



**M.V.S.R Engineering College**  
**Department Of Mechanical Engineering**  
**Annual Report (Academic Year 2014-2015)**

**Head of the Department:** Dr.M.Madhavi

**Principal:** Dr.P.A.Sastry

The Department of Mechanical Engineering was started in 1981, the year of establishment of college. Currently the department offers two UG programmes B.E (Mechanical) & B.E (Automobile) with an intake of 120 and 60 and one PG programme M.E (CAD/CAM) with 18 intake.

Faculty Strength: Professors-	05
Associate Professors-	07
Assistant Professors-	24
Supporting Staff-	28
Teaching Assistant	02

**Student Strength:**

Class	Strength
BE II Auto	61
BE II Mech-1	72
BE II Mech-2	75
BE III Auto	68
BE III Mech-1	66
BE IIIMech-2	66
BE IV Auto	56
BE IV Mech-1	70
BE IV Mech-2	66
M.E- CAD/CAM	12
<b>TOTAL</b>	<b>612</b>

**Departmental Activities:**

**1. National conference on recent innovations in Mechanical Engineering (RIME-2014):**

The Department in association with Institution of Engineers India has organized a Two-day National conference on “*Recent Innovations in Mechanical Engineering (RIME 2014)*” during November 21-22, 2014 in the college. Keynote speakers are from organizations like DRDO, BDL etc. There were a total of 33 papers presented covering various fields of mechanical engineering.



2. **Department Associations:**The Department is associated with SAE, ISTE, FIAAP, Renewal Energy Club and IEI.


3. **Guest Lectures Delivered by Department Faculty:**

1. Mr. G.Srinivas Sharma delivered a lecture on “Thermo Chemical Conversion of Biomass” in the conference on “Advances in Thermal Engineering” (ATE-2014) held at CBIT on 24<sup>th</sup> November, 2014.
2. Mr. G.Srinivas Sharma delivered lecture on
  - a. “Effective Skills for better Placements Opportunities” at Mechanical Engineering Department, MVSREC.
  - b. “Effective Teaching Methods” for new Staff members of the department, MVSREC.
3. Dr. S.Gajanana chaired a technical session of XIII International conference on Mechanical & Production Engineering organized by WASET, Kuala Lumpur, Malaysia on 13<sup>th</sup> to 15<sup>th</sup> February, 2015.
4. Dr. S.Gajanana delivered lecture on “Course handling and teaching skills” to the new staff members at MVSREC.

5. **Guest Lectures Organized by The Department from August 2013 to till Date:**

1. Design of Mechanisms: Issues and Opportunities by Mr. S. NagendraBabu, Sc D, DRDL, Hyderabad on 26-08-2014.
2. Design of Mechanical Systems for Aerospace Applications by Mr. JagadisanKrishnamoorthy (Project Director), Sc G, RCI, Hyderabad on 28-10-2014.
3. Moving beyond Finite Elements: Towards Meshlessgeometric Approach by Dr. AmrithamRajagopal, Asst. Prof., CED, IITH on 09-01-2015.



6. **Notable Developments in the Department:**


 <p><b>Dr. G.Venkata Subbiah</b> Professor MED</p>	<p>Dr. G. Venkata Subbaiah, Professor was elected as the National Executive Council Member of ISTE, New Delhi for the term Jan 2015-Dec 2017.</p>
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6. Six faculty members enrolled as Fellow of Institution of Engineers India (FIE) and five faculty members as Member of Institution of Engineers India (MIE).


7. Dr. M.Madhavi (Head), Dr. S.Gajanana & Dr. G.Venkata Subbaiah (Professor, Dept of Mechanical Engineering) has been recognized as Ph.D Supervisor in Faculty of Engineering, Osmania University.

