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EVOLUTION OF AUTOMOBILE SECTOR

In recent times, the automobile industry in India has flourished like never. The cars we drive are being evolved from time to time. Comparing the modern-day cars with the cars that were present in the early 90's the difference can be seen. We have come a long way from unreliable and less efficient cars to more reliable and best efficient cars.

Thanks to the growing technology that resulted better engines, getting the best from smaller engines using turbo and superchargers. Even the design language of the car has been changed over years. The first car was powered by a gas engine, but now we have multiple sources (renewable sources like hydrogen powered vehicles and fossil fuels like petrol and diesel). And now it's drifting towards electricity.

Even the way a car looks has been evolved during years, in modern day cars design plays a crucial role in increasing performance of the car, even in the late 90's we have cars with typical body on frame chassis with less stability, but now monocoque chassis is being designed with better dynamic characteristics and load bearing capacity. The material selection to build the chassis and the design procedure has been improved so far as the safety depends upon the strength of the body shell.

Even the first car has been produced in 1901, turn signals weren't added to a car until 1939-that's even the first car with electric windows and air conditioning. This brings us to modern day cars with built-in Bluetooth, advanced safety systems, driving aids to ease you're driving and ability to park themselves. In this age cars come standard with features that were once a luxury. And driverless cars which once seemed like something out of science fiction film are close to being a reality. It's amazing to see how far cars have come.

With technology advancing it's more important than ever to keep up with on road driving techniques to keep those around you safe all times.





The first figure is the 1st car that was produced by DaimlerAG which was invented by Karl Benz, which runs on a gas engine which is located horizontally at the back side of the car producing 0.75 hp, the car in the second picture was the latest s-class from Mercedes Benz which is the part of Daimler AG, with at most safety features and comfort which runs on twin turbo charged v6 petrol engine producing 630 horsepower.

Research Projects in Progress:

- ♣ Ms.D.Swapna, Assistant Professor received 3 lakh worth UGC sponsored project on 'Flow forming behavior of extra drawn Al6061 under warm deep drawing'.
- → Dr.K.Ravindra, Professor and Head, received Rs 11 lakh worth for modernization of CAM lab under AICTE 'MODROBS' scheme.

Guest Lectures Delivered:

- Language Dr.S.Radhika delivered a guest lecture on 'Effective business communication skills' in DST three day sponsored 'Entrepreneurship Awareness Camp' organized by EMDC in RVR&JC College of Engineering, under the aegis of National Science Technology & Development Entrepreneurship Board (NSTEDB), Dept. of Science and Technology, Govt. of India, New Delhi on 28 Feb 2019.
- ♣ Dr.S.Radhika delivered a guest lecture on 'Business opportunity Identification, in a week DST sponsored "Entrepreneurship Development Program" conducted in Ramachandra College Engineering, Eluru under the aegis of National Science & Technology Development Entrepreneurship Board (NSTEDB), Dept. of Science and Technology, Govt. of India, New Delhi on 23 Feb 2019.

Guest Lectures Organized:

→ Dr.S. Radhika, Ms.D.Swapna organized a three day DST sponsored Entrepreneurship Awareness Camp (EAC) during Feb 28 to Mar 2, 2019 for all the branches of Pre-final students. A total of 110 students participated in the camp.

Workshop organized:

→ A One week Short term course on 'CAD using SOLID WORKS' was organized by Dr. K. Praveen Kumar, Dr. C. Tara Sasanka in association with NITTTR Chandigarh during 11-15 Mar. 2019.

Faculty Research Fellowship

→ Ms.K.Snehita, Assistant Professor participated in a six week summer faculty research fellowship programme (SFRF-2019) under continuing education programme from at IIT Delhi during 13 may 2019 to 21 June 2019.

