering & Technology, Coimbatore.	Participated.
45	Eashwar N N.	16/2/19 &17/2/19	Workshop on Ethical hacking and cyber forensics	Madras Institute of Technology, Chennai.	Participation
46	Eashwar N N.	16/2/19 &17/2/19	Workshop on Internet of things	Madras Institute of Technology, Chennai.	Participation

OUR RECRUITERS



Department of Mechatronics Engineering

1. HYBRID VEHICLES

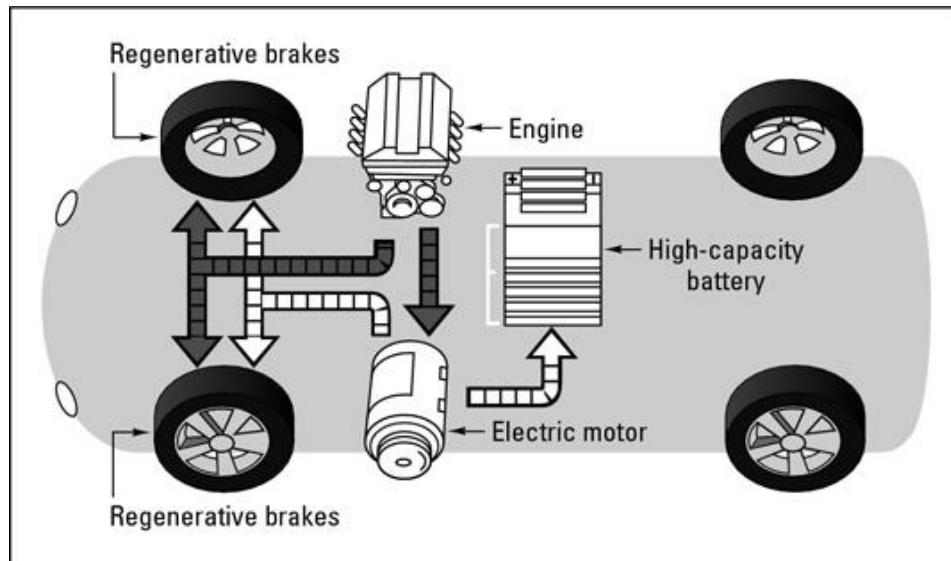
Hybrid vehicles are called *hybrids* because they use both a small internal combustion engine (ICE) and an electric motor to obtain maximum power and fuel economy with minimum emissions. How they do this varies from one model to another, with varying success.

What all hybrids have in common is the ability to generate electric current, store it in a large battery, and use that current to help drive the car. Hybrids capture electrical energy produced by a regenerative braking system, and their engines can power a generator, too. Hybrids can also conserve energy by shutting down the ICE when the vehicle is in Park, idling at a light, or stopped in traffic, or when the electric motor's energy is sufficient to drive the vehicle without assistance from the ICE.

Hybrids have regenerative braking systems that generate electric power to help keep the batteries charged. When the driver applies the brakes, the electric motor turns into a generator, and the magnetic drag slows the vehicle down. For safety, however, there is also a normal hydraulic braking system that can stop the car when regenerative braking isn't sufficient. There's no difference in maintenance or repair except that the brake pads tend to last much longer because they don't get used as much. In fact, if you drive a hybrid in a moderate manner, you almost never actually use the disc brakes on the wheels and may be able to go the life of the car without changing pads. The big difference is that regenerative brakes capture energy and turn it into electricity to charge the battery that provides power to an electric motor.

