

VISION

- The Mechanical Engineering department strives to produce quality engineers to enable them pursue diverse careers with professional standards and ethical values

JULY-DEC 2018, Vol-4, Issue-1



NEWS LETTER

2018 - 2019

MISSION

- To provide relevant and quality education to meet needs of industry and society.
- To equip with requisite set of skills and knowledge to succeed and thrive as engineers and leaders.
- To provide a continuous learning environment for promoting research activities
- To provide a competitive atmosphere to encourage innovative and original thinking.

DEPARTMENT OF MECHANICAL ENGINEERING



Editorial Board:

Principal: Dr.D.Hanumantha Rao

Faculty: Dr M V Kishore

Mr Sampath Siddam

Student: Mr Sai Krishna

Head: Dr.D.Hanumantha Rao

Faculty: Mr Sampath Siddam

Student: Mr Y Prashanth

Faculty Corner:

Faculty Publications

- + Dr. D Hanumantha Rao, Professor ,Published a Technical paper entitled An Experimental Study On The Mechanical Properties Of Thixoformed Components In Aluminum Alloys'International Journal of Creative Research Thoughts, Feb 2018, Hyderabad.
- + Dr. D Hanumantha Rao, Professor,Published a Technical paper entitled 'Identification Of Process Parameters In Thixoforming Process Using Fuzzy logic Approach' National Conference on Recent Trends in Mechanical Engineering, NCRTME - 2018, JNTUH, Feb 2018.
- + Dr. MV Kishore, Associate Prof ,Published a Technical paper entitled An Experimental Study On The Mechanical Properties Of Thixoformed Components In Aluminum Alloys'International Journal of Creative Research Thoughts, Feb 2018, Hyderabad
- + Mr.M.Krishna has published a paper on Ratio Delay Study of Public Transport Buses in JETIR ISSN: 2349-5162July 18, Vol 5, Issue 7

FDPs / STTPs / Workshops attended by the Faculty

- ❖ Dr.M.V.Kishore Associate professor
 - Attended workshop on refrigeration & Automobile Air Conditioning held at MVSR Engineering College Hyderabad from 23rd July to 28th July 2018
- ❖ Mr C Venkateshwara Reddy Assistant Professor
 - Published a paper in International journal of Engineering Research and Applications (IJERA) ISSN 2248-9622 vol-8, Issue 7 (part-III) July 2018 “Mechanical Characterization of Carbon Epoxy unidirectional and bi-directional composites for structural applications-(IJERA) ISSN 2248-9622 vol-8,
- ❖ Mr V Harinath Assistant Professor
 - Attended Workshop on Electrical Vehicle design & Dynamics conducted by Mechanical department in Association with ISIE from 26th-29th September 2018
- ❖ Mr.T Somashekar Assistant Professor
 - Attended workshop on refrigeration & Automobile Air Conditioning held at MVSR Engineering College Hyderabad from 23rd July to 28th July 2018
 - Attended Pedagogical skills for Faculty in outcome based Engg education at MECS Hyderabad from 23rd-25th August 2018
- ❖ Mr.Naveen Kishore Assistant Professor
 - Attended Pedagogical skills for Faculty in outcome based Engg education at MECS Hyderabad from 23rd-25th August 2018
- ❖ Mr Kalyan Charan Assistant Professor
 - Attended Workshop on Electrical Vehicle design & Dynamics conducted by Mechanical department in Association with ISIE from 26th-29th September 2018
- ❖ Mr.Sampath Siddam Assistant Professor
 - Attended workshop on refrigeration & Automobile Air Conditioning held at MVSR Engineering College Hyderabad from 23rd July to 28th July 2018
 - Attended Pedagogical skills for Faculty in outcome based Engg education at MECS Hyderabad from 23rd-25th August 2018
 - Attended Workshop on Electrical Vehicle design & Dynamics conducted by Mechanical department in Association with ISIE from 26th-29th September 2018
- ❖ Mr.Sai Pavan Assistant Professor
 - Attended Pedagogical skills for Faculty in outcome based Engg education at MECS Hyderabad from 23rd-25th August 2018

