



MECHANICAL ENGINEERING DEPARTMENT

Newsletter

January–June 2018

DEPARTMENT OF MECHANICAL ENGINEERING
K J Somaiya College of Engineering Vidyavihar, Mumbai – 77

Somaiya Mech...

Always Ahead...!



**Badminton Robots -
One For Service & One For Return**



**Team Redshift -
Enduro Student India - 2018**



सोमैयाच नंबर १

नोएडामध्ये झालेल्या फॉर्म्युला स्टुडेंट्स स्पर्धेत मुंबईच्या सोमैया कॉलेजनं टॉप गिअर टाकत बाजी मारली आहे. सलग दुसऱ्यांदा विजेतेपद पटकावणारी कॉलेजची टीम ०१ पोजिशन कायम राखत, जर्मनीत होणाऱ्या स्पर्धेसाठी सज्ज होतेय...

कारची वैशिष्ट्यं
'टोम ओरीऑन रेसिंग' ने बनवलेल्या कारचे नाव 'रिगेल' आहे. कारमध्ये KTM 390 हे चाइकचे इंजिन वापरण्यात आलं असून कारचं वजन १८७ किलोग्रॅम आहे. ४.५ सेकंदांमध्ये ही कार प्रतिसात १०० किलोमीटरसं वेग गादू शकते.



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आधीसुध्दा पेतली आहे. ६ दिवस रंगलेल्या स्पर्धेत प्रेझेंटेशन आणि प्रॅक्टिकल अशा विभागात स्पर्धा घेण्यात आल्या होत्या.

देशभरातल्या ऑटोप्रेमी विद्यार्थ्यांचं लक्ष वेधून घेणाऱ्या फॉर्म्युला स्टुडेंट्स इंडिया स्पर्धेत सोमैया कॉलेजच्या 'ओरीऑन रेसिंग' टीमनं ४७ कॉलेजांच्या टीमना मागे टाकत पहिला क्रमांक पटकावला. सलग दोन वर्षे या स्पर्धेत बाजी मारल्यानं कॉलेजच्या टीमचं कौतुक होतंय. या यशाबरोबरच ऑगस्ट महिन्यात जर्मनीमध्ये होणाऱ्या आंतरराष्ट्रीय स्पर्धेत होण्याचा मान सोमैया कॉलेजनं पटकावला आहे. नोएडा इथे झालेल्या स्पर्धेत देशभरातल्या ४७ संघांनी आपल्या कासं

ओरीऑन रेसिंग टीमनं सगळ्यात बाजी मारत ओव्हरऑल पहिला रँक पटकावला. त्याशिवाय इंजिनीअरिंग डिझायनिंग इव्हेंट, ऑटोक्रास इव्हेंट, कार खर्च आणि उत्पादन इव्हेंट, इंधनाचा कमीतकमी वापर इव्हेंट, एन्ड्युरन्स इव्हेंटमध्येदेखील सर्वोत्तम प्रदर्शन केलं. ९ ते १४ ऑगस्टदरम्यान जर्मनीत होणाऱ्या 'फॉर्म्युला स्टुडेंट्स जर्मनी' स्पर्धेसाठी टीम सज्ज झाली आहे.

सुसाट

का. विद्यार्थ्यांच्या स्पर्धेत सोमैया कॉलेजच्या 'ओरीऑन रेसिंग' टीमने पहिला क्रमांक पटकावला आहे. या स्पर्धेत बाजी मारल्यानं कॉलेजच्या टीमचं कौतुक होतंय. या यशाबरोबरच ऑगस्ट महिन्यात जर्मनीमध्ये होणाऱ्या आंतरराष्ट्रीय स्पर्धेत होण्याचा मान सोमैया कॉलेजनं पटकावला आहे. नोएडा इथे झालेल्या स्पर्धेत देशभरातल्या ४७ संघांनी आपल्या कासं

**Team Orion -
Winners of Formula Student India 2016**



**Team Onyx -
SAE Aero Design Challenge, Chennai, 2018**



**- Team Eta
SEM Asia, Singapore - 2018**

Head Speak...

I welcome everyone in the department of Mechanical Engineering. Current era is of fast development and evolution of new/exciting technologies. It creates the opportunities and challenges for us to be upbeat with evolution.

