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MECHAZINE

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Hope Foundation's
Finolex Academy of Management and Technology, Ratnagiri
(Approved by AICTE, Recognized by DTE, Affiliated to University of Mumbai)


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- Dr. Milind S. Kirkire (Dean, Academics and HoD)
- Dr. Shashikant S. Goilkar (Dean, R & D)
- Dr. Milind S. Yadav (Associate Professor)
- Mr. V. MuraliMohan (Associate Professor)
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- Mr. Hemant V. Chavan (Assistant Professor)
- Mr. Amar S. Yekane (Assistant Professor)
- Mr. Jayesh S. Anavkar (Assistant Professor)
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- Mr. Vikram V. Nagale (Assistant Professor)
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- Mr. Rushikesh M. Rasal (Assistant Professor)
- Mr. Abhijit M. Date (Assistant Professor)
- Mr. Pratik R. Kamble (Assistant Professor)
- Mr. Malhar D. Malushte (Assistant Professor)
- Mr. Mandar S. Padhye (Assistant Professor)

Staff Members

- Mr. R. V. Utekar
- Mr. L. G. Patil
- Mr. A. V. Nhivekar
- Mr. A. A. Lingayat
- Mr. V. V. Lohar
- Mr. D. Y. Mestry



*One child, one
teacher, one
book, one pen
can change the
world.*

Malala Yousafzai

Contents

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- Department Mission
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VISION

- To become a centre of quality education by developing competent engineers who can address challenges in the field of mechanical engineering.



MISSION

- To establish state of the art facilities in department enabling effective training of students and creating research environment
- Evolve competent technical professionals through effective delivery of curriculum and contents beyond, which fulfil the needs of industry and society
- To inculcate sense of social responsibility and human values amongst the students



PROGRAM SPECIFIC OUTCOMES

- Students will be able to investigate problems in the fields of design, thermal and manufacturing processes through application of statistical techniques.
- Students will be able to provide computer-based solutions to Mechanical and allied industries.



PROGRAM EDUCATIONAL OBJECTIVES

- To prepare the stakeholder to exhibit leadership qualities with demonstrable attributes in lifelong learning to contribute to the societal needs.
- To make ready the stake holder to pursue higher education for professional development
- To help the stakeholder to acquire the analytical and technical skills, knowledge, analytical ability attitude and behavior through the program
- To prepare the stakeholders with a sound foundation in the mathematical, scientific and engineering fundamentals
- To motivate the learner in the art of self-learning and to use modern tools for solving real life problems and also inculcate a professional and ethical attitude and good leadership qualities
- To prepare the stakeholder to be able to design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

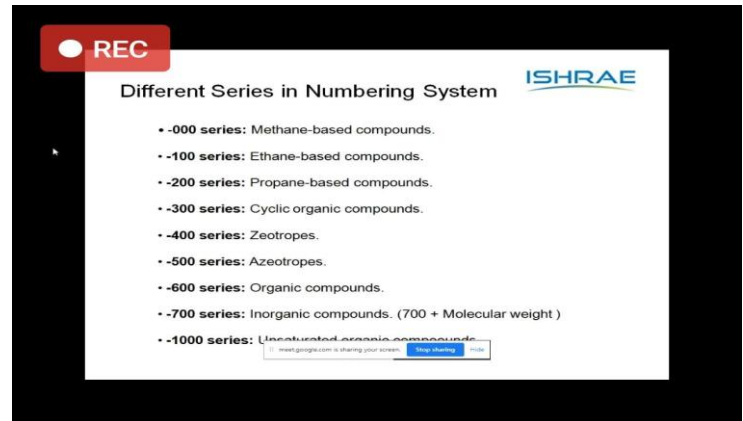
Programs Organized by Department

ISHRAE Installation Ceremony 2020-21

The Department of Mechanical Engineering established the Indian Society of Heating Refrigeration and Air Conditioning Engineers Students Chapter (ISHRAE) for the society year 2020-21 on August 14th, 2020.