Parallel hybrids

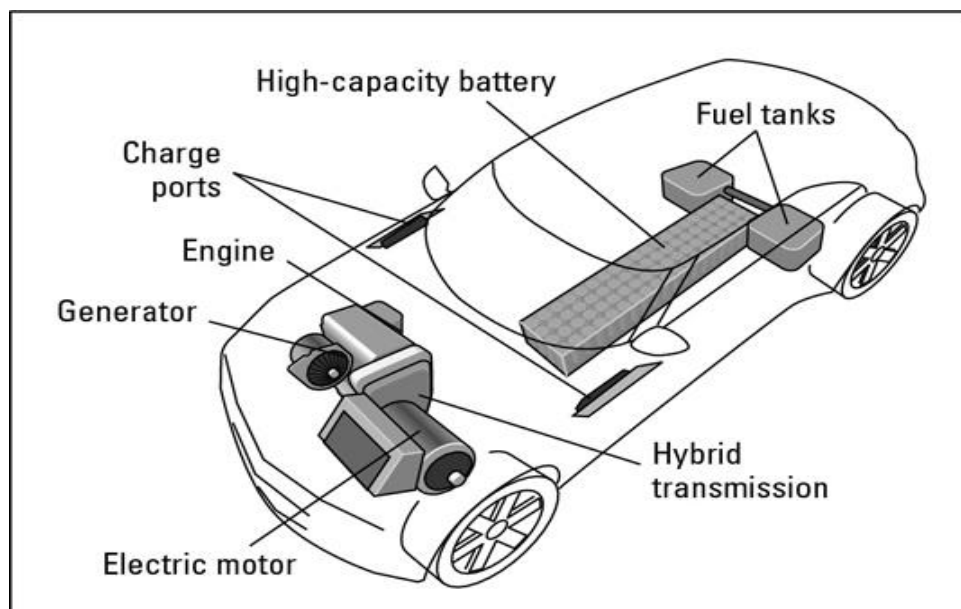
A parallel hybrid uses both an electric motor and an ICE for propulsion. They can run in tandem, or one can be used as the primary power source with the other kicking in to assist when extra power is needed for starting off, climbing hills, and accelerating to pass other vehicles. Because both are connected to the drive train, they're said to run "in parallel."



Parallel hybrid works.

Series hybrids

A series hybrid uses a gasoline or diesel ICE, coupled with a generator, to generate electricity but not to drive the car. The engine can send the electric current directly to the electric motor or charge a large battery that stores the electricity and delivers it to an electric motor on-demand. The electric motor propels the vehicle, using its power to rotate a driveshaft or a set of drive axles that turn the wheels.



A series hybrid.

R.Rooban

16UMTR005

IV Year Mechatronics

2. WAGON FIRE SAFETY

The trains are moderate vehicles used for transporting people and goods. Fire safety is an area of particular interest in traveller's passenger trains, and new high speed trains. Failure in the routine maintenance system or by the activities of illegal social elements, the fire accidents in train occur frequently. These fire accidents are among the most serious disasters to human lives. Train compartment is very special limited spaces; fire smoke in compartment brings great hazards when fire broke out. It is the main reason which caused people to die or hurt. The prevention of train fire has become a serious concern in our country. Currently ours Indian Railways don't use any sophisticated fire prevention methods. To overcome this, we propose a system of having an automatic sensor monitoring of fire and smoke sensor. From the information collected by the system, we made four levels of approach. At the first level, when the fire is detected by the sensor we cut off the main supply and provide a secondary light to navigate the people. In the second level automatic door and window opening is done, for the need of escaping the passengers and the hazardous smoke. In the third level automatic fire extinguishing is used to reduce spreading of fire. At last information about this fire accident is communicated to the control room is done, for the need of initiating the necessary actions.