As HOD of the Department of Mechanical Engineering, I have no doubt that with your assistance we will be able to build a department which will be progressive in technology. I must say that the principles and a holistic approach in the department will grow. The ethics play a vital role in the decision making and same have been embraced by the students too. Be thoughtful with all work you carry. The respect is one to earn and always be respectful to others at all odd times. In making the choice to be disciplined and do what is proper, everyone must be given his or her due respect. In addition to the above, some more points which are worth to remember forever are as follows:

- *No Matter what you say and how you say it, SOME people will never get it. That is not your fault!*
- *No matter how pure your intentions are, SOMEBODY will accuse you of ill-intentions. Stay pure anyway.*
- *No matter how humble you are, SOMEBODY will still consider you proud. Stay humble anyway.*
- *Some of your greatest disappointments will come from those you gave your best appointments or commitments.*
- *Sometimes, some of the worst things you will hear about yourself may come from those you speak best of.*

Be a part of development agenda at all times and thrust on all matters related to excellence at each place.

- Dr. Ramesh Lekurwale,
HOD, Mechanical department

Departmental Activities

Dr. Ramesh Lekurwale organized a three day “Medical Device Hackathon” MEDHA in July-2018 at KJSCE in collaboration with IITB.



Faculty Development Activities

Workshops/ Conférences Attended by Faculty

1. Fundamentals and applications of Fracture Mechanics, VJTI, Mumbai, Prof. Shilpa Bhambure
2. Hands-on One day workshop on Python Programming and Data analytics, K.J. Somaiya College of Engineering, Prof. Chitra Menon
3. Nanotechnology opportunities and challenges in Engineering Materials and manufacturing, VJTI, Mumbai, Prof. Chitra Menon
4. Laboratory and Ergonomic Safety for Engineers, IIT Bombay, Dr. S. R. Nikam
5. Fundamentals and applications of Fracture Mechanics, VJTI, Mumbai, Prof. Priyanka Patil

6. Laboratory and Ergonomic Safety For Engineers, IIT Bombay, Prof. Atul Saraf

7. First Course in Computational Fluid Dynamics: Development, Application and Analysis, IIT Bombay, Prof. Atul Saraf

8. Advances in Fluid Dynamics: Experimental and Computational Approaches K. J. Somaiya College of engineering, vidyavihar Prof. Atul Saraf

9. SPSS AMOS software Training Workshop K. J. Somaiya college of engineering, vidyavihar Prof. Vijay Khaparde

10. Writing research Paper and Patents VIIT Pune Prof. Vilas Dhore

11. SPSS AMOS software Training Workshop K. J. Somaiya college of engineering, vidyavihar Prof. Abhishek Bhadauria

12. Nanotechnology Opportunities and Challenges in Engineering Materials and Manufacturing, VJTI, Mumbai, Prof. Abhishek Bhadauria

13. Innovative Teaching Learning Practices to Achieve Outcome Based Education & Accreditation, Sardar Patel Institute of Technology, Mumbai, Prof. Anushri Joshi

14. Advances in Fluid Dynamics: Experimental and Computational Approaches K. J. Somaiya college of engineering, vidyavihar Prof. Vijay Shinde

15. Wireless Sensor Networks and IoT K. J. Somaiya college of engineering, vidyavihar Prof. Vaibhav Narwane

16. Smart Contracts with Blockchain and IoT, VJTI, Mumbai Prof. Vaibhav Narwane

Workshops/ Conferences Organized by Faculty

Advances in fluid Dynamics: Janaury 2018,
Experimental & Computational Approaches, Dr. S. R. Nikam & Prof. S. Rajanarasimha, 21 participants.

Paper Publication/ Presentation

1. Dr. Ramesh Lekurwale, published a paper on “Engineering education Research: Current Trends, page 1-4” in Fourth International Conference on Transformations in Engineering Education: Madurai

2. Dr. N. R. Gilke published paper on “Engineering education Research: Current Trends, page 1-4” in Fourth International Conference on Transformations in Engineering Education: Madurai ,ISSN/ISBN No. ISSN 2349-17.

3. Mr. Sachin Shinde and Dr. Ramesh Lekurwale published a paper on “Parametric mathematical modelling and Aspect ratio optimization of eccentric spiral bearing through FEA “ in International Conference on Advances in Thermal system, material and design engineering at VJTI.

