

**PES'S**  
**MODERN COLLEGE OF ENGINEERING**  
**DEPARTMENT OF MECHANICAL ENGINEERING**

# THE ROYAL MECHANICAL

**DECEMBER 2018**  
EDITION VI

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## **VISION**

Be a leading centre of education in the field of mechanical engineering.

## **MISSION**

- To produce quality mechanical engineers.
- To inculcate good moral values in students.
- Prepare students to cater to diverse needs of the industry and society by collaborative efforts.

**Wherever you go, no matter what the weather, always bring your own sunshine.**

**- Anthony J. D'Angelo**

## From Principal's Desk

It gives me immense joy and I feel very proud at the same time to present you with this issue of the newsletter. I believe that this initiative by the students is one step forward towards inculcating a sense of scientific inquiry in the students who are also the future engineers of this country. The articles and the facts in this newsletter are worth reading. My best wishes to the students and faculty members of the department.

## From HOD's Desk

It is my pleasure to present you this issue of the newsletter of Mechanical Engineering department. It is a great initiative by the students and faculty members to make the youngsters aware of the scope of this beautiful branch. I think it has provided a platform for the students to express their technical views in broad applications of engineering. I hope, that this newsletter will provide you an insight into this field.

## PEO's of the Department

This initiative by the students and faculty is a stepping stone towards the growth of mechanical engineering. It not only has good information but the facts and pictures are worth the read. It also highlights the various events that are conducted by the department throughout the semester which helps in the overall development of the students.



**FAST FACT** - Half of all Oxygen comes from photosynthesizing phytoplankton, one-celled plants on the ocean surface.

## SAE Katta - Traffic Management

The SAE Katta was organized by SAE Collegiate Chapter- Students from Second Year. **Mr. Kunal Ganorkar** was the chief guest. He answered various questions from the students. He narrated how his personality got changed after his working in College SAE chapter, Traffic Parliament & further while doing Carpet business & job in Forbs Marshall. Also he shared with the audience, activity called “**Johari Window.**” The Johari Window is a technique that helps people better understand their relationship with others and also help them to improve themselves.



## Bodh Shivcharitra

On 5th September 2018, a guest lecture was organized by the members of MESA and PRERNA club. Initially the anchor introduced the guest lecturer Shree Dyaneshwar Purandare and felicitated him. He gave a short overview of the life of Shivaji Maharaj was given in the introduction. His struggle for swarajya was clearly highlighted. He explained us that whatever Maharaj achieved was because of his dicipline and love for his Swarajya. He left his luxurious life aside and fought for the welfare of the people. This knowledge was given to the Maharaj by his mother. Maharaj gracefully accepted it and mplemented it in his life. The concept of unity, no caste discrimination and care for the people was spread everywhere by Maharaj. Hence this kept our Indian culture bonded. He advised us to think for everyone by keeping our career perspective broad to developed our nation. To be a person who believes in facts ,no caste decimator and a caring person for making our nation a developed nation.





## Dignity of Labour

The activity was initiated by the S.A.E members and supported by M.E.S.A members under the leadership of MohitRuppeeja and Philip Tadke. Students did dusting of the instruments & tables from Heat transfer lab, Engine lab, SOM lab, Workshop, Fluid Mechanics lab and TOM lab.



## An Outlook on the life of A. P. J. Abdul Kalam

Initially the anchor welcomed HOD. Prof. S. Y. Bhosale sir and Prof. C. K. Gosavi sir felicitated him. Then, Student from SE-A Nagarjun Ujade gave informative speech on Dr. Kalam. He threw light on the earlier life period of Dr. Kalam. After that Prof. Anurag Giridhar sir introduced the documentary film on Dr. A.P.J. ABDUL KALAM. During Documentary Everyone became aware about Dr. Kalam's earlier struggled life, his childhood inspirations from his father Jallaluddin and his cousin



Shamsuddin. He got admission in MITE, Madras. Where he did aeronautical engineering. After that he did his training as a trainer in H.A.L. After that he had two opportunities to fulfill his dreams to contribute Towards the nation's development. One was Ministry Of Defence and other was to serve for nation in air force. But he got selected in National Defence Ministry. In Ministry Of Defence, he got the chance to show his abilities to work in field of defence. In 1980, he and his team successfully launched SLV-3. In 1982, he became a part of DRDO. After that he took on the project of production of Missiles called AGNI, PRITHVI, TRISHUL. In 1989, him and his teammates tested the AGNI Missiles. In 1990, he was awarded as PADMAVIBHUSHAN for his contribution in space.

## Gurupornima



Initially the anchor gave the program outline. The lamp lightning was done by the faculty members. They called upon the G.S. of MESA Mr. Tejas Phulpagar who gave brief information about MESA followed by Chairman of SAE who also gave brief information of SAE. The guest did the opening ceremony and announcement of both MESA and SAE team's. Anchor recited the poem on the occasion of Gurupournima named 'Guru'.

Prof. P. A. Chandak & Prof. S. Gosavi expressed their feelings about Gurupournima. Then the different post holders of MESA and SAE teams were felicitated by the department professors. Gifts from MESA To department staff were distributed.