Online Courses Completed

Dr.K.Praveen Kumar, Dr.G.Chaitanya, Dr. N. Govind Associate Professors, Dr. Reddy srinivasulu, Mr.G.KishoreChowdari, Mr.V.Tarachand, Mr.J.Rangaraya Chowdary,Mr.D.kondalrao, Mr.Md.Hasheer, Mr. Y.N.V.Sairam, Mr. K.Hariprasad, Mr.D.Bharat Prasanna,

- Mr.T.N.S.RamaKrishna Assistant Professors participated in AICTE approved faculty development programme (FDP101X) on Foundation program in ICT for education at IIT Bombay in Dec. 2018.
- Language Dr.K.Praveen Kumar, Dr. N. Govind Associate Professors Dr. Reddy srinivasulu, G.KishoreChowdari, V.Tarachand, D.Kondalrao, J.Rangaraya Chowdary, Md. Hasheer, Y.N. V. Sairam, K. Hariprasad, D.Bharat Prasanna Mr.T.N.S.RamaKrishna Assistant Professors participated in AICTE approved faculty development programme (FDP201X) on pedagogy for online and blended teaching learning process IIT Bombay in Dec. 2018.
- Prof.G.Srinivasarao, Dr.K.Balaprasad, Dr.C.Srinivas, Associate Professors, Ms.Sneha.H.Dhoria, Ms.K.Snehita Assistant Professors successfully completed the IUCEE-International Engineering Educator certification program in association with Indo Universal Collaboration for Educating engineers (IUCEE), during July 2018 to Jan. 2019.

Research Paper Publications:

- → D.Kondala Rao, Dr.K.Srinivas, Dr.C.TaraSasanka, Dr.D.Sameer Kumar, 'Study of Combined Effect of Inclination and Partial fins on Melting of Phase Change Material in A Rectangular Enclosure Using CFD', Journal of Modelling and Simulation of Materials, Vol.1, Issue 1, pp.30-38, 2018.
- → D.Kondala Rao, Dr.K.Srinivas, Ch.Devaraj, 'Ceramic tool condition monitoring in machining of Inconnel 718', International Journal of Scientific Research in Network Security and Communication, Vol.7, Issue 1,pp.1-9,Mar 2019.
- → Dr.G.Chaitanya, K.Siva koteswararao, 'Experimental study on surface roughness and dimensional accuracy of hole machining process on GFRP composites using abrasive water jet technique', Materials today proceedings, June 2019.

Failure is central to engineering.

Every single calculation that an engineer makes is a failure calculation. Successful engineering is all about understanding how things break or fail

- Henry Petroski

- □ Dr.G.Chaitanya, K.Siva koteswararao, □ Dr.B.Ravi Shankar, 'Optimization of Tool wear and Surface Roughness in Turning □ Titanium (Ti-6Al-4V) Alloy; NFMQCF □ Technique
- ☐ I-Managers Journal on Mechanical Engineering, Vol.9, Issue 2, Feb. 2019.

K.Sivakoteswararao,

Engineer's Couple fights

3 = 1

Dr.G.Chaitanya, 'Multi-Objective Optimization of a Process Parameter in of Turning Titanium Alloy Using GRA, PCA **RSM** and Method'. i-Managers Journal on Material Science, Vol.6, Issue 4, 2019.

Siva koteswara

- rao Katta,
 Dr.G.Chaitanya, Dr. B Ravi Shankar, 'A
 Novel Approach of Turning on Titanium (Ti6AL-4V) Alloy using NFGMT Coupled with
 GRA, PCA, and RSM', i-Manager's Journal
 on Mechanical Engineering, Vol. 9,
 Issue.1,pp:13-21, Feb 2019.
- → Dr.Reddy Sreenivasulu, K.Kamal Charan, R.Ramanjaneyulu, L.Murali Krishna, L.Sai Krishna, L.Jagadeesh, 'Parametric Design and Analysis of Four Wheeled Car Bumper Using CATIA &ANSYS', International Journal of Recent Engineering Research and Development (IJRERD),Vol. 04,Issue 03, pp: 64-68,Mar 2019.
- 🖶 Siva Sankara Raju, Dr.G.Srinivasa Rao, and S.B. Venkata Siva, 'Experimental studies of Mechanical and Tribological properties on Composite reinforced Aluminium with Shell Coconut Ash Particulates". International Journal of Materials Engineering Innovation (IJMATEI), 9(2),pp. no: 140-157.
- R Siva Sankara Raju, M.K.Panigrahi, R.I.Ganguly, Dr.G.Srinivasa Rao, 'Optimization of Tribological behaviour on Al-Coconut Shell Ash Composite at Elevated Temperature', IOP Conf.Series: Materials Science and Engg.,314,DOI:10.1088/1757899X/314/1/012009.
- ↓ Kiran Kumar Sureddy, Dr.N.Govind, 'Experimental Investigations on a Diesel Engine Fueled with Bio diesel Blends and