The ceremony was conducted in presence of Dr. Kaushal Prasad (Principal), Dr. Milind S Kirkire (Dean Academics, Head of Mechanical Dept.), Prof. V. S. Bagade (Faculty Advisor ISHRAE), Prof. S. U. Mayekar (Faculty Advisor ISHRAE), the Faculty members of the department and ISHRAE THANE Chapter Office Bearers— Mr. Manish Gulalkari (President ISHRAE Thane Chapter), Mrs. Manjusha Deshpande (Ex-President), Mr. Nandakumar Mahajan, Ms. Hemlata Patil (Students Activity Chair), Mr. Shankar Sapaliga, Mr. Abhijeet Kamat, Mr. Saurav Patil, Mr. Charudatta Devastale. We were also blessed with the presence of Prof. Vaibhav Dongare (Faculty Advisor, RMCET), Prof. Datta Wakshe (Faculty Advisor, PCET), Prof. Mahesh Rajwade and Prof. Cleto Pareira (Faculty Advisors, DBIT), Prof. Momin Umais and Prof. Kedar Yeole (Faculty Advisors, APSIT) and Ms. Sheena Fernandes (Student President, DBIT).

He discussed the numbering system used for the various compounds and elaborated on the ASHRAE Numbering System and which refrigerants we have to use for a particular application.

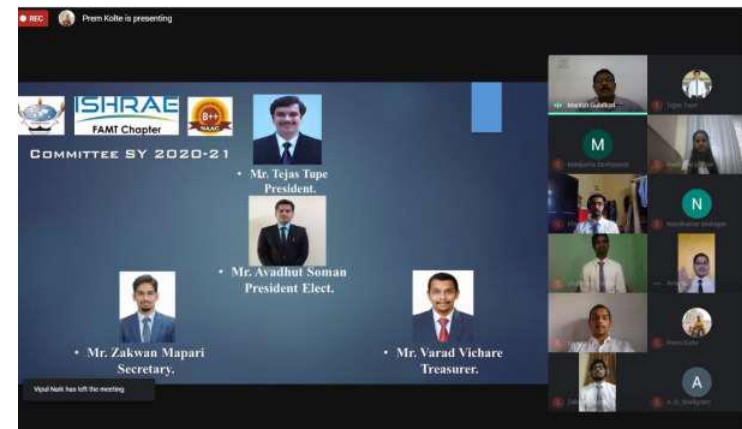


A Quiz on Independence Day

ISHRAE FAMT Chapter conducted a National Level Quiz on the occasion of Independence Day to remember and offer tribute to the Great Soldiers and Freedom Fighters of our Great Nation.

The quiz was conducted from 15th August 2020 to 21st August 2020 and received active responses. A total of 301 participants attempted the quiz. It was conducted through Google forms. An e-certificate was awarded to the participant with a score of 60% and above.

The quiz was coordinated by FAMT ISHRAE student members under the guidance of the Faculty Advisor Prof. V. S. Bagade and Prof. S. U. Mayekar, Dr. M. S. Kirkire, Dean Academics and Head of Mechanical Engineering Department.



Online ISHRAE Chapter Installation ceremony by FAMT

A Technical Talk on Refrigerants: Past, Present & Future

The ISHRAE FAMT Chapter had organized a technical talk on Refrigerants: Past, Present & Future on the occasion of the 4th Installation Ceremony on 14th August 2020.

Mr. Avinash Shaligram delivered the talk on various types of refrigerants, their effects, and appliances. He explained the transition in the refrigerant industry and its future. The refrigerant industry has undergone a huge change in the last few years and will continue so that we would be getting good refrigerants in the future. As the HVAC field has grown, the refrigerants are a very important part of this field at present.



Quiz Certificate

Programs Organized by Department

Webinar on Career Opportunities in the Steel Industry

The Department of Mechanical Engineering has planned webinars for the students by educational and industry experts. Mr. Sachin Patil (Manager in the well-known steel industry) delivered Webinar Career Opportunities in Steel Industry, on Sunday 18th October 2020.

Mr. Sachin Patil has completed his MTech. (Metallurgy) from IIT, Bombay and currently working with well know steel industry in Raigad. He has 6.5 years of industry experience as an R&D Manager in the domain of steel technology. the webinar started with felicitation and introduction of keynote speaker Prof. Dr. M. S. Kirkire (HoD, Mechanical Engineering).

Mr. Sachin Patil, during his session, explained how to build a career in the Metallurgy sector. He explained the scope, basic concepts and knowledge about steel technology. He discussed many industry applications from steel process industries. The take away of the talk was to which content of the mechanical branch is important for making a career in this specific domain. He shared his experience of GATE preparation and interview at his organization, and also explained the skillsets required for a career in the steel sector.