## Katraj Dairy Visit

As a part of the curriculum, and for the partial fulfillment of the requirements for completion of the termwork of the course "Thermodynamics", SE Mechanical, a one day industrial visit was arranged at the Boiler section and Refrigeration section in Katraj Dairy, Katraj, Pune on Thursday, 6<sup>th</sup> September 2018. Katraj Dairy was incorporated in 1960 with an intension of providing an organized facility of milk collection for the village level farmers situated in Pune district. Katraj Dairy started with milk collection of about 30,000 liters per day in the first year of operation and today, has steadily grown to over 1.8 lakh liters per day and has a financial turnover of over Rs.150 crores. Katraj Dairy has achieved ISO 9001:2000 & HACCP certification from DNV in Oct. 2006 & maintained. In Oct. 2009 Dairy has achieved ISO 9001:2008 & HACCP 2006 Dutch Standard from Dr. Norskey Veritus. The Katraj dairy has an IBR Boiler equipped with many mountings and accessories. They use steam for various food processing works in packing section.



**FAST FACT - Wind can carry pollen grains as far as 3000 miles**



## Enginners's Day Celebration!



On 19th September 2018, an event was organized by the members of MESA and SAE to celebrate the auspicious days of teacher's day and engineer's day with the students and the faculty of our college. Various fun competitions were held and the events included an orchestra, MAD AD, Antakshari for the teachers and other miscellaneous events. The program began with the anch greeting everyone present and the traditional lighting of the lamp by our HOD prof.

S.Y.Bhosale. The students gave speeches on the teacher's day and there by showing their affection and faith in the faculty of our college. Further on there was a performance by Mr.Philip Tawade and group which was a melodious "Kawali" along with the symphony of the musical instruments. Prof.Sham sang a beautiful song , there was an active dumsheras and antakshari which included of 4 teams having 3 faculty members each. The grand closing was the MAD AD performance by Avinash and team also accompanied by Prof.C.K.Gosavi sir. The joyous afternoon came to an end by the vote of thanks by the anchors. This truly was light and fun filled evening for both the students and the faculty.

## NDT WORKSHOP!

On the 3 rd and 4 th of September 2018, an NDT (Non-Destructive Testing) workshop was organized for the second year students. The objective of this workshop was to give the students a hands-on and practical experience of what they learn from their textbooks. The speaker for this event was Mr. Saurabh Bhosale who is the Quality control head at a multinational company. The guest had divided the workshop in two parts. In the first part he introduced to the students to all the various techniques of NDT through a power point presentation he had prepared. The students were really hooked to the interesting videos and the aminationations shown by the guest. In the second half of the workshop the students were given a hands-on experience of the various NDT techniques like dye penetration test , radiographic tests, ultrasonic test and much more. This workshop concluded on a high note with students gaining a lot of practical knowledge and also an idea of a possible

**FAST FACT** - The coffee shrub commonly grows to height of **30 feet**.

## NO - HORN DAY!

Mr. Pradeep Ingale & Amruta Bhalchand madam- RTO Officers - came to our College to promote this social activity. SAE members volunteered in this activity along with the NSS team. All the students gathered in the college and proceeded towards Dnyaneshwar Paduka Chowk, Shivajinagar. The students along with the R.T.O officers split into 3 teams, thus interacting with the people waiting for the traffic signal to turn green. They also interviewed some Pune-kars and understood their perspective about such activities and the people proactively joined this campaign: No Honking Day. This activity started at 9am and lasted for 3 hours.



## Tech Spark 2018

About 50 participants presented their 20 exciting projects with simplistic yet effective explanations and PowerPoint presentations. They understood the underlying principles of the product which they explained to the visitors and guests with a lot of energy.



**FAST FACT** - Aroma of lavender has been shown to enhance sleep.



## Visit to Nirvara



On 3<sup>rd</sup> August 2018, a social activity under MESA was organized which had the main objective to inculcate moral values in the students participating in this activity. The students accompanied with Prof.A.S.Tumane visited Nirvana which is an old age home in Pune. The students were given a brief about the old age home. Later the students were introduced to the residents the students further spoke to the residents about their daily routine and various other things. The students

donated a few basic requirements and distributed sweets in the home which brought a bright smile on the face of the residents. The students concluded the visit with a feeling of self-satisfaction and with the wish to do more of the old age our nation.

## The Value of Chocolate

For the ancient cultures of Americas, chocolate or cacao was sacred plant. Its use began with Olmecs around 1200 B.C. and continued with Maya and Aztec. The Aztec restricted drinks made from cacao seed to ceremonial use and consumption by high ranking adult males, priests, government officials and warriors. Meso-americans recognised the general properties of cacao (later called cocoa) and used it to treat intestinal complaints, to calm the nerves and as a stimulant. Mixed with maize and other herbs, cacao treated fever, shortness of breath, and heart palpitations. Cacao flowers were ingested to treat fatigue, cocoa butter, the



creamy fat in beans, soothed burns, irritated skin and chapped lips. European explorers brought cocoa and chocolate to western cultures where it became very popular as a delicacy and as a medicinal plant. Its assigned scientific genus name, Theobroma means “food of the Gods.” Today's study shows that cacao seeds contain more than 300 different chemical compounds. These include the stimulant caffeine as well as Theobromine, an alkaloid that has calming effect on the brain and an energizing effect on the nervous system. Cacao also contains compounds that tend to reduce depression and may induce a slight sense of euphoria, as well as powerful anti-oxidant compounds that may help protect against cancer and heart diseases. Some medical professionals even recommend a daily dose of about an ounce and a half of dark chocolates for its cardiovascular benefits.