- Tetra Hydrofuran as an Additive', Journal of Advanced Research in Dynamical & Control Systems, Vol. 10, 09-Special Issue.
- ★ Kiran Kumar Sureddy, Dr.N.Govind, 'Preheating of Biodiesel for the Improvement of the Performance Characteristics of Di Engine', American Journal of Mechanical Engineering, Vol. 6, No.2, pp.61-65.

🖶 Nagarjuna varma, Dr.N.Govind, 'Numerical Simulation of Heat Transfer in Liquid Lithium Flow through Elliptical Cylinder', Journal of Mechanical Engineering for Sustainable Development: Stateof-the-Art Research, Jan. 2019.

★ K.Arunasanthi, Dr.C.Srinivas,'Comparative Study of

Light Weight Materials in Automobiles, Journal of Advanced Research in Dynamical & Control Systems, Vol.10, issue 13.

- → M.BalajiNaiak, Dr.C.Srinivas, 'Performance Approach On Compact Heat Exchanger Using Different Fluid Blend Mixtures variated at Different Temperature Levels Journal of Advanced Research in Dynamical & Control Systems, Vol. 10, 13-Special Issue.
- → Sneha.H.Dhoria, E.Manoj Kumar, I.V.S.Yeswanth, Lakshmi Jayanti, 'CFD Analysis on Concentric Tube Heat Exchanger in Parallel and Counter Flow Direction Journal of Engineering Research and Application, ISSN: 2248-9622,Vol. 8, Issue 6,pp.20-25.
- → Hari Prasadarao P, Dr.V.Chittaranjan Das, H Ravisankar, 'Fabrication and Effect of Morphology and Mechanical Properties of ABS/HDPE/PP Thermoplastic Nanoclay Composites, Journal of Advanced Research in Dynamical & Control Systems, Vol. 10, 10 Special Issue.
- → Dr.N.V.V.S.Sudheer, 'Computational fluid dynamics analysis of pressure effects in a hot cascade tyoeranque–hilsch vortex tube', International Journal of Mechanical and Production Engineering Research and Design, ISSN 2249-6890,pp.135-142.
- → Dr.N.V.V.S.Sudheer, R.Madhu Kumar, 'Computational fluid dynamics study on the effects of L/D Ration in a 2 stage hot cascade

- vortex tube', International Journal of Recent Technology Engineering, Vol. 7, ISSN: 2277-3878, pp. 121-124, Mar 2019.
- ♣ P.Anusha, Dr.N.V.V.S.Sudheer, 'Effect of insulations on COP in Vapor compression Refrigeration System', International Journal of Mechanical Engineering and Technology, Vol. 10, Issue 1, pp. 1201-1208, Jan. 2019.
- ♣ Dr.N.V.V.S.Sudheer, 'Experimental of optimum refrigerant determination insulation combination in a VCR system using taguchi method, International Journal of Mechanical and Production Engineering Research and Design, ISSN 6890,pp.439-452.
- M.Vijaya, Dr.K.Srinivas, Investigation on Mechanical Properties of AA6351/SiC and AA6351/SiC/Gr Composites Fabricated by Stir Casting Method', International Journal of Recent Technology and Engineering', ISSN: 2277-3878, Vol.-8, Issue-1, May 2019.
- ♣ Sneha.H.Dhoria, Dr.V.Durga Prasada Rao, Dr.K.Venkata Subbaiah, 'Assessment of Mechanical and Tribological properties of Aluminium Metal matrix composites: A International Journal Review'.

Multidisciplinary, Vol.4, Issue 05, pp.1049-1056, ISSN: 2455-3085, May 2019.

