



**K. J. Somaiya College of Engineering  
Vidyavihar, Mumbai – 400 077**

# **Mechanical Department**

***News Letter***

**Vol. XII, No. 1 January–June 2017**

# Somaiya Mech.....



**Head speaks...**

## Departmental Activities

1. NAAC committee visited the department on 17<sup>th</sup>, 18<sup>th</sup>, and 19<sup>th</sup> April 2017 and accredited the institute with "A" grade.
2. **Dr. S. S. Bhusnoor** has delivered Invited Talks on "Pollution Control and its Norms" and "Engine Modification for improvement of Performance and Emissions" in ISTE Approved STTP on "Energy Environment and water Conservation", at A.C. Patil College of Engineering, June 26-30, 2017.
3. **Dr. Ramesh Lekurwale** has arranged training on FLEXSIM simulation software in June-2017 at KJSCE, Mumbai
4. **Dr. A. G. Bhave** organised a lecture on 8-3-2017 for MTech-EE students on "Green Audit", by Mr. Ravindra Datar, Senegy Consultants.
5. **Dr. A. G. Bhave** delivered a lecture on "Biomass gasifiers and solar concentrator"; at "Energy Conservation: Future and Opportunities"; workshop organised by LoGMIEER, Nashik, 19-20 Jan. 2017.
6. **Prof. Sangeeta Bansode** has arranged Ansys certified CFD course conducted by ARK infosolutions 29 May - 2 June 2017
7. **Prof. Sangeeta Bansode** has arranged Adams software Training organised on 7 and 8 th Feb 2017.
8. Capacity of PGCC lab (Lab in charge- Prof. Sangeeta Bansode) increased

from 10 to 20 computers for Mtech CCR and EE students

## Faculty Development Activities

### Participation in Workshops/Conferences

1. **Dr. S. S. Bhusnoor** attended the two days course on Air Quality in 10 cities of Maharashtra organized by CSIR-NEERI, MPCB and IIT Bombay at Nagpur
2. **Dr. S. S. Bhusnoor** attended the two days course on Aerosols and Air Quality organized by IITB-WUSTL at IITB
3. **Prof. Sandeep Chopade and Prof. Vijay Shinde** have attended workshop "Fluid flow and computational methods" at VJTI, Mumbai.
4. **Prof. V. G. Dhore and Dr. Luckman Muhmood** attended workshop on Nanoscience & Nanotechnology: Fundamental, Synthesis and Applications at Sardar Patel college of Engineering, Mumbai
5. **Prof. V. V. Bhosle** arranged STTP on Bioinformatics: Emerging Research Trends and Applications from June 27 - July 1, 2017 at KJSCE, Vidyavihar approved from ISTE.
6. **Prof. Abhishek Bhaduria** attended STTP on "Project Management for National Development" at VITI, Mumbai

7. **Prof. Sandeep Chopade** attended Hands on ANSYS software to analyze applications in Mechanical Engineering at Saraswati college of engineering, kharghar
8. **Prof. Manoj Palsodkar , Prof. Shivangi Thakkar and Rajesh Pansare** attended Hands on Training on FLEXSIM simulation software in June-2017 at KJSCE, Mumbai
9. **Dr. S. R. Nikam** attended workshop on GIAN course on Acoustics and Industrial Noise Control at IIT, Kharagpur.
10. **Dr. S. R. Nikam** attended One week refresher course on Refrigeration and Air Conditioning organized by AICTE-ISHRAE and College of Engineering Pune.
11. **Prof. Shilpa Bhambure and Priyanka Patil** have attended the workshop “Biology for engineers” in IITB
- (ICEMTE, 2017)” organized by L.R .Tiwari College of Engineering
3. **Dr. S. S. Bhusnoor** published papers in an international conference ICEMTE, 2017 titled:
- Study on influence of Sample Thickness and Thermo Physical Properties on Convective Drying of Vegetables.”, International Conference On Emanations in Modern Technology and Engineering” Volume:5 Issue
  - Theoretical Analysis of Heat Pipe Heat Exchanger for Waste Heat Recovery from Diesel Engine Exhaust.”, International Conference On Emanations in Modern Technology and Engineering” Volume:5 Issue 3
  - “Design, Modelling and CFD Analysis of EGR Cooler for Future Norms of Diesel Engine.”, International Conference On Emanations in Modern Technology and Engineering” Volume:5 Issue 3
  - Theoretical Study on Influence of Exhaust Gas and Coolant Flow Rate on Heat Recovery of Engine Exhaust by Using Fin and Tube Heat Exchanger” Volume:5 Issue 3
  - Study on Performance Characteristics of Thermodenuder and Using It to Control Vapor Emission for Engine Exhaust.”, International Conference On Emanations in Modern Technology and Engineering” Volume:5 Issue 3