4. Prof. Rajesh Pansare and Dr. Ramesh Lekurwale published a paper on “Selection of manufacturing process parameters using DoE” in Int. Conf. on Advances in science, tech and engg

5. Mr. Sagar Talele and Dr. Ramesh Lekurwale published a paper on “Different actuation mechanism for end effector of laparoscopic surgery instrument . Page 52” in 59th National Convention of Indian Institution Industrial Engineering

- and Int. Conf. on Manufacturing and Industrial Engineering
6. Mr. Anurag Tagare and Dr. Ramesh Lekurwale published a paper on "Design and development of safer Craintone for skull cutting" in 3rd National Conference on Recent Trends In Mechanical Engineering at Walchand College of Engineering, Sangli) on 21st and 22nd June 2018 ISSN/ISBN No. . 978-81-931546-9-4.
 7. Shivani Borthakur and Dr. S. S. Bhusnoor have published a paper on "Optimization of a method to improve the Performance of Solar Panel" in International Conference on Advances in Science, Technology & Engineering ICASTe-2018, pp. 124-138
 8. Kalyani Tayde and Dr. S. S. Bhusnoor have published a paper on "Experimental studies on transport of heat and mass during convective drying of food materials "Experimental studies on transport of heat and mass during convective drying of food materials" in International Conference on Advances in Science, Technology & Engineering ICASTe-2018, pp. 134-138
 9. Mr. Rajat Patle, Dr. S. S. Bhusnoor have published a paper on "Experimental studies on evaluation of performance parameters on heat pipe heat exchanger for recovery of heat from engine exhaust" in International Conference on Advances in Science, Technology & Engineering ICASTe-2018, pp. 134-138
 10. Prof. A. K. Gangrade r. V. M. Phalle, Dr. S. S. Mantha have published a paer on "Performance Analysis of a Conical Hydrodynamic Journal Bearing" in Iranian Journal of Science and Technology, Transactions of Mechanical Engineering, (), 1-15 DOI 10.1007/s40997-018-0217-2
 11. Prof. M. A. Palsodkar and Prof. R. B. Pansare have published a paper on "Barriers and Enablers in Agile Manufacturing of Product" in International Conference on Global Meet on Advances in Design, Materials & Thermal Engineering at Saraswati College of Engineering, Kharghar, Navi Mumbai on 11&12 January 2018
 12. Dr. K. N. Patil, Prof. V. G. Dhore, Prof. W. S. Rathod have published a paper on "Synthesis and Characterization of High Yield Multiwalled Carbon Nanotubes by Ternary Catalyst" in International Journal via conference in Materials Today: Proceedings (Elsevier) Volume 5, Issue 2, Part 1, 2018, Pages 3432-3437
 13. Dr. K. N. Patil, Prof. V. G. Dhore, Prof. W. S. Rathod have published a paper on Investigation of mechanical properties of carbon nanotubes reinforced aluminium composite by metal injection molding International conference on 16, 17,18 March 2018 at Hyderabad
 14. Dr. K. N. Patil, Prof. V. G. Dhore, Prof. W. S. Rathod have published a paper on "Synthesis and Characterization of High Yield Multiwalled Carbon Nanotubes by Ternary Catalyst" in International conference on 16, 17,18 March 2018 at Hyderabad
 15. Prof. S. Rajanarsinha have published on "Numerical Study of Base Drag Reduction using Locked Vortex Flow Management Techniques for lower Subsonic Regime, page no 2109-2111." In 20 Th International Conference on Fluid Mechanics and Flow Analysis

16. Prof. S. Rajanarsinha have published on “Condition monitoring of Rolling Element Bearing by acoustic analysis using labview” in ICIMA 2018 ISBN 978-981-13-2489-5

17. Mr. Vikesh Kumawat, Nikhil Diwte, Amit Patel and Prof. S. N. Bansode have published a paper on “Design and Prototype of Wireless Robot for Condition Monitoring of Coal Conveyor” in International Conference of Intelligent manufacturing and Automation

18. Prof Abhishek Bhadauria has published paper on “CFD Analysis of High Temperature and High Velocity System: Plasma Torch” in International Journal of Innovations in Engineering and Technology

19. Prof Abhishek Bhadauria has published paper on “Studies on a Solar Heated Packed Bed Pyrolysis Reactor for Bio-oil production” in Journal of Biofuels

Students’ Academics

Nov. - Dec. 2017 Toppers

Second Year

No.	Name of Student	GPA
1.	Giri Prasannajit Sushant Rita	9.95
2.	Parasia Chirag Girish Disha	9.81
3.	Singh Utkarsh Ajeet Shailja	9.76
4	Shetake Saurabh Subhash Madhuri	9.71

