

August 22, 2019

# AUTOPEDIA' 19

Semester News Letter for Automobile Engineers



## **Vision of the Institution:**

- ◆ Imparting innovative higher education with greater accentuation on high value systems shaping personnel for nation-building.

## **Mission of the Institution:**

- ◆ To impart quality technical education by providing state-of-the-art infrastructure with dedicated faculty.
- ◆ To provide contemporary technical education for facing the needs and challenges of industries and research establishment at global level.
- ◆ To effect socio-economic transformation of society by inculcating human values and social responsibilities.

## **Vision of the Department**

- ◆ To become the preferred destination and Centre of Excellence in Automobile Engineering.

## **Mission of the Department**

- ◆ To provide state-of-the-art infrastructure to impart quality education.
- ◆ To develop employable and industry ready engineers capable of solving real time problems in automobile industries.
- ◆ To inculcate the social values, ethics, and leadership qualities among the students.

## **HOD Desk:**

I wish all success to the final year students, who is going to encounter fresh challenges in their life. The department always concentrated on providing quality education and also stand by the motto of the institution "Character is Life", we feel that learning does not end here in college. For a student to succeed in life he needs to have this in mind "What you learn, how you learn and where your learn" is base to any level of education to instil creativity we guarantee all three. The Department of Automobile engineering has excellent and quality faculty members who give importance to skill enhancement and infrastructure development, to provide student with knowledge and also train students to face real life challenges by providing valuable courses and suggestions towards a successful career. The Academic year is coming to an end soon I take this opportunity to thank all the faculty members and students who is the backbone of all the success of our department Cannot forget the racing teams who continuously put their time, sleep and effort for their dream.

## Programme Educational Objectives (PEOs)

<b>PEO1 :</b> (Career)	Have successful career in automobile or allied engineering industries or research organizations.
<b>PEO2 :</b> (Skill & Life Long Learning)	Exhibit life long learning by engaging themselves in current technological advancement throughout their life.
<b>PEO3 :</b> (Team work & Ethics)	Work in teams discharging professional responsibilities as an engineer by obeying ethical practices.

## PROGRAM SPECIFIC OUTCOMES (PSOs)

Our graduates will be able to	
<b>PSO1</b>	Apply knowledge of automotive design, Automotive materials and Hybrid vehicle technology to solve complex problems in automobile engineering and its allied areas.
<b>PSO2</b>	Analyze, design and evaluate Automobile components and systems with the help of modern CAD/CAM/CAE tools while ensuring best engineering practices.

## Guest lecture:

- ◆ Guest lecture on “Battery Management system”, Dr. N.Vedaraman, Scientist, Chemical Engineering Department, CSIR-CLRI, Guindy on 04.03.2019.



## Program Outcomes (POs)

After the successful completion of Engineering Program, the graduates will be able to	
<b>PO1</b>	<b>Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
<b>PO2</b>	<b>Problem analysis:</b> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
<b>PO3</b>	<b>Design/development of solutions:</b> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
<b>PO4</b>	<b>Conduct investigations of complex problems:</b> 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.
<b>PO5</b>	<b>Modern tool usage:</b> 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.
<b>PO6</b>	<b>The engineer and society:</b> 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
<b>PO7</b>	<b>Environment and sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
<b>PO8</b>	<b>Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
<b>PO9</b>	<b>Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
<b>PO10</b>	<b>Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
<b>PO11</b>	<b>Project management and finance:</b> 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.
<b>PO12</b>	<b>Life-long learning:</b> 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.