## 8. Research Activities:


 <p>Dr.M.Madhavi Professor&amp; Head MED</p>	<p>Dr.M.Madhavi and Mr.G.Prakasham successfully completed consultancy project of worth Rs 2.0 lakh for <i>ANSP DRDO</i> on “<i>Investigation of Composite Structures</i>” and submitted report to DRDO in December 2014.</p>	 <p>Mr.G.Prakasham Asst. Professor MED</p>
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 <p>Dr.S.Gajanana Professor MED</p>	<p>Dr.S.Gajanana, has recently got approval for a UGC Research project entitled “<i>Studies on mechanical properties and machinability of Aluminum alloy (6061) series</i>”WorthRs 4.8 lakh, for the year 2014-15.</p>
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## 9. Faculty Awarded with Ph.D Degree during Academic Year 2014-2015

 <p>Dr.J.Kandasamy Ph.D(Mechanical Engineering )</p>	<p><b>Thesis Title:</b> Experimental Evaluation and Post Process Characterization of Friction Stir Welded Dissimilar Alloys <b>University:</b> Jawaharlal Nehru Technological University Hyderabad, Kukatpally, Hyderabad, May 2014. Dr. J.Kandasamy was promoted as Associate Professor through OU selection committee in August 2014.</p>
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## 10. Best Teacher award

 <p>Mr. G.S Sharma Assoc. Professor MED</p>	<p>Mr. G.Srinivas Sharma awarded with “<i>Cognizant best teacher award</i>” for the academic year 2015 He joined department in the year 1997 and is specialized in Heat power engineering and his areas of interest are Combustion, Heat transfer, Renewable energy and New product development. He has published over 10 papers in National and International journals</p>
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### 11. Seminars promote by the Faculty in Academic Year 2015:

To create good academic/R&D ambience in the department, seminars by the faculty are organized on every working Saturdays

Date	Faculty	Topic
4-4-2015	Dr.M.Madhavi	Dynamic Characteristics of a Mono Composite Leaf Spring.
4-4-2015	L. Sunil Kumar	High Speed Machining.
7-3-2015	K.Karthik Rajashekar	Numerical and Experimental Buckling of Advanced Fiber Composite Cylinders under Axial Compression.
7-3-2015	M. Bhargav Chandra	Static Electricity.
7-3-2015	T.Murali Mohan raju	A Concept of Turnover Mechanism For Multi Level Parking.
28-2-2015	A.Chandrakanth	Optimization of Cutting tool Geometry for Titanium alloy by CAE approach.
28-2-2015	Dr.S.Gajanana	Forecasted Inflation Based Block Replacement Model Using Stochastic Process.
28-2-2015	A. Syam Prasad	Static and Dynamic Characteristics Using Fast Fourier Transforms of Mono Composite Leaf Spring Of Variable Thickness With Integrated Metallic Eye Joints.

### 12. . Papers Published by the Faculty during Academic Year (2014-2015):

Faculty	International (Journal)	National (Journal)	International (Conference)	National (Conference)
Dr. M. Madhavi	-	3	-	2
Dr. S. Gajanana	4	-	-	-
Dr. G. VenkataSubbaiah	2	-	-	1
Dr. J. Kandasamy	1	1	3	2
G. Srinivas Sharma	3	-	-	1
B. Ravi Kumar	2	-	-	-
B.K. Mohan	1	-	-	-
G.Srinivas Rao	-	-	-	1
S.V Narasimha Rao	-	-	-	1
K.V.R.K Subrahmanyam	-	-	-	1
A.Chandrakanth	1	-	-	-
A.Syam Prasad	-	-	-	1
K.Karthik Rajashekar	-	-	-	1
N.Yogi Manash Reddy	-	-	-	1
M. Bhargav Chandra	-	-	-	1
T.Murali MohanRaju	1	-	-	1