### **Paper Publication/ Presentation**

1. **Dr. S. S. Bhusnoor** published paper on Thermophoresis deposition studies for NaCl and diesel exhaust particulate matter under laminar flow, in *Journal of Aerosol Science*, Vol. 105
2. **Dr. S. S. Bhusnoor** was the Chair person for the International Conference on “International Conference On Emanations in Modern Technology and Engineering

### **4. Dr. R. R. Lekurwale**

- published paper in Journal of Engineering Education Transformations (JEET) titled. Outcome based education- A cased Approach, Volume 30, No. 3, January 2017
  - Different Actuation Mechanisms for End Effectors of Laparoscopic Surgery Instruments (Accepted) at 59th National Convention & International conference on Manufacturing & Industrial Engineering (ICMIE-2017) Aurangabad
  - Published a paper on "Design and fabrication of abrasive jet machine for machining glass using sea sand" in 2nd National Conference on Recent Trends In Mechanical Engineering at Walchand College of Engineering held on 29-06-2017
  - Published a paper on "Optimization of wire-cut electric discharge machining process parameter for inconel 718 using grey relational analysis" in 2nd National Conference on Recent Trends In Mechanical Engineering at Walchand College of Engineering held on 29-06-2017 with Akshay Achalakar
  - Worked as a reviewer of 2nd National Conference on Recent Trends In Mechanical Engineering at Walchand College of Engineering held on 29-06-2017.
  - Worked as a reviewer of 59th National Convention & International conference on Manufacturing & Industrial Engineering (ICMIE-2017) Aurangabad
5. **Dr. A. G. Bhave** published following two papers in International Journal of Engineering, Education and Technology, vol. 5, issue 2, 1-4-2017
    - Medium-High Temperature Industrial Application of Solar Energy with Thermal Storage for Process Heating in India; Chirag Kale, A.G. Bhave. International Conference On Emerging Trends And Research In Engineering; Navsahyadri Group of Institutions, Faculty of Engineering, Pune. 23-25 March 2017
    - Biomass Resources available in India and its Pyrolysis using different Reactors; Vishal Shah, A.G. Bhave. International Conference On Emerging Trends And Research In Engineering; Navsahyadri Group of Institutions, Faculty of Engineering, Pune. 23-25 March 2017
  6. **Prof. V. G. Dhore** has published a paper in 1st International and 18th ISME Conference Enabling sustainable development in Mechanical Engineering titled Characterization of Fe-Co- Ni-Ternary Metal Catalyst For High Yield Multi-Wall Carbon Nanotubes at NIT, Warangal.
  7. **Prof. V. S. Narawane** has published a paer titled Study and comparison of the various methods to solve problems in cellular manufacturing (pp. 12-18) in industrial engineering journal
  8. **Prof. V. S. Narawane** has published a paer titled Optimization Model of Medical, Nuclear Supply Chain By Using Genetic Algorithm (pp. 23-29) in industrial engineering journal
  9. **Prof. V.S. Narawane** has published paper titled Literature Review of

Cloud Computing Adoption Theories and Frameworks (pp. 625-640) in Enhancing National Competitiveness: Role of Industrial Engineering and Technology Management, Mumbai, Excel India Publishers

10. **Dr. Luckman** published paper on Modelling and Experimental studies of Diffusivity of sulphur and its relevance in observing surface oscillations at the slag metal interface through X-ray imaging at International Conference.

11. **Prof Manoj Palsodkar** and **Prof. Rajesh Pansare** published paper in 2nd Biennial International Conference on Nascent Technologies in Engineering (ICNTE – 2017)

12. **Dr. S. R. Nikam** has published a paper on “Effect of Chevron Nozzle Penetration on Aero-acoustic Characteristics of Jet at M=0.8 Provisionally accepted paper with minor revision in Fluid Dynamics Research journal

13. **Dr. S. R. Nikam** has published a paper titled Effect of Chevron on Azimuthal variation of near field pressure fluctuations in compressible jet at 23<sup>rd</sup> AIAA/CEAS Aeroacoustics Conference, 5<sup>th</sup> to 9<sup>st</sup> June 2017,

14. **Prof. Prashant Jain** has published a paper on ‘Solar Parabolic Trough - A Review of Performance Analysis’, Kavya Dwivedi, Prashant Jain, IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE), e-ISSN: 2278-1684, p-ISSN: 2320-334X, pp 17-20, March 2017 (Certificate attached).