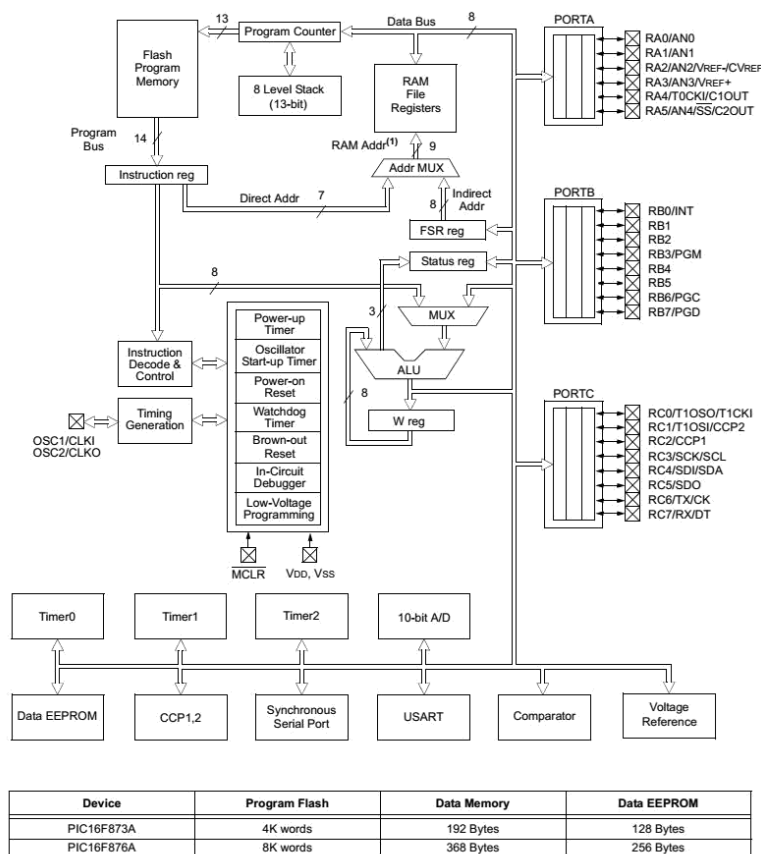
EXISTING SYSTEM

The thermocouple temperature sensors to monitor for fire conditions within rail coach and provide external and internal alarms, together with automatic operation of the train braking system. When the temperature senses it triggers the alarm in the coaches to make the people alert and wake up who are sleeping. The carriage Controllers have associated with the LED batteries such that fire protection is maintained by indicating the colour lights in the driver's display unit. As a backup, the alarm also installed in the engine driver. This provision is created to ensure that the engine driver does not oversight the illuminator light.

DRAWBACKS OF EXISTING SYSTEM

Train compartment is very special limited spaces fire& smoke in compartment brings great hazards when fire broke out. It is the main reason which caused people to die or hurt. The prevention of train fire has become a serious concern in our country. Currently, Ours Indian Railways don't use any sophisticated fire prevention methods. But it is realized to have an automatic system to monitor the fire in the coach. The fire may occur in any form of activities such as short circuit in the electrical wires, prohibited activities of carrying diesel, petrol, gas stoves and smoking nearby them will cause fire accidents. Using sudden alarm will create panic among the people, and using of thermocouple sensor consumes high amount.

PROBABLE CAUSES OF FIRE IN RAILWAY COACHES



There are varieties of reasons which may be a source of initialization of fire; some of them are mentioned below-

1. Carrying Inflammable goods like stove, gas cylinder, kerosene oil, petrol, fireworks etc. in passenger coaches.
2. Making fire/ using fire near paper, wood, petrol or such other inflammable articles.
3. Throwing waste material outside the dust bin near door.
4. Malpractices like smoking and carelessly thrown lighted match sticks, cigarette/ Bidi butts etc.
5. Panic has also been noticed to have been caused among the passengers due to smoke emission in case of brake binding/ hot axle.
6. Insertion of cigarette butts, Bidi butts, Gutakha, wrapper etc. in fan base, fuse distribution board, roof openings etc.
7. Sabotage / Discrepancy.
8. Mishandling/ careless use of pantry equipment by pantry car staff.
9. Leakages/ Blasts of Pantry Gas Cylinders.
10. Careless storage of inflammable materials like news papers, edible oil etc. in pantry cars.

CONCLUSION

The project “**RAILWAY WAGON SAFETY MANAGEMENT SYSTEM**” has been completed successfully and the output results are verified. The results are in line with the expected output. The project has been checked with both software and hardware testing tools. In this work “**power supply, fire Sensor, Smoke sensor relay driver, DC motor**” are chosen and proved to be more appropriate for the intended application. The project is having enough avenues for future enhancement. The project is a prototype model that fulfills all the logical requirements. The project with minimal improvements can be directly applicable for real time applications. Thus the project contributes a significant step forward in the field of “**Railway Platform**”, and further paves a road path towards faster developments in the same field. The project is further adaptive towards continuous performance and peripheral up gradations. This work can be applied to a variety of industrial and commercial applications.

E.Suba Surya

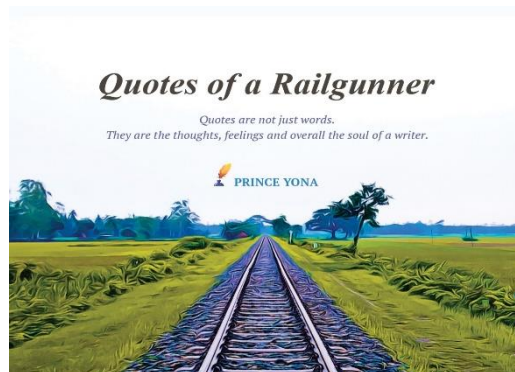
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IV Year MTRE

3. Quotes of a Railgunner

The Quotes given here are written by Prince Yona RLC de Railgunner of 2nd Year, Mechatronics Engineering. Railgunner is his pen - name as a Quotes Writer. He has written a Quotes Book called "QUOTES OF A RAILGUNNER " & here is a Sneak peek of some of his published quotes.