### 13. Research Work:List of faculty pursuing Ph.D

S.NO	Faculty Name& Designation	Research Topic	Registered University
1.	Mr.D.Siva Kumar Assoc Prof	Experimental Study of Tool Geometry and Optimisation of Process Parameters in Friction Stir Welding	JNTUH
2.	Mr.K.V.R.K Subrahmanyam Assoc Prof	Optimisation of Processing Parameters for Light Weight Castable Alloy Shapes Using Semisolid Forging Root	JNTUH
3.	Mr.S.V.Narasimha Rao Assoc Prof	Experimental Investigations And Charecterisation of Semi Solid Processed Aluminum Alloys	JNTUH
4.	Mr.G.Srinivasa Sharma Assoc Prof	Experimental Investigations of Biomass Integrated Gasification/Gas Turbine Technology for Power Generation	O.U
5.	Mr.B.Ravi Kumar Asst Prof	Some Studies on Metal Flow Forming: Analysis Modeling and Optimisation of Process Parameters	JNTUH
6.	Mr.S.Srinivas Asst Prof	Gas Pressure Super Plastic Forming and Modeling of Light Alloys	O.U
7.	Mr.G.Prakasham Asst Prof	Effective Simulation of Welded Joint by Using Finite Element Technique	O.U
8.	Mr.T.Murali Mohan Raju Asst Prof	Design and Development of High Intensity Impact Simulation Test Facility	O.U

### 12.5K Run for Road Safety:

The Automobile engineering department of MVSR Engineering College organized '5K run for road safety" on Necklace road on 2<sup>nd</sup> Jan 2015, as a part of Road safety Week observed during 2-8 January 2015.

About 1500 students from MVSR Engineering College and Matrusri Engineering College participated in the 5K Run. First, Second and Third prizes were given in the categories of student-boys, student-girls, staff-gents, staff-women and outsiders. The event was a great success.





## STUDENT ACTIVITIES (Academic Year 2014-2015)

1. Workshop Organized by the Department:
  - Welding Techniques – Hands on Experience



A one week workshop on “*Welding Techniques – Hands on Experience*” is organized during 21st to 30th August 2014 for the Mechanical and Automobile Engineering students. As many as 38 students participated in the week long training programme. Students are trained in both theory and practical orientations towards welding of different cross section of dissimilar materials. This training programme facilitated the students in executing their fabrication works viz., SAE BAJA, EFFICYCLE, ECOKART, GOKART and Final year assembly projects.

**Programme Coordinator:** Dr. J.Kandasamy

- @Labs (Automation Labs): The main motto of establishing this lab is to create awareness and train them in the area of Automation at different levels giving them all necessary inputs.

Contents of program:

1. Introduction to concepts of Mechanization & Automation
2. Basic concepts of Automation
3. Low cost automation, Hybrid Automation, High-End Automation
4. Low Cost Automation

**Programme Coordinator:**Mr. Murali Mohan Raju, Mrs J. Sita Priyadarshini

- Quadcopter Workshop: Quadcopter (from Quad “four” and Copter “helicopter”) is an aerial robot combining a simple propeller mechanism with powerful electronics for limitless real-world applications. It is an embedded system comprising of microcontrollers, sensors, flight gear and other integrated components. This workshop helps students to develop a Quadcopter project from scratch while understanding the various engineering concepts in making a working unmanned Aerial Vehicle. Developing a Quadcopter provides the right kind of hands-on application that an Engineering student needs!

**Programme Coordinator:**Mr. Murali Mohan Raju, Mr K. Karthik Rajashekar

- About 20 students from B.E 3/4(Mech& Auto) have taken internships from organizations like BHEL, NFC, DRDO, NTPC.
- As a part of curriculum students of B.E 3/4(Mech& Auto) had Industrial visit to Vizag Steel Plant, NTPC, Kadevi Industries.

#### 4. Sports Activities:

- G. Srighana of B.E. 2/4 (Mech.) won Silver & Gold medals in National level skating in 2014, organized by Roller Skating Federation of India (RSFI).
- G. Srighana of B.E. 2/4 (Mech.) won Silver & Bronze medals in National level skating in 2015, organized by Roller Skating Federation of India (RSFI).
- Mr.V.SumanRaju (Assistant Professor) won First prize in Carroms tournament held at CBIT, HYD.