From the department, 46 students participated in this webinar. Prof. P. R. Kamble, Assistant Professor, Mechanical Engineering Department organized this event.

The flyer is for a webinar titled "The mettle for Mechanical Engineers in the steel Industries" organized by the Department of Mechanical Engineering at Finolex Academy of Management & Technology, Ratnagiri. The speaker is Mr. Sachin Patil, M. Tech (Metallurgy), IIT Bombay, Assistant Manager - R & D (JSW Steel). The date is 18.10.2020 at 6PM. The meeting link is <https://meet.google.com/gpv-pdyv-ohi>. The flyer also mentions it is organized by the Department of Mechanical Engineering and lists contact information for Mr. Pratik R. Kamble and Dr. Milind S. Kirkire. It is a project by FINOLEX.

K-12 Activity for Primary School Students

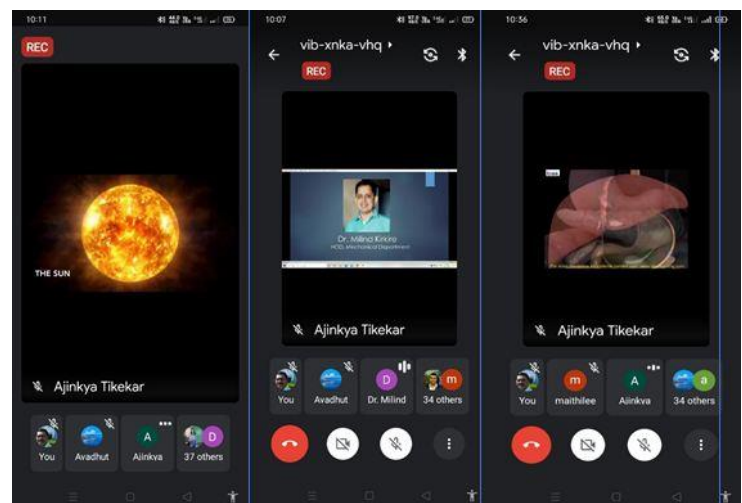
ISHRAE FAMT Chapter conducted a K-12 Activity for 5th to 7th standard students on 8th November 2020 through Google Meet. In this online session, four videos related to the syllabus of the school students were presented so that they can understand the concepts clearly.

ISHRAE President-Elect. Avadhut Soman introduced ISHRAE FAMT Chapter and the activity. It was followed by encouraging words from Head of Mechanical Department Dr Milind Kirkire. Then, the main activity resumed.

In the first video, students learnt about the planets in our solar system and in the second video they learned about Planet Earth in-depth, its environment and its features. The third video gave information about speed and its types and the last video was related to the human body – the digestion process. In the end, Ms Maithilee Jadhav presented the vote of thanks.

In total 40 students from Poddar International School (Yavatmal & Ratnagiri), Rajashri Shahu Vidyalaya (Pune), Loreto Convent School, Mahatma Gandhi Vidya Mandir (Satara) and nearby schools of Ratnagiri took part in this session. The participants received the certificate of participation from ISHRAE FAMT.

The program was coordinated by FAMT ISHRAE student members under the guidance of Faculty Advisors Prof. Vidyasheel Bagade and Prof. Shodhan Mayekar, Dean Academics and Head Mechanical Department Dr M. S. Kirkire, and Dr Kaushal Prasad, Principal.



Dr. Milind Kirkire guiding students through the activity

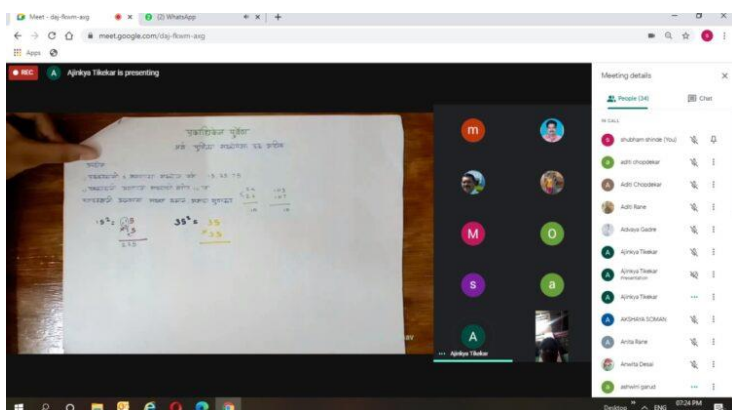
Programs Organized by Department

K12 Activity – “Vedic Mathematics”

ISHRAE FAMT Chapter, Mechanical Engineering Department conducted an online K-12 Activity on “Vedic Mathematics” on 18th November 2020 on Google Meet. The session started with an introduction and address by the Head of Mechanical Engineering Department. In this session, students learnt how to calculate by using Vedic mathematics through two videos.