🖶 Md.Hasheer shaik, Dr.K.Srinivas, 'Performance of analysis alternative low **GWP** refrigerant mixtures as direct substitute of HFC-134a in Domestic Refrigerator using LSHX', International Journal of Innovative Technology and **Exploring** Engineering

(IJITEE),

Vol.8, Issue-8, pp.1027-1031, June 2019. Dr.D.V.V.KrishnaPrasad, G.S. Krishna Chaitanya, R.Srinivasa Raju, 'Simultaneous Effects Thermal Diffusion and Diffusion Thermo on MHD Non-Newtonian Casson Fluid Flow along a Vertically Inclined Plate

2278-3075

(Online),

- in Presence of Free Convection and Joules Dissipation', ARPN Journal of Engineering and Applied Science, Vol.14, No:10, ISSN 1819-6608,pp:1876-1897,May 2019.
- 🖶 SivasankaraRaju, Dr.G.Srinivasa Rao, Wear behavioral Chitrasen Samantra, assessment of Al-CSAp-MMCs using greyfuzzy approach', Measurement 140,pp.254-268, 2019.
- ♣ Dr.D.V.V.Krishna Prasad, G.S.Krishna Chaitanya, R. SrinivasaRaju, 'Double Diffusive Effects on Mixed Convection Casson Fluid Flow Past a Wavy Inclined Plate in Presence of Darcian Porous Medium', Results in Engineering.
- T.V.S.R.K Dr.K.Srinivas, Prasad, Dr.C.Srinivas, 'A Case Study of supply chain with third-party logistics and a centralized supply chain for a domestic pump supply chain, Journal of Advanced Research in Dynamical & Dynamical & Control Systems (JARDS), ISSN 1943023X, Vol.11 ,4-Special Issue,pp:2167 -2172, 2019.
- Dr.C.Srinivas, 📥 Jush Kumar Siddani, N.Nagabhushana Ramesh, **Topological** Surface of H.S.S and Titanium31 using Micro Electro Discharge Machining', International Journal of Recent Technology

Engineering, and ISSN:2277-3878, Vol. 8, Issue-1S4, pp:819-821, June 2019.

Raffi Mohammed, Dr.B.Ramgopal Reddy, Aluri Manoj, **'Fabrication** Erosion wear Response of E-Glass-Epoxy based Hybrid Composites filled CFA/CFACP', with International Journal of Engineering

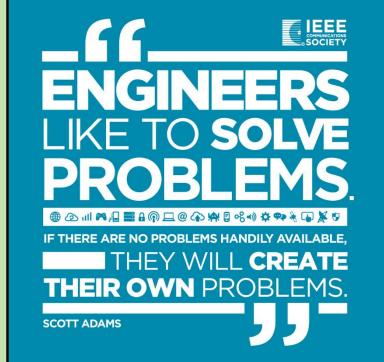
Advanced Technology, ISSN: 2249 - 8958, Vol.8 Issue-3, Feb 2019.

and

┿D.Swapna, Dr.Ch.Srinivasa Rao,

Dr. D. Sameer Kumar, Dr.S.Radhika, 'AHP and TOPSIS based selection of aluminium alloy for automobile panels', Journal of Mechanical and Energy Engineering, Vol. 3(43), No.1,pp.43-50, 2019.

🖶 G. Harsha, J.P.Karthik, Dr.C.Tarasasanka, 'Optimization of Multiple performance



ISSN:

characteristics of friction stir welding joint with Grey relational analysis', International Journal of Research and Analytical Reviews, pp.544-551, Vol.6, Issue 2, June 2019.

Paper Presentations in Conferences

Dr.V.RamakoteswaraRao, Mr.J.RangarayaChowdary, presented Gudapati a paper on 'Fabrication and investigation Mechanical properties $(AA7075/Cr_3C_2)$ MMC' in International Conference Recent on Advances in Materials, Manufacturing & Energy Systems(ICRAMMES-2019), organized by Dept. of

Mr.E.Rama Krishna Reddy, Mr.K.Surendra Babu. Dr.V.Dhanaraju, Dr.K.Bala Prasad, presented a paper 'Mitigation of NOX emissions with application

Engineering College during

ME,VR

3-4 Jan 2019.

of exhaust gas recirculation with diesel engine fuelled with diesel-corn seed oil biodiesel blend', in the International Conference on Recent Advances Materials, Manufacturing & Energy Systems(ICRAMMES-2019), organized Dept. of ME, VR Siddhartha Engineering College during 3-4 Jan 2019.