#### 5. MESA (Mechanical Engineering Students Association):

MESA is a students' body run and controlled by the students of the Department of Mechanical of MVSREC with the guidance of the faculty. This organization conducts various events to prepare them for future work environment.

MESA divides its functions into five wings.

- Personality Development wing
- Sports wing
- Art and cultural wing
- Social Networking and publicity wing
- Event Organization wing.



#### 6. Auto Cognizance:

Auto cognizance is a technical fest organized by the Mechanical department for the auto freaks. It had wide collection of events which geared up the enthusiasm among the students.

Major events of Auto Cognizance 2K15 are :

- Auto Expo.
- Under the Hood.
- Troubleshooting.
- Model Presentations



## 7. Athlema:

Athlema, MVSREC is an intercollegiate sports meet conducted by MVSR Engineering College every year.

The Following events are conducted:

- Basketball.
- Cricket.
- Football.
- Volleyball.
- Throwball.
- Chess.
- Carroms.
- Table tennis.



## 8. Academic Achievements:

### OU Ranks – Automobile Engineering

Name of the student	Roll No	OU Rank
S.N Mahathi	2451-10-769-014	I
M. Krishna	2451-10-769-003	II
C Keerthi Raj	2451-10-769-018	III

### Class Toppers

Year	Name of the student	Roll No	Marks
B.E I	G. Krishna Reddy	2451-13-769-029	1041
B.E II	K. Ajay Kumar Reddy	2451-12-769-002	1295
B.E III	A. Preethi	2451-11-769-020	1250
B.E IV	S.N Mahathi	2451-10-769-014	4392

### OU Ranks –Mechanical Engineering

Name of the student	Roll No	OU Rank
E. Anusha	2451-10-736-036	IV

### Class Toppers

Year	Name of the student	Roll No	Marks
B.E I	A. Naga Sravya Lakshmi	2451-13-736-076	1131
B.E II	G. Samhitha	2451-12-736-085	1349
B.E III	M. Malla Reddy	2451-11-736-074	1276
B.E IV	E. Anusha	2451-10-736-036	4814



9. Placement for the Academic year (2014-2015):

S.No	Firm name	Date of visit	Students selected	
			AUT	MEC
1.	Cognizant	12th & 13th Sep 2014	5	15
2.	Wipro	19th & 20th Sep 2014	1	11
3.	Infosys	6 & 7th Oct 2014	7	21
4.	Capgemini	10 & 11th Oct 2014	---	9
5.	Intergraph ( Hexagon)	14th Oct, 2014	---	2
6.	Amazon	13th Nov 2014	2	2
7.	CYIENT (Infotech)	2nd Dec 2014	---	5
<b>Total</b>			<b>15</b>	<b>65</b>

## In-house fabrication projects during academic year 2014-2015

1. Development of Torison Rig-High Torque and Low Speed Applications



2. Design, Analysis and Fabrication of Composite Disc Brake



3. Design and Fabrication of IC Engine Test Rig and Performance Evaluation Of Petrol Ethanol Blends





#### 4. Design and Fabrication of Hybrid Bike



#### 5. Development of Shaft Driven Bicycle



#### 6. Design, Analysis and Fabrication of Monowheel





## 7. Design and Fabrication of Electrical Personal Transportation Vehicle



## 8. Design and Fabrication of Domestic Pulverizer for Bio-Degradable Waste



## 9. Design and Fabrication of Hybrid Car



10. Design and fabrication of downdraft gasifier.



11. Design and fabrication of solar water distillation plant.





## Student Projects: National Level Competitions

Head of the Department: Dr.M.Madhavi

Principal: Dr.P.A.Sastry

### EFFICYCLE-2014



**Team Name:**Astra

#### **Technical Details:**

“EFFI-CYCLE” derived from Efficient-Cycle promotes the objective of providing opportunity to the students to conceive, design and fabricate a three wheel configuration vehicle powered by human-electric hybrid power and capable of seating two passengers catering to the day to day mobility needs. The vehicle must be aerodynamic, engineered for performance & safe and ergonomically designed. The objective is to promote innovation and generate consciousness amongst young engineers towards environment friendly mobility solution. The vehicle should be capable to be driven simultaneously as well as alternatively by two drivers and also by electric drive.