The objective was to enhance the interest of students in mathematics by teaching them Vedic mathematics. Thus, they can apply this knowledge and easily solve any mathematics problem. Through these videos, students were explained the first two ‘sutras’ of Vedic mathematics: “Ekadhikena Purvena” and “Nikhilam Navatashcaramam Dashatah”. Ms Maithilee Jadhav and Ms Aditi Chopdekar explained these ‘sutras’ to the students. The session ended with clearing the doubts of students. Ms Maithilee Jadhav concluded the session with a vote of thanks.

In total 34 students from the nearby schools of Ratnagiri participated in this activity. Students were also provided with printable e-Certificates. This program was coordinated by FAMT ISHRAE student members under the guidance of Faculty Advisors Prof. Vidyasheel Bagade and Prof. Shodhan Mayekar, Dr M. S. Kirkire, Dean Academics and Head of Mechanical Engineering Department, Dr Kaushal Prasad, Principal.



ISHRAE student teaching Vedic mathematics

Faculty Achievements

FDP/STTP attended

- **Dr. Milind S. Kirkire**

- Completed FDP on “Operations Management” organized by AICTE Training and Learning (ATAL) Academy
- Completed FDP on “Introduction to Artificial Intelligence” organized by Coursera (Online)

- **Dr. Shashikant S. Goikar**

- Completed FDP on "Organizational Behavior" organized by Mizoram University Aizawl
- Completed FDP on "Design thinking" organized by College of Engineering, Trivandrum
- Completed FDP on “Alternate Fuels” organized by Engineering College Bikaner
- Completed FDP on “Electric Vehicles” organized by PSG College of Technology, Coimbatore
- Completed FDP on "Novel Materials" organized by Government college of engineering, Thanjavur
- Completed FDP on "Thrust Areas in Mechanical Engineering" organized by Geethanjali Institute of Science & Technology, Nellore, Andhra Pradesh
- Completed FDP on "Accreditation to Engineering & Professional Ethics (AEPE - 2020)” organized by Government College of Engineering, Nagpur
- Completed STTP on “Industrial Internet of Things” organized by NITTE Meenakshi Institute of Technology, Bangalore
- Completed STTP on "Modeling and Analysis using MATLAB and Python for Mechanical Engineering application" organized by VNR Vignana Jyothi Institute of Engineering and Technology Hyderabad, Telangana
- Completed STTP on “Advances in Additive Manufacturing” organized by Yeshwantrao Chavan College of Engineering, Nagpur
- Completed STTP on “Smart Manufacturing – Opportunities & Challenges” organized by St. Joseph’s College of Engineering, Chennai

- **Dr. Milind S. Yadav**

- Completed FDP on “Alternative Fuels” organized by Don Bosco Institute of Technology
- Completed FDP on “Solar Energy Applications” organized by Hindusthan College of Engineering and Technology, Coimbatore

- **Prof. V. Murli Mohan**

- Completed FDP on "Research Techniques & Sustainable Development in Mechanical Engineering" organized by St John COE, Palghar
- Completed STTP on "Recent Trends in Artificial Intelligence and Soft" organized by R.M.D.Engineering College, Thiruvalluru TN

- **Prof. Vikram S. Chougule**

- Completed STTP on "BRIDGE ENGINEERING: Design, Execution, Maintenance & Rehabilitation” organized by Sinhgad Technical Education Society’s
- Completed STTP on "RESEARCH IN ENGINEERING - A Way Forward” organized by A. P. Shah Institute of Technology, Thane