Siddhartha

👆 Ms.M.Vijaya, Dr.K.Srinivas presented a paper on Investigation on Mechanical AA6351/SIC of AA6351/SIC/GR Composites fabricated by Stir Casting Method', in the International Conference Advances on Recent Energy Materials, Manufacturing & Systems(ICRAMMES-2019), organized Dept. of ME,VR Siddhartha Engineering College during 3-4 Jan 2019.

Reddy, Dr.B.Ramgopal Dr.K.Ramji presented a paper on 'Modeling and Evaluation of Effective Elastic Properties of Carbon Nanotubes Reinforced Carbon Fiber/Epoxy Multiscale Composites' in the Sixth International Conference on Recent Advances in Composite Materials(ICRACMorganized by IIT(BHU), Varanasi, 2019) during 25-28 Feb.2019.

Dr.G.Srinivasarao, M.Usha, presented a paper on 'Modelling & Optimisation of parameters for Surface Roughness in Turning Using Herbal based Nano Cutting Fluid with MQL' in the National Conference on Multidisciplinary Design, Analysis, and Optimization, organized by the Dept. of ME, MSRUAS, Bengaluru during 22- 23 Mar 2019.

🖶 Ms.Sneha.H.Dhoria, Dr.V.Durga Prasada rao, Dr. K. Venkata Subbaiah presented a

'Mechanical and paper on wear behavior of 6351 Al/Gr/Sic composites fabricated by Squeeze casting' International the Conference (ICAST) conducted by Dept. of ME, SRKR College of Engineering, Bhimavaram during 28-29 Mar 2019.

Dr.G.Srinivasarao, Mr.P.Gopalakrishnaiah, 'Modeling and Optimization of Parameters Design of Experiments', in the International Conference on Manufacturing (ICCMM 2019), by ME, IIT Guwahati ,during 8-9

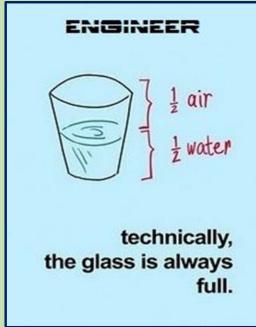
📥 Ms.P.Bharathi, WEDM Computational Methods organized

2019.

- 🖶 Mr.Siva Sankara Raju,Mr.Venkata siva, Dr.G.Srinivasarao, 'Quantitative analysis of tribological performance on AL-CSA composites using orthogonal array', in the First International Conference on Applied Mechanical Engineering Research (ICAMER 2019), NIT Warangal during 2-4 May 2019.
- Dr.V.Ramakoteswara Rao Mr.J.Rangaraya Chowdary presented a paper on 'Review on recent developments in Mechanical and Tribological Properties of AMMCs,' in the Fourth International Conference on Nanotechnology for better Technological advancements polymer composites', 6-7 April 2019.

Conferences/ Workshops Attended:

- LangopalReddy, Associate Professor, Ms.K.Snehita, Assistant Professor attended QIP short term course on 'Analysis of Modern Manufacturing Processes', conducted by IIT Bombay during 7-11 Jan 2019.
- Prof.K.Ravindra attended awareness workshop on 'Smart India Hackathon 2019' conducted by SRKR College of Engineering, Bhimavaram on 10 Jan 2019.
- Mr.Y.N.V.Sairam, Mr.K.Hariprasad, Assistant Professors attended a AICTE sponsored Short term course on 'Advanced Mechanical Micromachining techniques for