15. **Prof. Prashant Jain** published paper on ‘A Review on Current Indian Energy Scenario’, in may-2017

16. **Prof. S. Rajnarsinha** published :

- FEA Analysis of pressure vessel with Different Type of End Connections. February 2017, Volume 4, Issue 02, page No. 95 - 99

- Condition Monitoring and Fault identification of new deep groove ball bearing using lab view. February 2017, Volume 4, Issue 02, Page No. 104 – 108.

- Numerical Analysis of Heat Transfer from flat plate to orthogonally impingement air jet. March 2017, Volume 4, Issue 03, Page No 03 - 06.

## Research Activities

1. USPTO.’has granted a patent to **Prof. Avinash Prabhudesai** for his work



(12) **United States Patent**  
Prabhudesai

(10) Patent No.: **US 9,656,542 B2**  
(45) Date of Patent: **May 23, 2017**

## Student’s Academics

### Nov. - Dec. 2016 Toppers

#### Second Year

No.	Name of Student	GPA
1.	MISHRA ABHISHEK SANJAYKUMAR HEMLATA	9.4
2.	SONALKAR PRABODH AJIT JYOTSNA	9.29
3.	MORE VEDANSH EKNATH PRATIBHA	9.21
4	DALAL YASH RAJESH	9.21

	ANITA	
5	SHAIKH OWAIS AHMED MUSHTAQUE AHMED FIRDOS	9.21

### Third Year

No.	Name of Student	GPA
1.	MOHAMMEDI ALIASGAR JOHAR MALEKA	9.77
2.	ABDUL RAUF ABDUL HAMID BASHIRUNNISA	9.73
3.	PANCHAL NISARG CHANDRAKANT BHARTI	9.73
4	PANCHAL PURAV RASIKLAL HANSA	9.73
5	QAZI FARHAN HUSSAIN ILYAS HUSSAIN SALMA	9.73

### Final Year

No.	Name of Student	GPA
1.	NERURKAR OMKAR VIKAS VRINDA	9.78
2.	BHAT JAYESH PRAFULLA POORNIMA	9.7
3.	SHENOY VIVEK VENKATESH VIDYA	9.63
4	MISRA ARUSHI OMPRAKASH SHASHI MISRA	9.52
5	BHATIA MIHIR KRISHNAKUMAR VARSHA	9.52
	SHAIKH ASIF ASLAM MUMTAZ	9.52

### M.Tech -CCR

No.	Name of Student	GPA
1.	Rahul Pawar	9.53
2.	Prathamesh Rege	8.89
3.	Fenil Modi	8.79

### M.Tech – Energy Engineering

No.	Name of Student	SGPI
1	Bakal Pritam Rayba	8.37
2	Chavan Prathamesh Bhaskar	7.47
3	Lotke Nikhil Narayan	7.21

## Placement

Departmental Placement record:

Sr.	Name of Company	Students Placed
1.	ACCENTURE	27
2.	INFOSYS	11
3.	GODREJ AND BOYCE	6
4.	GRINDWELL NORTON	1
5.	VOLTAS LTD.	4
6	WISDMLABS	1
7	MEDIA.NET	3
8	CARTESIAN CONSULTING	3
9	BLUESTAR LTD.	4
10	VPHRASE	2
11	SMG CONVONIX	5
12	Pratap Plastics	1
13	Friction Innovative Education	1
14	Halftick Infoservices	1
15	Roop Telsonic Ultrasonix Limited	1
16	IFB Industries Ltd	4
17	Nikhil Comforts	5
	Total	80

## Student Achievement

Six students of Mtech-CCR offered stipendary internship and project with future job opportunity in Elmac packaging industry owned by our Alumni Sudish Sukumaran.