Events Organized

- ✓ Three day workshop on “ELECTRICAL VEHICLE DESIGN & DYNAMICS” organized by department of mechanical in collaboration with IMPERIAL SOCIETY OF INNOVATIVE ENGINEER from September 27th-29th 2018 at MECS Engineering College
- ✓ A guest lecture by Mrs.Sharada Prabhakae outstanding Scientist, Scientist-G, Deputy Director, ASL, DRDO, Hyderabad --“Advanced Materials and its Processing” on 3rd August 2018 at MECS Engineering College
- ✓ Abhigyan 2k18- PROJECT EXPO organized by Department of Mechanical Engineering on October 5th 2018
- ✓ Uttkranthi a two day workshop on Robotics and Ansys organized by Department of Mechanical Engineering in Association with Aakaar-2019 IIT Bombay on 10th-12th September 2018
- ✓ A Seminar on “Heating Ventilation & Air Conditioning [HVAC]” by Mr. Syed Abdul Gaffar (CEO, Managing Director) Founder, Promoter and Managing Director of KG Group,Hyderabad on 14th September 2018
- ✓ A Seminar on “Innovate Invent & Patent ” by Mechanical engineering department in association with Allinov Research development Pvt.Ltd

Events Organized in association with Professional Society's

- SAE Tier 1 technical events held at Matrusri Engineering college on 27th September 2018

Faculty Achievements

- ✓ Mr M V Kishore Associate Prof Mechanical Department has submitted his thesis and was awarded PhD on “Effect of Process Parameters on The Mechanical Properties of Aluminum Alloy in Thixoforming Process – An Experimental Study” April 2018 from JNTU, Hyderabad.
- ✓ Mr A Kalyan Charan Asst Prof pursuing PhD in JNTUH, has completed pre-PhD in March 2018

MoU Singed by Department

- ❖ An MoU is signed between Matrusri Engineering College, Hyderabad and Imperial Society for Innovative Engineers (ISIE-India) on 25th Aug 2018. As part of MOU, ISIE organizes various collaborative Skill Development Programs for the students of Mechanical, ECE and EEE students including summer training programs and starting a Student Research Association.

Students' corner:

Internships By Students

- BIG toe Analysis of Biped Robot - Gait generation method under Prof.Throshi by C.Manaswini of 4 ME at Hasegania ShiBAura inst of Tech, JAPAN from July 1st to August 15th 2018.

- Study of missile and its subsystems R.Abhishek, Bharadwj.k, Y.Prashanth of 4 ME at DRDL, Hyderabad from 16.06.2018 to 18.09.2018.
- NON DESTIVITIVE TESTING DRDO (ASL) by Yosha Ali, MD. Saiahuiddin , Shaik sikander pasha, at Advanced system laboratory DRDO, Hyderabad from 5th July o 29th August 2018.
- "Identification of appropriate resonance region for envelop analysis in rolling element bearings " by Anandini Sravya at IIT Madras from 26t June 2017 to 28th July 2017
- Manufacturing of condensers ,H.P.L.P heatrus by V.Prudhvy Raj of 3 ME at BHEL, Hyderabad from June 2018 to June 2018
- Study of Power plant familiarization by Surya Datta Sudhakar of 3 ME at BHEL, Hyderabad from 16.06.2018 to 30.06.2018.

State and National level Participation

- ❖ S Mahipal of 3ME has participated in SAE Tier 3 events, in (Engineering problem solving, Engineering Drawing, Engineering Design, Design of Assembly) scheduled from 30.03.2018 to 31.03.2018at MLRIT, Hyd..
- ❖ M Nikhil of 3ME has participated in SAE Tier 3 events, in (Light weight mobility, Onboard diagnosis, Reverse engineering,) scheduled from 30.03.2018 to 31.03.2018at MLRIT, Hyd..
- ❖ Surya Datta, Pruthviraj of 3ME has participated in QUIZZOTIC V8.0 National Level Techno-general Quiz scheduled on 24.03.2018 at O.U, Hyderabad .
- ❖ K. Bhargava, G.Harsha, G.Prem, A.Sakshith of 1ME has participated in IB Hubs 2day workshop with IIT kharagpur scheduled from 20-21st March 2018 at MRCET, Hyderabad
- ❖ S Mahipal of 3ME has participated in MECHARENA 2K18 scheduled from 9th-10th March 2018, at O.U, Hyd..
- ❖ S Mahipal,Sai kumar of 3ME has participated in Bridge Biulder , scheduled from Feb 9-11th 2018, at IIT, Hyd.
- ❖ Sai Krishna, Sai kumar of 3ME has participated in CAD-Pro , scheduled from Feb 9-11th 2018, at IIT, Hyd.
- ❖ S Mahipal of 3ME has participated in Two Day National workshop on CAD , scheduled from 20-21st Jan 2018, at Methodist College, Hyd
- ❖ A group of 11 students has participated in Go-Kart Design, scheduled from 18th-19th Feb 2018, at S.R.K.R college, Bhimavaram, Andhra Pradesh