5	Inamdar Rohit Sachin Nishigandha	9.67
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Third Year

No.	Name of Student	GPA
1.	Dighe Swapnil Sanjay Rohinee	9.59
2.	Rathod Bhavik Vijay Nita	9.55
3.	Lightwala Huzefa Murtuza Tasneem	9.50
4	Bajaj Pranav Govardhan Renuka	9.45
5	Mishra Abhishek Sanjaykumar Hemlata	9.41

Final Year

No.	Name of Student	GPA
1.	Abdul Rauf Abdul Hamid Bashirunnisa	9.71
2.	Sokhi Amritpal Singh Tirlochan Singh Seema Kaur Chanchad Neel Valjibhai Hansa	9.58 9.58
3.	Singh Abhinav Ashokkumar Neela	9.5
4	Shah Parth Shailesh Jigna	9.46
5	Tamhankar Nikhil Abhay Ashwini	9.42

Students’ Placement

Departmental Placement Record for 2017-18

Sr.	Name of Company	Students Placed
1.	Zs Associates	3
2.	Daiking Air Conditioning	1
3.	Godrej And Boyce	12
4.	Cartesian Consulting	2
5.	Toyo Engineering	3
6	Indus Momentus	1
7	Jacobs Engineering	3
8	Voltas	4
9	Accenture	18
10	Vphrase	2
11	Performix Convonix	1
12	Capgemini	2
13	Express Global Logistics	2
14	Ifb Industries	6
15	Friction Innovative	1
16	Tranzact	3
17	Grindwell Nortan	1
18	Fuzitech India	1
19	Accil(Ispat Limited)	3
20	Citizen Industries	3
21	Daifuku	3
22	Demazi	2
23	Sanmar	1
24	Stellar Value Chain	2
25	Vision Mechatronics	1
26	JRE Pvt. Ltd.	2

Students' Councils & Mega Projects

MESA

Faculty Advisor: Prof. V. G. Dhore

The industrial visit to Godrej Material Handling Division was organized on 20th January 2018. The 40 students attended the industrial visit. Prof Shivangi Thakkar and Prof. Chitra Menon were associated with the students for the visit. During visit the various machines such as turning machines, vertical machining centers and horizontal machining centers were shown. Then, the blasting finishing process was shown and illustrated. The manufacturing and assembly of the chassis of the forklift trucks were shown and explained.

The industrial visit to Reliance thermal power plant, Dahanu was arranged on 10th March, 2018. Prof. Vijay Shinde and Prof. Atul Saraf associated with the students during the visit. During the industrial visit, the students got the insight of the whole plant right from the raw material (coal) procurement, processing, combustion and generation & transmission of electricity. The whole processes were explained in-detail by the factory engineer with detailed description about equipment with their specifications.

ROBOCON

Faculty Advisor: Prof. A. A. Prabhudesai

Team KJSCE Robocon started this year with a lot of enthusiasm and with a resolve to implement as many present industrial practices as possible. TKR organized a Matlab workshop for participants from all colleges in Mumbai zone. This workshop was conducted by Mathworks itself. This year in line with prevalent practices in mobile robotics industry TKR had resolved to avoid use of

pneumatics and replace it by other linear motion mechanisms along with servo and stepper drives. This change was initiated quite successfully and the team is confident to implement this practice in future.

This year students had perfected task completion with lot of practice and were confident of making a good show in the competition. However it was unfortunate that rules were changed at the last moment by the organizers. Despite the last moment setback students put up a brave show in the competition but could not achieve the expected success.

ORION

Faculty Advisor: Prof. B. M. Pradhan



The team participated at the recently concluded Formula Bharat 2018 (23rd - 28th January 2018), held at the Kari Motor Speedway, Coimbatore. The ranks secured by team in different categories of competition are as;

Combustion Vehicle

- Engineering design: 2nd place
- Business plan: 4th place
- Endurance: 1st place
- Acceleration: 3rd place
- Autocross: 3rd place
- Best driver: Parth Mehta
- The 3rd place in acceleration was received by Orion Racing India's first female driver, Sanjana Dhulla.

Electric Vehicle

- Cost and sustainability: 2nd place
- Engineering design: 3rd place
- Business plan: 4th place

Team ONYX

Faculty Advisor: Prof. Prashant Jain

Team Onyx is a student-run Aero-Design club of the college devoted to building a community focused on the development of students interested in the field of Aviation and Aeronautics. It's a platform for students to exhibit their practical knowledge of aircraft designing and develop them as confident individuals for a stronger tomorrow.