## Students' Mega Projects

### Red Shift Racing

**Faculty Advisor: Dr. S. S. Bhusnoor**

Achievements:

1. Enduro Student India, Jan 2017 :
  - 8th in Cost Evaluation
  - 16th in Sales Presentation
  - 21st in Design Evaluation
  - 12th in Acceleration Run
  - 21st In Sprit Race
2. BAJA SAE INDIA, Feb 2017:
  - 1st Team to clear the Technical Inspection out of 180 teams
  - 3rd in Business Plan Presentation
  - 14th in Manuverability
  - 15th in Acceleration Run
  - 9th in Endurance Race
  - 11th Overall in India
  - 1st Overall in Mumbai
  - Budget Allotted: 3 Lac



### MESA

**Faculty Advisor: Prof. V. G. Dhore**

#### 1. IMPULSE 2017 ( 18<sup>th</sup> March 2017 )

Following events were conducted on the annual occasion 'Impulse' of the Mechanical Department of K.J.Somaiya College of Engineering.

- 1) BE project presentation ( 18<sup>th</sup> march 2017 )
  - Attended by some 165 students from the final year, this event showcased the amazing brains and innovation of this generation mechanical engineers, ranging from additive manufacturing, solar energy, composites usage, etc.
- 2) Technical Paper presentation ( 18<sup>th</sup> March 2017 )
  - This event had 4 participants each with outstanding ideas.
  - The event by judged by Dr.Luckman Mahmood a professor of our college.
- 3) Quiz( 18<sup>th</sup> March 2017 )
  - The quiz was solely meant for the final years students and to check whether they are ready to solve some of the toughest technical questions!
  - The number of students that participated was about 20.

- 4) Pictionary ( 18<sup>th</sup> March 2017 )
- A one of its kind fun event, where the participants had to form pairs and compete.
  - One team member would try to draw and picture any mechanical related process while the other member would guess it.
  - The participants surely enjoyed to their fullest.
  - About 10 students participated in this event.
- 5) ME project presentation ( 18<sup>th</sup> March 2017 )
- The post graduate students of our college also put up a commendable presentation.
  - The whole class of 18 students was present on this day.

## 2. Seminar by TISS ( 3<sup>rd</sup> March 2017 )

- The Tata Institute of Social Sciences took an initiative to approach the K.J.Somaiya College of Engineering to spread the awareness regarding the fragile mindset the students have throughout the strenuous academic career.
- The Institute sent a dignitary to explain the premise to the students and also provided free consultation courses.
- A good 50 number of students attended this seminar and the took benefit from it.

## 3. Industrial visit to Godrej & Boyce aerospace industry (25<sup>th</sup> March 2017 )

- By far the most exciting event conducted by the Mechanical Council, the students were given an opportunity to take a look and visit the Godrej & Boyce Aerospace industry at Vikhroli which manufactured the magnificent Bhrmhos Warhead.

- Two batches each with a strength of 20 students visited the plant.
- The students got to witness the process of how the outer structure of the warhead is produced and also received valuable information about some the most advanced and complicated machinery used in the procedures.

## ROBOCON

**Faculty Advisor: Prof. A. A. Prabhudesai**

**Abu Robocon-2017 : Rank 19<sup>th</sup> out of 113 participants**

Achievements : Use of LINEAR GUIDES for angle(2 planes) mechanism.

- 3 Wheel Omni Drive for stabilization.
- Image processing for disc tracking.
- Dynamically stable design of bot.
- Use of encoders for implementation of feedback.
- EEPROM to store variables and access during the match.

## ORION

**Faculty Advisor: Prof. B. M. Pradhan**

Developmental stages of ORI-17 racing car:

- Jan-17: he month was dedicated to manufacturing of the suspension system. Parts such as wheel hubs, suspension rods and Bell-cranks were manufactured using various advanced industrial techniques such as water-jet cutting, laser cutting of metals, etc. Different CAD simulations and measurements led us to the optimum design for the car.
- Feb-17 : The chassis design was finalised and manufacturing took place at KLT Automotive, Palghar. The Chassis is made out of M.S. tubes having standard diameter specified in the competition rulebook. The concept of load transfer through welded joints in a truss membered structure is applied. All

suspension, bodyworks, electrical components etc, are mounted on the chassis. The process of Metal-inert Gas (MIG) Welding method was adopted for welding the tubes. The month of February was entirely dedicated for the manufacturing of frameworks chassis and bodyworks.