Prizes/ Awards received by students

About 13 students have secured I and II positions in various extracurricular events conducted by reputed institutes and Universities in the state.

- ✚ S.Sai Krishna, V.Prudhvy raj , S.Radheshyam , Phani Kumar of 2ME,3ME has won 1st Prize in SAE Tier 3 events in (process planning) organized at MLRIT, Hyderabad from 30-31st March 2018.
- ✚ Surya Chaitanya, Nikhil Kumar of 3ME has won 1st Prize in SAE Tier 3 events in (On-board diagnosis) organized at MLRIT, Hyderabad from 30-31st March 2018.

- ✦ Surya Chaitanya, Nikhil Kumar, Bharath Chandra of 3ME has won 3rd Prize in SAE Tier 3 events in (Jet Design) organized at MLRIT, Hyderabad from 30-31st March 2018
- ✦ S.Sai Krishna, of 3ME has won 1st Prize in CONNAISSANCE 2K17 (Machining) organized at JNTUH, Hyderabad from 14-15th March 2018
- ✦ S Mahipal, Sai kumar of 3ME has won 1st prize in Elan vision national level techfest, organized at JNTUH, Hyderabad from 9-11th Feb 2018

Student Articles

Antilock Braking System and Its Advancement

INTRODUCTION

To fulfill different government norms which are set for environment protection and to satisfy ever increasing needs for safety and comfort, ECU is used. Initially before era of electronics, mechanical setting takes place to fulfill requirements. But, doing mechanical settings is very difficult task. For doing these settings some physical parameters need to be considered. e.g. Pressure, temperature, etc. As development has taken place in electronics area processing on such physical signals has become easy. Sensor senses physical parameters and give those signal as input to transducer. Transducer converts physical signal into electrical signal (either voltage or current). Now processing on these signals is easy. Hence concept of Electronic Engine has arisen.

Antilock Braking System:

An anti-lock braking system or anti-skid braking system (ABS) is an automobile safety system that allows the wheels on a motor vehicle to maintain tractive contact with the road surface according to driver inputs while braking, preventing the wheels from locking up (ceasing rotation) and avoiding uncontrolled skidding. It is an automated system that uses the principles of threshold braking and cadence braking which were practiced by skillful drivers with previous generation braking systems. It does this at a much faster rate and with better control than a driver could manage. ABS generally offers improved vehicle control and decreases stopping distances on dry and slippery surfaces; however, on loose gravel or snow-covered surfaces, ABS can significantly increase braking distance, although still improving vehicle control

Working:

- Typically ABS includes a central electronic control unit (ECU), four wheel speed sensors, and at least two hydraulic valves within the brake hydraulics.
- The ECU constantly monitors the rotational speed of each wheel; if it detects a wheel rotating significantly slower than the others, a condition indicative of impending wheel lock, it actuates the valves to reduce hydraulic pressure to the brake at the affected wheel, thus reducing the braking force on that wheel; the wheel then turns faster.
- Conversely, if the ECU detects a wheel turning significantly faster than the others, brake hydraulic pressure to the wheel is increased so the braking force is reapplied, slowing down the wheel.
- This process is repeated continuously and can be detected by the driver via brake pedal pulsation. Some anti-lock systems can apply or release braking pressure 15 times per second.
- Because of this, the wheels of cars equipped with ABS are practically impossible to lock even during panic braking in extreme conditions.