# AUTOPEDIA'19

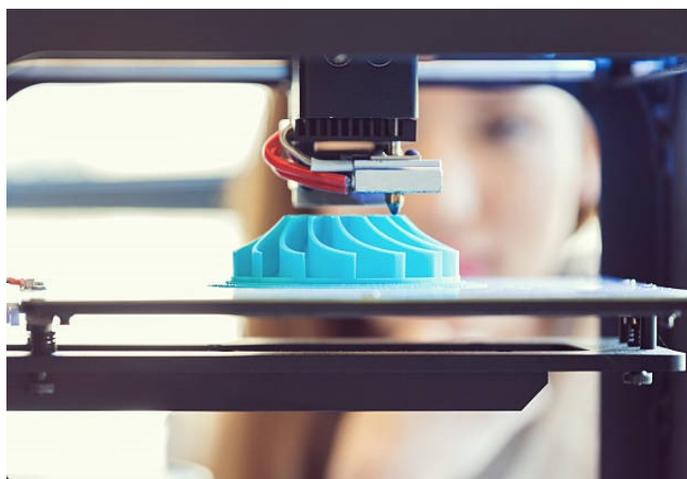
Semester News letter for Automobile Engineering

- ◆ Guest lecture on “Additive Manufacturing in Automotive Sector”, Mr. Dhanasekar, Senior Manager, ALTEM Technologies, Chennai on 10.01.2019.



### Workshop:

- ◆ One day workshop on “Additive Manufacturing using 3D Printer” with Hands on Training, M/s CADDAM Technologies Pvt. Ltd. on 28.02.2019.



### Research paper published:

- ◆ Nandhakumar.P.V, Karthikeyan.N, Selvaraj.B, Chellaperumal.D “Fabrication of Composite plate Using Palm Tree Fiber Reinforced With Glass Fiber and testing its Mechanical Properties” International research Journal of Engineering and Technology Vol.6/Issue 7, 2019.
- ◆ Karthikeyan.N, Nandhakumar.P.V, Ekanthamoorthy.J , Selvaraj.B ”Characterisation Study of Metal Matrix Composite of Aluminium+Fly Ash+Sic Using Stir Casting Method” International research Journal of Engineering and Technology, Vol.6/Issue 7, 2019.
- ◆ Chellaperumal.D, Karthikeyan.N, Nandhakumar.P.V, Ekanthamoorthy.J, ”Fabrication and Mechanical Testing on Natural Fiber Composite” International research Journal of Engineering and Technology Vol.6/Issue 7, 2019.

### Conference publication

- ◆ Jayakumar.D, Vignesh.G “An Overview of Bio-fuel as a Renewable Energy Source Development and Challenges” RRET'19 International Conference on Recent Researches in Engineering & Technology-2019 on 30/9/2019 at Dr.Kalam Institute of Engineering Research, Chennai.
- ◆ Dhivakar.S, Ezhumalai.P “Fuel efficiency improvement in petrol engine by using Water Air injection” ICMSMT 2019 on12/04/2019 at Sri Shakthi Institute of Engineering and Technology.
- ◆ Sathrack.J, Vignesh.E “Single cylinder Four stroke Turbocharged SI engine” VITECON 2018, on 31/03/2019 at VIT University.
- ◆ Azhaghuvel.G, Prakash.V “Automatic Tyre Pressure Inflation system” 3rd International Conference on Recent Trends in Science, Engineering and Management on 23/03/2019 at Karpaga Vinayaga College of Engineering and Technology.
- ◆ Jayasuriya.R, Rakesh.R “Dual Fuel Gasoline Engine on Gas” 3rd International Conference on Recent Trends in Science, Engineering and Management on 23/03/2019 at Karpaga Vinayaga College of Engineering and Technology.

# AUTOPEdia'19

Semester News letter for Automobile Engineering

- ◆ Sundararaman.G, Karthikeyan V “Characterization of large format lithium ion battery exposed to extremely high temperature” 3rd International conference on Recent trends in science, engineering and management on 23/03/2019 at Karpaga Vinayaga College of Engineering and Technology.
- ◆ Kanishkar B, Revanth R “A brief review on key technologies in the battery management system of electric vehicles” 3rd International conference on Recent trends in science, engineering and management dated on 23/03/2019 at Karpaga Vinayaga College of Engineering and Technology.
- ◆ Arun.A, Balaji.C, Bharath.ES “Properties and analysis of composite materials” 6th International Conference on Contemporary Engineering and Technology dated on 21/03/2018 at Prince Shri Venkateshwara Padmavathy Engineering College, Chennai.