Mr.S.P.Kumar

- miniaturization of products and processes', organized by Dept. of ME at IIT Madras during 14-19 Jan 2019.
- → Prof.K.Ravindra, Prof. G.Srinivasarao participated in one week FDP on 'Recent advances in MMC and high entropy alloys', organized by Dept. of ME, Acharya Nagarjuna University during 21-25 Jan 2019.
- ➡ Dr.K.Balaprasad Associate Professor, Md.Hasheer Sk Assistant Professor attended a Short term course on 'Advanced Process Control and Instrumentation system', organized by NITTR Kolkata during 07-11 Jan 2019.
- → Ms.K.Lakshmi Chaitanya, Assistant Professor participated in three day faculty development programme on 'Current trends in Aerospace', organized by Andhra Pradesh State Skill Development Corporation (APSSDC), in association with Dassault systems and Acharya Nagarjuna University during 4-6 Feb 2019.
- → Dr.S.Radhika, Associate Professor attended One day workshop on, 'Rural Immersion and Community Engagement in the NSS Activities', at Acharya Nagarjuna University, Namburon on 26 Mar 2019.
- Dr.S.Radhika, Dr.V.Ramakoteswararao, Associate Professor Mr.G.Kishore Chowdary, Mr.Ch.Devaraj, Ms.K.Lakshmi Chaitanya, Ms.M.Vijaya, Mr.J.Rangaraya Chowdary, Mr.J.P.Karthik. Sneha.H.Dhoria, K.Snehita. Ms. Mr.Y.N.V.Sairam Assistant Professors participated in Workshop a One week Short term course on 'CAD using SOLID WORKS', organized by NITTTR Chandigarh during 11-15 Mar, 2019.
- → Mr.J.RangaRaya Chowdary Assistant Professor, Dr.V.Ramakoteswararao Associate Professor attended a QIP short term course on Technological advancement of Polymer Nanocomposites conducted by Dept. of ME and interdisciplinary Department of materials science at IIT Kanpur, during 4-8 april 2019.
- ♣ Mr.J.P.Karthik, Ms.M.Vijaya Assistant Professors attended a two day workshop on 'Additive manufacturing using 3D experience' organized at VVIT Nambur during 6-7 may 2019.
 - ♣ Dr.C.Tara Sasanka Assistant Professor participated 'Applied Robotics Control lab
 − FDP' at Aachen, Germany organized by German Centre for advance Engineering and management studies and APS GmbH

- European Centre for Mechatronics during 16 -24 May 2019.
- → Prof. K.Srinivas participated in three Day Faculty Development programme on 'Student Induction' organized by Chadalawada Ramanamma Engineering College, Tirupati offered by AICTE, South Central regional office, during 10-12 June 2019.
- Prof.K.Ravindra Prof.K.Srinivas, Prof.D.V.V.Krishna Prasad, Prof. V.Chittaranjan Das, Prof.G.Srinivasarao, Dr.N.V.V.S.Sudheer, Dr.S.Radhika Associate Professors attended ICT based one-week Short Term Course on 'NBA Accreditation' organized by NITTTR Kolkata, during 17-21 June 2019.

INDUSTRIAL TOUR

- The students of II year went to visit Sangam diary and Sri Lakshmi Ganapathi Industries during 6-8 march 2019.
- The students of III year, second semester, went to visit various industries at Srikakulam, Visakhaptnam, Rajamundry and Kakinada for the better understanding of Mechanical concepts taught in the classroom.
- Students of IV year(A,B,C sections)visited Dr. Narla tata rao Thermal power station, Kondapally to get an practical exposure on Thermal power plants from 18-20 march 2019.

Academic Results

22-01-2019 29-01-2019	BAJA 2019, E-BAJA, Natrax Indore.
22-02-2019 24-02-2019	Formula Imperial electrical vehicle Champion of champions-2019
22-02-2019 24-02-2019	Gokart
22-02-2019 24-02-2019	ATV, electrical
06-02-2019 10-02-2019	Formula imperial -2019, BIC Noida. electrical vehicle



When a Mechanical Engineer gift a Ring

PhD Registration

Mr.J.RangarayaChowdary,Mr.J.P.Karthik,Mr.Y.N.V.Sairam,Mr.K.Hariprasad,

Mr.D.Bharat Prasanna Assistant Professors registered for Ph.D at Annamalai University.

PhD awarded

→ Mr.Sameer kumar, Assistant Professor was awarded Ph.D for his thesis on 'Development of Nickel coated Alumina reinforced AZ91E Magnesium composites for alloy wheel Applications by the Andhra University in March 2019.

SAE Activities

22-02-2019 24-02-2019	Formula Imperial electrical vehicle Champion of champions-2019
22-02-2019 24-02-2019	Gokart
22-02-2019 24-02-2019	ATV, electrical 2019,
06-02-2019 10-02-2019	Formula imperial -2019, BIC Noida. electrical vehicle
22-01-2019 29-01-2019	BAJA 2019, E-BAJA, Natrax Indore.

