Advantages

- ABS guarantees stable braking characteristics on all road surfaces, hence avoids overturning of the vehicle.
- ABS reduces friction on wheels and road, thus increases efficiency of tires (up to 30%).
- Vehicle with ABS can be stopped at a lesser distance than a non ABS vehicle.
- Steering control is effective, i.e., vehicle can be steered smoothly while braking. Thus minimizes the accidents.
- A driver without experience can drive ABS vehicle effectively, than an experienced driver on the non ABS vehicle.

Disadvantages

- Initial cost for ABS vehicle is high.
- Maintenance issues arise as the whole braking system is controlled by engine control unit.
- On concrete roads, the ABS vehicle stopping distance might be needed more
- To overcome disadvantages of antilock braking system automobile industry has introduced an advancement in working of braking system known as electronic brake-force distribution.

**Sushmitha
Mech-3/4**

Parker Solar Probe: Mission to Touch the Sun

The sun is the primary source of Earth's light and heat, but that's not the only way it affects the planet. The solar wind is a collection of charged particles that stream from the star and flow past Earth at speeds of more than a million mph (400 kilometres per second), according to NASA. Disturbances in the solar wind can shake our planet's magnetic field and pump energy into the radiation belts, triggering a set of changes known as space weather. Space weather can affect satellites, changing their orbits, interfering with their electronics, or shortening their lifetimes. Understanding how the solar wind and space weather works can help protect these valuable assets.

The probe launched on Aug. 11, 2018, from Cape Canaveral, Florida. It will study how heat and energy move through the corona and explore what accelerates the solar winds that affect Earth and other planets. The probe is named after Eugene Parker, who first hypothesized that high-speed matter and magnetism constantly escaped the sun, and that it affected the planets and space throughout our solar system. This phenomenon is now known as the solar wind.

SPACECRAFT:-

PSP will swoop closer to the Sun's surface than any spacecraft before it, facing brutal heat and radiation conditions. The spacecraft will come as close as 3.83 million miles (and 6.16 million kilometers) to the Sun, well within the orbit of Mercury and more than seven times closer than any spacecraft has come before.

Where is Parker Solar Probe?

The plot shows Parker Solar Probe's location and speed (relative to the Sun) as it conducts its science operations. The spacecraft is in a highly elliptical orbit around the Sun (the yellow dot at the center of the plot), reaching its aphelion during the course of the mission initially at Earth and eventually closing to the orbit of Venus. Parker Solar Probe will perform seven Venus flybys in order to more precisely set its trajectory toward the Sun; these flybys will slow the spacecraft down, instead of speeding it up, which is a more common use for planetary flybys.

**--S.SAI KRISHNA
Mech 4/4**

Guest Lectures

GUEST LECTURE-

A guest lecture by Mrs. Sharada Prabhakar outstanding Scientist, Scientist-G.

Mrs. Sharada Prabhakar outstanding Scientist, Scientist-G, Deputy Director, ASL, DRDO, Hyderabad delivered a lecture on “Advanced Materials and its Processing” on 03-08-2018 in Matrusri Engineering College organized by Department of Mechanical Engineering. In her lecture she covered manufacturing of metallic components, inspection and testing of materials and fasteners.



GUEST LECTURE-

Mr. Syed Abdul Gaffar (CEO, Managing Director) Founder, Promoter and Managing Director of KG Group, Hyderabad delivered a technical seminar on “Heating Ventilation & Air Conditioning [HVAC]” on 14th Sep, 2018 in Matrusri Engineering College organized by Department of Mechanical Engineering for B.E III/IV students. In his lecture he covered Introduction to HVAC, Basic Components, Air-Conditioning Equipment’s, Categories of Air Conditioning and Design of HVAC and so on.



SEMINAR-

 **Matrusri Engineering College**
Saidabad, Hyderabad.
(Sponsored by Matrusri Education Society)
Affiliated to OU & Approved by AICTE

In Association with
Allinnov Research and Development Pvt.Ltd
Presents a Seminar on
'Innovate, Invent and Patent'
On 21-07-2018 at 11.00AM (at AV Room- Old Block)
Organized by: Department of Mechanical Engineering



EVDD –Workshop