Faculty Achievements

- *FDP/STTP attended*
- **Prof. Vidyasheel S. bagade**
 - Completed STTP sponsored by AICTE – AQIS on “Recent Trends in Energy Management and Audit” organized by RJIT, Mumbai
 - Completed FDP on "Energy Engineering" organized by All India Council for Technical Education (AICTE)
 - Completed FDP on "Artificial Intelligence" organized by MES' Institute of Management and Career Courses (IMCC)
 - Completed FDP on "Recent Advances in Mechanical Engineering: A Research Perspective" organized by MGIT, Hyderabad
- **Prof. Gayatri J. Abhyankar**
 - Completed AICTE sponsored QIP STTP on "IoT and Its Applications"
 - Completed FDP on “Exploring The Dimensions of Innovation, Incubation and Emerging Technologies to Embrace
- **Prof. Abhilasha S. Jadhav**
 - Completed STTP on "BRIDGE ENGINEERING: Design, Execution, Maintenance & Rehabilitation" organized by Sinhgad Technical Education Society's
- **Prof. Sumit S. Malusare**
 - Completed FDP on “Recent Trends in IoT” organized by AICTE-ATAL Academy
- **Prof. Amar S. Yekane**
 - Completed FDP on “Leadership & Excellence” Organized By Indian Institute of Plantation Management, Bangalore
 - Completed STTP on “Global Navigation Satellite System” organized by IIRS Dehradun
- **Prof. Jayesh S. Anavkar**
 - Completed FDP on “Novel Materials” organized by Pillai college of Engineering
- **Prof. Mahadev L. Naik**
 - Completed FDP on “3D Printing & Design”
 - Completed STTP on “Advances in Additive Manufacturing”
 - Completed STTP on “Outcome Based Education & NBA”
- **Prof. Sachin S. Gurav**
 - Completed FDP on “Electric Vehicle” organized by FCRIT, Navi Mumbai
- **Prof. Rushikesh M. Rasal**

- Completed FDP on “3D Printing & Design” organized by Osmania University College of Engineering through ATAL Academy
- Completed STTP on “3D Printing merges with Nanomaterials in Medical Applications” organized by

Faculty Achievements

Book publication

- **Prof. Amar S. Yekane**

- Published a chapter on “Industry 4.0 and Advanced Manufacturing” in Springer book chapter

- **Prof. Abhijit M. Date**

- Published a chapter on “Heat Transfer Analysis of Clay Pot Refrigerator Adopting Curvature Effect/Advances in Air Conditioning and Refrigeration” in Springer book chapter
- Published a chapter on “Capillary Tube Flow Characterization of a Trans critical CO₂ Cycle Using Separated Two-Phase Flow Model/Advances in Air Conditioning and Refrigeration in Springer book chapter
- Published a chapter on “Some Investigations of External Shading Devices on Thermal and Daylighting Performance of a Building/Advances in Energy Research in Springer book chapter

Paper publications

- **Dr. Shashikant S. Goilkar**

- Published a reviews paper on “Design of Air Conditioning System of The School for Better Indoor Air Quality” in National Conference
- Published a paper on “Overview of machining techniques useful for achieving superior quality of machined components” in National Conference

- **Prof. Amar S. Yekane**

- Published a paper on “Casting Yield Improvement Using Modeling and Simulation Technique” in International National Conference