- 1) Our Birth might be the 'Future' for our parents, but our death will be considered as a 'Past' by our Children.
- 2) Engineers are Meme Creators in Spare Time, Party Addicts in Free Time and the only entertainer in a Gang
- 3) No love is greater than Mother's Love & No care is greater than Father's Care
- 4) Thoughts are the Missiles which come out of the Silo called Brain.
- 5) Bad Memories are the Imprints made on the Sea Shore. They always get washed away by the Waves
- 6) If you want to taste Victory, then you have to experience Defeat, otherwise you wouldn't know the worth of Victory and the pain of Defeat.
- 7) The World doesn't care whether you are happy or sad. If you are happy, then the world will try to make you sad. If you are already sad, then this world will make you even sadder.
- 8) Never ever expose your weakness to this world. The world is too much interested to play with your weakness.
- 9) A Good Person will always have a Tragic Past.
- 10) If Everyone Understands your Slang and Style, then you are not a Unique Person. If No One Understands your Slang and Style, then you are not a Ordinary Person.

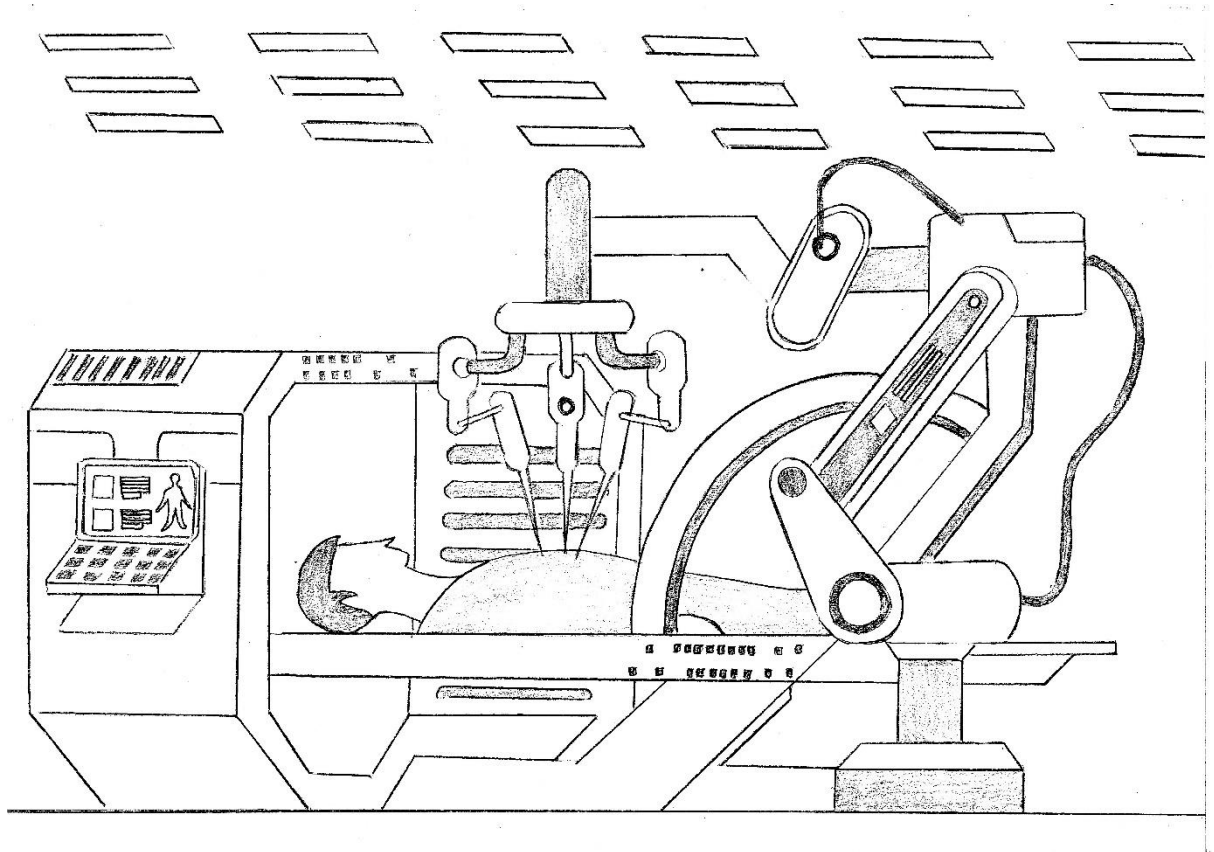


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II Year Mechatronics

4. ROBOTIC SURGERY



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16UMTR017

IV Year

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