#### **Cost of Vehicle:**

The project is estimated to cost 60,000/-INR.

**College Sponsored Amount:**50,000/-INR.

#### **Event Organized By:**

University of Engineering Chandigarh &SAE India Northern Section.

**Name of the Event:** SAE NIS EFFICYCLE

**Date of Participation:**10<sup>th</sup> October 2014

#### **Ranking Statistics:**

Position in Dynamic Round: 45 out of 86 teams

#### **Faculty Advisors:**

Mr. M. Ravi Kumar (Assistant Prof. MED)

Mr. Pandarinath Mongolla (Assistant Prof. MED)

**Team Members:**B.E (3/4, 4/4) Mech & Auto Students

Nikhil.K, Sirjan Singh, Karthik Sharma, Nagraj, SawanUpadhyay, Solomon Raj, Ch. Rajesh, Dheeraj, D. Madhuri, Swathi, Sandeep Reddy

## GOKART 2014



**Team Name:** Trail Blazers

**Technical Details:** The team conceives a vision, designs and fabricates a GoKart propelled by a 125cc petrol engine according to the rules set by the event organising committee. The GoKart boasts a distinct and an aesthetically pleasing aerodynamic chassis frame backed up with an efficient braking and steering system. The kart can touch maximum speed of 90kmph with such an ease.

**Features of the Kart:** The kart has an adjustable steering mechanism in conjunction with self-straightening effect of the steering wheel. Another innovative approach was to incorporate clutch lever to the transmission gear rod which enables the driver to control clutching and transmission at the same time. Dual kill switches have been added, one is used by driver and other gets activated in case of brake failure.

**Cost of Vehicle:**

The project is estimated to cost 1.2 Lakh

**Event Organized By:**

The event venue – Kari Motor Race Track, Coimbatore, Tamil Nadu

The event organising body-ISIE (Indian Society of Innovative Engineers)

**Ranking Statistics:**

At the event the team cleared all the successive dynamic rounds at its very first attempt itself successfully.

Team Trail blazers is ranked 14th all over India and stands first all over Telangana-Andhra region.

**Faculty Advisors-**

Dr.G. Venkata Subbaiah (Associate Prof. MED)

Mr.A. Gnan Reddy (Assistant Prof. MED)

**Team:** B.E (3/4)Mech & Auto Students

Amal Ganesh, P Vinay Raj, Kishore Manda, PoojaYammanur, Chandrababu Janega, Sudhachandra Masna, Vinay Raj, G VamshiBhargav, Karanja Akhil, K Joseph Daniel, Joshi Vishwadeep, Akash Ramesh Chukabotlawar, PraneethTagaram, Rohit Raman Srivastav, Zubair Mohammed, G Vinod Kumar, T Nagendra Babu, M Harish Kumar, J Lokesh, Vijaya Ram Prasad, Srikanth Reddy, Rajasekhar Reddy B, P Rajinikanth, Nithin G Thomas

## SOLARKART 2015



**Team Name:** Suryachakra

**Event Details:** ISIE-Electric solar vehicle championship is Asia's largest solar championship, it aims to build student's interest in Renewable source of energy. It focuses to develop interest among the engineering student towards alternative power sources, which are the future of Automobiles.