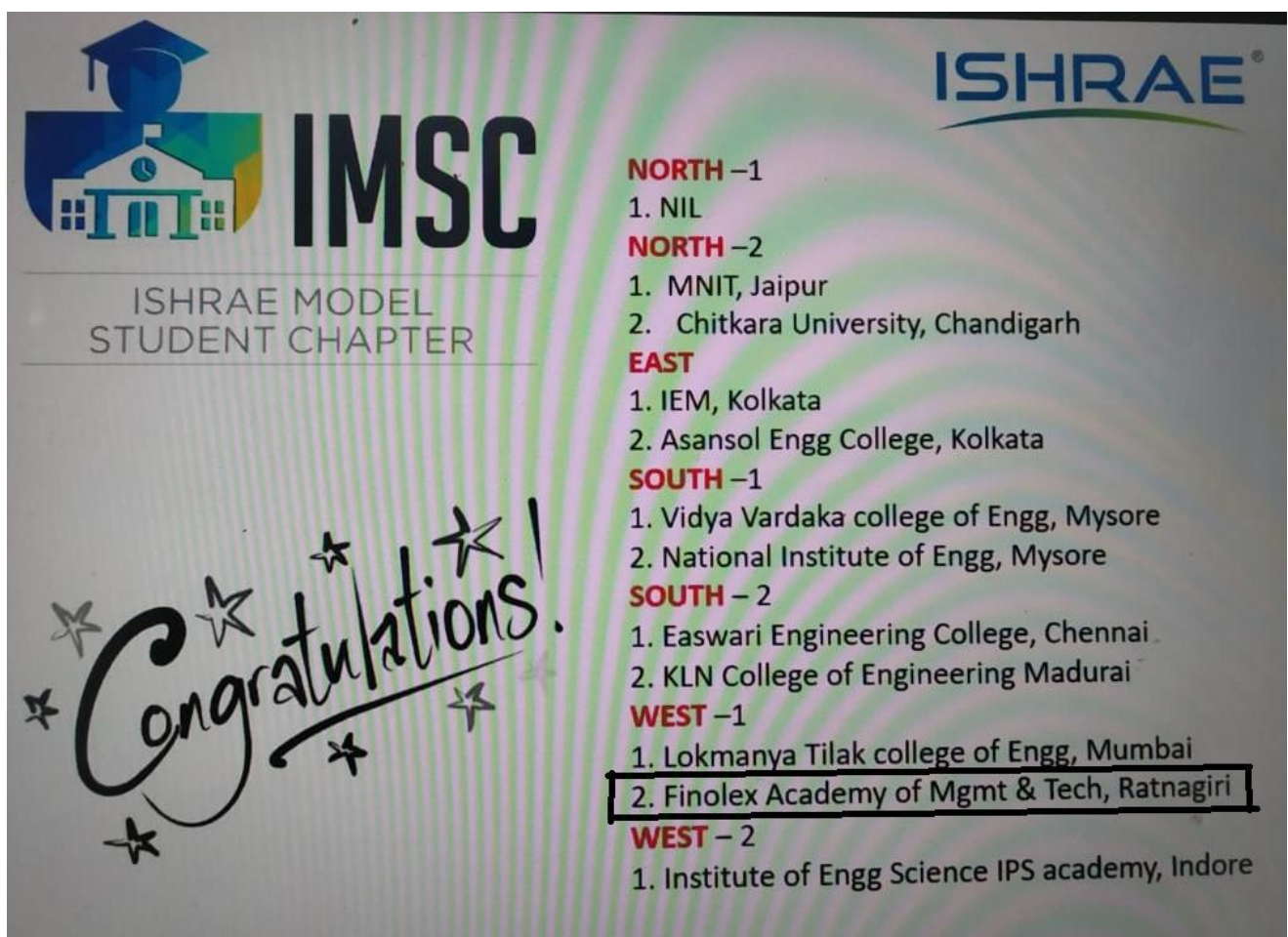
Expert Lecture

- **Dr. Milind S. Yadav**

- Delivered Expert lecture on” VCR Engine Optimization Techniques” in STTP sponsored by GUJCOS, DST, Govt. Gujarat and organized by A Constituent College of CVM University

Awards

Finolex Academy of Management & Technology received Best ISHRAE Model Student Chapter Award



ISHRAE Student Chapter of the Department of Mechanical Engineering has won Best Model Student Chapter for best performance in student activities and student participation in the various competitions conducted by ISHRAE in last three years. FAMT ISHRAE student chapter has won the Best ISHRAE model student chapter from the west zone which consists of a total 154 student chapters of various Engineering colleges of Mumbai, Thane, Pune, Aurangabad, Kolhapur Sangli, Nagpur, Nasik, Goa, Indore, Bhopal, Ahmedabad, Surat, Vadodara, and Vapi.

ISHRAE (Indian Society of Heating Refrigerating and Air conditioning Engineers) is a nonprofit organization operating all over India, with Head Quarter in Delhi. It is led by a team of elected officers, who are members of the Society, working voluntarily and collectively called the Board of Governors.

FAMT ISHRAE Student Chapter has been installed in the year of 2017 for the students of Mechanical Engineering and ever since the students have participated in various activities and competitions under the guidance of ISHRAE Faculty Advisor Prof. Hemant V Chavan.

ISHRAE Student Chapter encourages the students to opt for careers in the HVAC&R industry. Knowledge dissemination is done through seminars, quiz contests, plant, and site visits. K-12 initiative of ISHRAE is focused on school students' contests, in making them aware of subjects like energy conservation and environmental concerns through drawing competitions, poster design, quiz, and planting of trees. Emphasis on STEM is stressed to inculcate a scientific fervor & help develop these young children into responsible citizens.