## SAE - TIFAN

This event was organized by MESA under the guidance of Prof. P.A.Chandak on Monday 23<sup>rd</sup> of July 2018. This event was organized to give the students an idea about TIFAN. The guest lecturer for the event was alumni Mr. Hariprasad who is in the Design Department of Cummins India Ltd. He started off by giving a slight introduction of SAE which is an international organization started in 1994. In 2010 the SAE an Off-Highway board was established which catered to the aspect of mobility engineering related to all vehicles and equipment operated in rough terrain, mining, agriculture, construction and defense. It was



termed as TIFAN which stands for “Technology Innovation Forum for Agriculture Nurturing”. Since its inauguration the board has been instrumental in focusing on the common issues related to Technologies of tomorrow and talent pool and organized various events. Namely “FINE2010”- 2 weeks of induction programs of college faculties in Off- Highway companies. ”EDU Meet 2013”- to aspire women for Off-Highway industries. Our esteemed guest then told the students more about the first ever student competition named as TIFAN. This competition is aimed towards helping students understand the problems faced in the agricultural fields and find innovative and technically advanced methods. It will help the students connect with each other on an intellectual and technical platform which will help them improve their knowledge and find technical solutions too many problems in our nation. Mr. Hariprasad concluded his lecture leaving the students with an urge to participate in more upcoming events of the Off- Highway board of the SAE.

## Visit to Bhira - 2018



An industrial visit was arranged for the Third year students of Mechanical Department (Div A,B and C) for the subject Turbo machines. **Bhira Hydroelectric Project** is an electricity generating complex in Bhira, [Maharashtra](#) state, India. It generates power using water from the nearby [Mulshi Dam](#). Bhira lies approximately 150 km from [Mumbai](#). Its construction was completed in 1927. Students came to know basic working of hy-

dro power plant, working principles of turbine. Also they explained the geometric dimensions of penstock, gate valve, its working through hydraulic system. They also showed us the generator room, control room, draft tube and at the end they showed the working of plant through animated video on computer. It is rightly said that “See & know’ is better than ‘read & learn’. Students have got real applications of turbine and working after this visit. They got a chance to transfer their theoretical knowledge to practical implication.

## SAE - TIFAN

A program on World Yoga Day was organized by the students of the college's MESA committee, on 21<sup>st</sup> June, 2018. The program aimed at promoting Yoga which is a physical, mental and spiritual practice originating in India, which helps to enlighten one's soul and body. Three members from Bihar School of Yoga graced the event with their presence. Then each of the guests were felicitated by HOD sir Prof. S. Y. Bhosale, Prof. C K Gosavi and Prof. Patil sir with a sapling. There were more than 50 participants which included students and teaching staff members. Mrs. Dharti Paithankar explained the importance and need of practicing yoga in everyday life of a person. She then proceeded with the yoga session by telling the name of the asanas, its effect on one's body and also the time duration for practicing the particular asana. Mr. Mahendra Kadam and Mr. Sunil Kochar demonstrated the asanas and the participants followed it. The session included asanas like Taddasana, Suryanamaskar, Pranaayam, Yog Nidras, TiriyakaTaddasana. Shavasnaa, Kati Chakrasana followed by "OM" & "Shanti" Mantra.



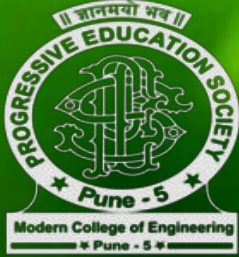
## Why does Leaves change colour??



As days grow shorter and temperatures cooler, deciduous trees prepare for winter dormancy. Lacking sufficient light and water, photosynthesis shuts down, and trees must live off food stored during the growing season. In spring, leaves lay the ground work for their demise. A special layers of cells forms at the base of each leaf, called the abscission or separation layer. Its work is to transport the water to the leaf and take food, created by photosynthesis, back to the tree. In au-

turn, the cells of this layer begin to swell and the bottom of this layer forms a cork-like substance that eventually cuts-off all transfer between leaf and tree. Meanwhile, the top of layer begins to disintegrate, making it easy for the leaf to detach. As photosynthesis ceases, the leaves lose their chlorophyll, which gives them their green color. Without chlorophyll, other colors emerge. Yellow and Orange, for example, are normally present in the leaves but are overshadowed by chlorophyll. Maple-leaf red occurs because glucose remains when photosynthesis shuts down. Drab oak-leaf brown represents the wastes left in the leaves.





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