- March – 17: All components which require feedback or those which need to be controlled by the driver such as Gear shifting, ignition, activation of DRS, etc. is actuated by an Electronic Control Unit (ECU). The wiring harness and PCB's were designed and manufactured completely by the team members of the Electronics system of Orion Racing India. A Carbon Fibre box was designed and manufactured by the composites team for mounting the electronic circuits to the main body.
- April-may-17: A Limited slip differential, purchased from Drexler was selected considering monetary and design constraints. Tripods, tripod housings and drivetrain sprockets were manufactured using lightweight aluminium using water-jet cutting and various other techniques. Once all the parts have been manufactured, final assembly was made. Brake pedals and brake line assemblies were made in this period and extensive

testing was done. Complete suspension, drivetrain and brake assemblies were done.



- June – 17: After the final car assembly and extensive car testing was done, the team was finally ready to pack the car and other tools & spares for their overseas competition. The team is to participate in the Formula Student Italy competition, also known as Formula ATA which is to be held from 19th July - 23rd July, 2017 and also Formula Student Germany, to be held in Hockenheim circuit. The German competition is to be held from 8th August - 13th August, 2017.

## ONYX

### Faculty Advisor: Prof. Prashant Jain

TEAM ONYX is an aero design group from K.J. Somaiya College Of Engineering. We are a group of aviation enthusiasts who design-fly-build aeroplanes for various competitions which include our prestigious IIT's.

This year, Team Onyx participated in the Boeing National Aeromodelling Competition held on 24<sup>th</sup> March to 26<sup>th</sup> March, 2017 at IIT-Kanpur. A total of 85 teams participated in the competition. The qualifier round was held on the first day wherein the plane was required to climb smoothly and glide for the maximum time. Unfortunately, we could not be in the top 30 teams to qualify to

the next round. The reason for this could be attributed to lack of pilot training. However, I would like to inform you that the airplane was in a very good flying condition and it flew well for its flight time.

To overcome this major flaw of lack of pilot training we have decided to enter competition based on design and not only pilot skills. The biggest aim of this year is to achieve/partially solve the highest Thrust/Weight Ratio while maintaining great agility and stability which is one of the 5 problems of aerodynamics like the four problems of mathematics.

Some of the other aims are to design and analyze Multi-rotor/engine planes and Short take-off and landing. The team is also in process of designing UAV's for surveillance without the fear of being detected. On behalf of the team I would like to thank our respected Principal ma'am and the faculty advisor Prof. Prashant Jain for the support and encouragement they have given to us. Through their constant support, we aim to be the top team in India.

## Industrial Visits

1. Elmac Bhivandi Visit organised for Mtech CAD/CAM students on 18 March 2017
2. MESA arranged Industrial visit to Godrej & Boyce aerospace industry on 25th March-2017

## Departmental Responsibilities

### Portfolios 2016-17

**DEC chairman:** Prof. B. M. Pradhan

**PG coordinator CAD/CAM:** Prof S. N. Bansode

**PG coordinator Energy engineering:** Prof Ramola Sinha

### Core areas coordinators:

1. **Design** - Prof. B. M. Pradhan
2. **Thermal** – Dr. K. N. Patil
3. **Manufacturing** – Prof. S. Rajnarsinha
4. **Allied** – Dr. Luckman Muhmood

### Class Coordinators:

**FY – EG:** Prof. R. B. Pansare

**FY – EM:** Prof. Shilpa Bhambure

**SY:** Prof. Shilpa Bhambure

**TY:** Prof. Chitra B. Menon

**LY:** Prof. V. M. Khaparde

**MTech- CAD/CAM :** Prof. S.N. Bansode

**Mtech EE :** Prof. Ramola Sinha

### Autonomy committee:

Dr. S.S. Bhusnoor, HOD

Prof. V. V. Bhosale

Prof. Priyanka Patil

### Time Table Incharge:

Prof. Shivangi Thakkar

Prof. Atul Saraf

### Dept. Alumni Incharge:

Prof. Prashant Yelpale

Prof. Priyanka Patil

### Web Site Incharge:

Prof. V. V. Bhosale

### Departmental News Letter:

Prof. Prashant Jain

Prof. Priyanka Patil

### Placement Coordinator:

Prof. Ajay Gangrade,

### Laboratory Coordinator:

Prof. Ramola Sinha,

### R & D Coordinator:

Prof. Abhishek Bhadauria

### Chief Proctor:

Prof. Prashant Jain

### Final year Projects:

Prof. V.M. Khaparde

### Dept. Library Incharge:

Prof. Shilpa Bhambure

# Newsletter Team

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