This year, the team participated for the first time at the SAE Aero Design Challenge 2018, held in Chennai. The technical work was hence divided among four sub-teams: Aerodynamics, Structures, Manufacturing and Propulsion systems. The following is a brief review of each of the event participated and conducted by the team in 2018:

Multi Blade Drone Competition Jan 12 – 13, 2018

A Drone competition event, Multi Blade, was organized during MakerMela18 in association with Drona Aviation, Interview Buddy and Astral Pipes on 12th-13th January 2018. The event was a great success and the team got good response from the crowd of Maker Mela with over 250 participants.

Boeing National Aeromodelling Competition, March 15 -17, 2018

The team also participated in the Boeing National Aeromodelling Competition in two zones i.e. in IIT-Bombay on 28th December, 2017 and

IIT-Kanpur on 15th-17th March, 2018, mainly to focus on RC Pilot skills. The aircrafts built were in a very good flying conditions to learn RC Piloting as a beginner and flew well at the competitions for its flight time where the student pilots showed significant growth since last year.

SAE Aero Design Challenge, Chennai, July 13 – 16, 2018

The team mainly focused to compete at the SAE Aero Design Challenge 2018, held in Chennai in both the categories, i.e. Regular and Micro Class. Regular Class teams are required to design and fabricate a model aircraft with the purpose to develop the fundamental understanding of flight and the goal to lift as much payload as possible. Micro Class teams are required to make trades between two potentially conflicting requirements, carrying the highest payload fraction possible, while simultaneously pursuing the lowest empty weight possible.

For this, an 8-foot wingspan aircraft was fabricated for the Regular Class and a 4-foot wingspan aircraft for the Micro Class in which the team received the achievements by class per individual events as follows:

Micro Class

Technical Presentation- 1st place
Design Report- 3rd place
Overall- 14th place

Regular Class

Overall- 9th place
Payload lifted- 7kgs (Highest ever at the competition)

Future Plans

Further, the team plans to compete at the SAE Aero Design competition held in Texas, USA in the year 2019.



1st place in Technical Presentation (Micro Class) SAEISS Aero Design Challenge in Chennai, 2018

Industrial Visits

1. 20th Jan 2018, Godrej & Boyce Material Handling Division, Vikroli, accompanied by Prof. Shivangi Thakkar, Prof. Chitra Menon
2. 10th March 2018, Reliance Thermal Power Plant Dahanu, Thane Prof. Vijay Shinde, Prof. Atul Saraf

Departmental Responsibilities

Portfolios 2017-18

DEC Chairman: Prof. B. M. Pradhan
PG Coordinator CAD/CAM: Prof S. N. Bansode

PG Coordinator Energy Engineering: Prof Ramola Sinha

Core Areas Coordinators:

Design - Prof. B. M. Pradhan/Dr. Manoj Pawar

Thermal – Dr. S. r. Nikam

Manufacturing – Prof. S. Rajnarsinha

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
M Tech- CAD/CAM : Prof.S N Bansode
M Tech EE : Prof. Ramola Sinha

*Prof. Prashant Jain
Prof. Priyanka Patil*

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Autonomy committee:

Prof. V. V. Bhosale
Prof. Priyanka Patil
Prof. Abhijeet Karmarkar

Time Table Incharge:

Prof. Shivangi Thakkar
Prof. Atul Saraf

Dept. Alumni Incharge:

Prof. Prashant Yelpale
Prof. Priyanka Patil

Website Incharge:

Prof. V. V. Bhosale

Departmental News Letter:

Prof. Prashant Jain
Prof. Priyanka Patil

Placement Coordinator:

Prof. Sandeep Chopade
Prof. Ajay Gangrade,

Laboratory Coordinator:

Prof. Ramola Sinha,
Dept library in charge:

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

Editor

Dr. Ramesh Lekurwale, HOD

Executive Editors

Awakening



उदीर्ध्वं जीवो असुर्न आगाद,
अपप्रागात्तम आज्योतिरेति ।
आरैक्पन्थां यातवे सूर्याय,
आगन्म यत्र प्रतिरन्त आयुः ।

Arise ! O man. The bright dawn
heralds a new day. Its rosy lances have
opened the golden gates of the Sun.
And lit up the path of action. The
darkness of the night is over. We have
arrived where life is carried ever
forward on the path of progress.

Rig Veda - 1.113.16