**Cost of Vehicle:**

The Total cost of the vehicle is about INR 89,623/-

**Event Organized By:** Imperial Society of Innovative Engineers (ISIE)

**Name of the Event:** Electric Solar Vehicle Championship (ESVC)

**Date of Participation:** 16-03-2015 to 19-03-2015

**Ranking Statistics:** Rank in Virtual: 24th

Rank in Dynamic: All India rank - 5<sup>th</sup>, South India rank - 1<sup>st</sup>

**Faculty Advisors:**

Mr. G. Srinivas Sharma (Associate Prof. MED)

Dr.D.Venumadhava Chary (HOD EEE Dept)

**Team:** B.E (3/4) Mech & EEE Students

T.Karthik Sharma, R.Sujith Kumar Reddy, J.Saritha, A.Nikitha, E.Hemani, V.Vaishnavi, K.Keerthana, Lohith, T.Yeshwanth, V.B.Mounika, K.Akhil Kumar, T.Sai Ram, R.Prashanth, M.Dheeraj, A.G.RupaSagari, T.Bharadwaj, M.V.Sailesh, K.HariBabu



## ECOKART 2015



**Team Name:** Sentinel

**Event Details:**

EcoKart (2015) is an initiative of Viridescent strongly supported by SAE Collegiate Club. The Competition is to Design and Fabricate a single passenger kart which is operated by a Motor AC or DC, where Source of running the motor is a battery. The Main Aim of the competition is to reduce the usage of organic fuel powered Vehicle and to design a vehicle which works efficiently in the growing fuel Area i.e. Electric powered Vehicle.

**Cost of Vehicle:**

The Total cost of the vehicle is about 61,000/-INR

**College Sponsored Amount:** 50,000/- INR

**Event Organized By:**

SAE Collegiate Club, Gautam Buddha University, Noida

**Date of Participation:** 11<sup>th</sup>& 12<sup>th</sup> February 2015

**Ranking Statistics:**

Rank in Virtual: 17 out of 84 teams

Position in Dynamic: 15 out of 39 teams

**Faculty Advisors:**

Mr. G. Srinivas Sharma (Associate Prof. MED)

Mr. K. Karthik Rajashekar (Assistant Prof. MED)

**Team:** B.E (3/4) Mech & EEE Students

Pradeep Kumar, Sathya Prakash, Saleem Pinjari, Sravan Kumar, Sri Sai Likith, Avinash Varma, Sushane, Surya Prakash, Deepak Pragyna, Sai Yayaswy, Sandeep Reddy, Krishna Reddy, Siraj Ahmed, Sathvik Aldas, Naynesh.

## SAE SUPRA-2015



**Team Name:** Ampere Motorsport

**Technical Details:**

Ampere Motorsport India, a group of 15 students from Automobile Engineering department, have participated in SupraSAE India 2015, the most challenging student competition in India organised by SAEINDIA, a subsidiary of SAE (Society of Automobile Engineers, U.S.A). We have made an attempt to redefine the standards of the competition by incorporating an AWD system, the first of the competition, to reflect our views about vehicle dynamics in direction of Perfection through Balance. The vehicle, according to design, has the capability to reach 116Km/h.

**Cost of Vehicle:**

The project is estimated to cost 10.29 lakh.

**College Sponsored Amount:**2.75 lakh

**Event Organized By:**

SupraSAE India is organised by SAEINDIA, a subsidiary of SAE (Society of Automobile Engineers, U.S.A).

The Virtual Round of the event took place during the second week of January 2015.

**Ranking Statistics:**

Ampere Motorsport India has achieved an overall virtual rank of 26 out of 170 participating teams and is ranked No.1 in the Telangana-Andhra region.

**Faculty Advisors:**

Dr.G.Venkata Subbaiah (Associate Prof. MED)

Mr.Pandarinath Mongolla (Assistant Prof. MED)

**Team:** B.E (2/4 &3/4) Auto Students

Abhinav, AbhishekMosalikanti, DewwaKakkar, KrishnapriyaVishnubhotla, Manidhar Chary, PhaneendraPeri, Raviteja Reddy Chinthala, Sai Chander, SreeramPeddi, Sai Srihitha, Srikrishna Reddy, SudeepthVarma, Sukhdeep Singh Toor, Vamshi Krishna Dasari, Varshith Reddy