### Social outreach:



Social outreach program conducted at Chengalpattu bus stand and issued pamphlet explaining the needs of following traffic rules and wearing helmets and consequently held at various places like Maduranthakam, Acharapakkam and Chrompet.



# AUTOEDIA'19

Semester News letter for Automobile Engineering

## THE FUTURE AUTOMOTIVE TECHNOLOGIES :

### Night vision with pedestrian detection

Although night vision in vehicles isn't a new technology — Cadillac offered it in 2000 — the Mercedes-Benz updated version is called Night View Assist Plus. Unlike the Night View Assist, which has been available in the S-Class since 2005, the new system pinpoints pedestrians, highlighting them on a dashboard display. It's offered in the 2010 E-Class in showrooms late this spring. BMW has a similar system with a pedestrian identifier that also shows the direction the pedestrian is moving. As the distance closes between pedestrian and vehicle, a warning appears on the night vision monitor as well as the head-up display on the windshield if so equipped. BMW offers this system on the 2009 7 Series.

### Automatic high-beam control

In the redesigned RX, Lexus offers a system that automatically illuminates and dims the high-beam headlights in relation to approaching traffic. A camera mounted on the rear view mirror detects when the vehicle is closing in on oncoming traffic, as well as vehicles ahead travelling in the same direction, and disengages the high beams. Mercedes-Benz takes the technology one step further with its Adaptive High beam Assist. Also found in the new E-Class, it doesn't merely switch between low and high beams, but reacts by gradually increasing or lowering the light distribution based on the distance of approaching traffic. It also dims the high beams for sharp turns and then re-engages the high beams if there is no approaching traffic once the turn is completed.

### Driver capability

Although it might be beneficial to have a system that evaluates driver aptitude and shuts down the vehicle when incompetence is detected, we aren't there yet. But technology exists that measures a driver's fitness and issues warnings when a driver is judged overly tired or impaired. Attention Assist, found in the 2010 Mercedes-Benz E-Class, remembers a driver's normal behavior behind the wheel and establishes it as the driver's baseline profile. Continually measuring factors such as speed, lateral acceleration, steering wheel angle, pedal use and so forth, the system determines if there is any deviation from the baseline. If so, it alerts the driver visually and audibly that it's break time. Even external influences such as crosswind and road surface are factored in.

### In-car Internet

Although pure Wi-Fi Internet access from a moving vehicle is still in the future — albeit the near future — there are systems that allow for surfing using cell phone technology. The first system to turn your vehicle into a Wi-Fi hotspot is Autonet Mobile. Using a portable router mounted in the trunk or other out-of-the-way location, this system uses a 3G network to supply an uninterrupted signal regardless of cell tower blind spots, tunnels and so forth. In addition to the \$399 router, there is a monthly subscription fee of either \$29 or \$59 based on estimated usage. Chrysler currently offers its U Connect Web system in several models while Ford offers a system called Ford Work Solutions on the current F-150 pickup truck that primarily targets contractors. It dovetails several technologies into an integrated system that can complete a variety of tasks from maintaining your tool inventory to sending out invoices, creating spreadsheets and surfing the Internet through the Sprint Mobile Broadband Network.

BY

Mr. S. SELVA PRABHU  
Assistant Professor,

Department of Automobile Engineering, KVCET.

## ALUMNI TESTIMONIAL



**Mr .Ramkumar**

**Junior Engineer- Export Quality Assurance  
MK Tron Autoparts Pvt Ltd,Chennai**

It was a happy experience in pursuing my degree from Karpaga Vinayaga College of Engineering and Technology, Automobile Engineering Department has a very good laboratory infrastructure to Enhance our skills and knowledge.

# AUTOPEdia'19

Semester News letter for Automobile Engineers