

# YANTRADNYA

THE NEWSLETTER OF  
DEPARTMENT OF MECHANICAL ENGINEERING

## ***Vision***

Excellence in Mechanical Engineering for global competency and social welfare.

## ***Mission***

- To develop professional skills through student centric activities and the industry interactions.
- To prepare students for higher education, research and innovation.
- To make globally competent and socially committed Mechanical Engineers with morals and ethical Values.

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# FROM HOD DESK



**Dr V.R. Deulgaonkar  
(Head of Department)**

*Department of Mechanical Engineering at MMCOE is one of the best departments in Pune. Started in 2006, we persistently seek and adopt innovative techniques to improve the quality of education and strongly believe in outcome-based education philosophy. We are affiliated to prestigious Savitribai Phule Pune University with an intake of 120 seats at undergraduate level. We believe in creating value for our stake holders. In addition to enriched academics, we impart industry demanded skills from time to time. Skill development program in our department is one of the most unique activities. Through this program, we impart latest skills that are needed in industry. Technical, professional, social, interpersonal aspects of student personality are some of the key attributes that are honed at our department*

*Excellent curricular, co-curricular, extra-curricular and extension activities are our performance indicators. It is because of these reasons our mechanical department is accredited by National Board of Accreditation (NBA). The journey of student learning from fundamentals to advances in mechanical engineering at our department is accompanied by several value-added activities. Practical attributes such as problem solving, design & development, investigation of complex problems, usage of contemporary (modern) tools, excellent communication, team and individual work, finance & project management, societal aspects and ethics are imparted through different activities at department. We always work in mission mode to deliver best to our students in such a manner that 100% placement is a by-product of our relentless efforts.*

*Experiential learning, life-skills needed in today's globalized society are imparted through several means as internships, industry projects and professional chapters. Student chapters as SAEINDIA (BAJA, Supra and Effi-cycle) ISHRAE, ASHRAE, IE(I), ISTE etc. at our department provide a platform to students for developing their professional skills. Our students participate in technical and cultural competitions at national and international levels.*

*Mechanical Engineering is one of the most versatile branches of engineering. Mechanical engineers are employed not only in core mechanical sectors but also in software industries. With the advancements in technologies of AI, ML, IoT, Data Science and Electric Vehicles, opportunities for mechanical engineer are widened. Mechanical engineers are inseparable from industries including automotive, aerospace, biotechnology, computers, robotics and the list is endless.*

# EDITORIAL

*It brings me immense joy & pleasure to introduce the 12<sup>th</sup> edition of the departmental newsletter 'YANTRADNYA'. All the creative energies that came on to this platform in the form of faculty experts & students are finally presenting a replica of their enthusiastic hard work through this extravaganza that has come out so organically*

*All the events conducted throughout the year were perfectly planned & executed & the overwhelming response it received said it all! I am grateful for all the support YANTRADNYA has received throughout the year in every possible way from the faculties & Students. I hope the readers of the newsletter have a wonderful reading experience & wish this year's edition too receives your love*

*This work is a result of the various phases from planning to data collection to segregation to organization to proofreading to designing. I take this opportunity to express my gratitude to our HOD Dr. V.R. Deulgaonkar & Mrs. Mayuri P. Rode for their constant assistance & guidance. Last but not the most important, you, the readers, YANTRADNYA would not have been what it is today without your aspirations expressed in words.*



**Mrs Mayuri Rode**  
**Chief Editor**



**Gaurav Sonavane**  
**Student Chief Editor**

## DEPARTMENT ACTIVITY

- MMCOE was organized "International virtual conference on Emerging Trends in Engineering and Management Sciences"(ICETEMS)\* on 23-24 July 2021. Selected papers will be submitted for publication in (Web of Science Indexed, Scopus indexed journals).
- Marathwada Mitramandal's College Of Engineering Department Of Mechanical engineering and Dr. Vishwanath Karad MIT World Peace University Kothrud, Pune School Of Mechanical Engineering Jointly organized Four Days Workshop on "Role of Mechanical Engineers in Emerging Technologies" on 11<sup>th</sup> to 14<sup>th</sup> August 2021.



Sr. No.	Memorandum of Understanding (MoU)	Date
1	SETCO SPINDLES (world's largest independent spindle manufacturer and rebuilder)	26/11/.2021
2	Plutozy (placement training activities.)	14/10/2021

## ❖ Guest Lectures

- Mr. Anand Bhise (Director, Mechatol Product Engineering Solutions Pvt.Ltd.) has delivered an expert Session on 'CAD/CAM opportunities for budding Engineers' on 13/01/2022.
- Dr. Tushar Jadhav (Director, REUIM, and NICMAR) has delivered an expert session on 'Project Management: Unexplored Sector by Mechanical Engineers' on 24/11/2021.
- Ms. Vaishali Dabke (Project Manager, BKD Educational Services, Goethe-Institute, Max Mueller) has delivered an expert session on 'Information Session by DAAD German Academics' on 24/08/2021.
- Mrunmayee Shivapurkar (Project Manager, BKD Educational Services, Goethe-Institute,Max Mueller) has delivered an expert session on 'Taster Class for German as a Foreign Language' on 25/08/2021.
- Dr.K.R.Patil (Professor MMCOE) has delivered an expert session on 'Introduction to Electric Vehicle and scope in India' on 18/11/2021.
- Mr.Nitin Wakode,Deccan IT Technologies has delivered an expert session on 'CAD/CAM CNC Programming MasterCam' on 16/11/2021.
- Mr. Anand Bhise (Director, Mechatol Product Engineering Solutions Pvt. Ltd.) has delivered an expert Session on 'Role of GD&T in Smart Manufacturing 4.0' on 18/09/2021.
- Mr. Manoj Potdar (Director -MCAD Solutions) has delivered an expert session on 'Career Opportunities in Automotive industry' on 28/08/2021
- Mr. Sambhaji Barse (SAP consultant, Global Tech Solutions) has delivered an expert session on 'Career in SAP and Its opportunities' on 23/08/2021.



### ❖ Faculty Achievements

- Dr. V.R.Deulgaonkar, has been included in the prestigious AD (Alper-Doger) Scientific Index 2021, Which evaluates universities, countries, regions, world, basic fields and branches based on the studies Of Scientists in the last 5 years. This analysis has included the scientific profiles of up to 300 verified Citations. This ranking is a unique productivity status which includes nearly 210 countries and more than 13600 universities and nearly a million academicians.
- Dr.K.R.Patil honoured with BOS Member in Automobile Engineering of RIT, Rajaramnagar, Sangli.
- Dr.K.R.Patil honoured with 'Best Innovations Teacher Award' from National Institute of Innovation Entrepreneurship Management (NIIEM).
- Dr.K.R.Patil nominated as 'Mentor' for 'Abhyuday IIT Bombay'.
- Dr.V.W.Bhatkar had given expert talk on 'Recent Trends in Refrigeration and Air Conditioning' for State Level one week Faculty Development Program approved by MSBTE,Mumbai on 25/05/2021
- Dr.V.B.Bhatkar work as a Jury for ISHRAE, National Level HVAC&R Hackathon 2021-22.
- Dr.V.W.Bhatkar Technical committee member and reviewer for '15th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics (HEFAT) organized by Elsevier Amsterdam during 26 to 28 July 2021.
- Prof.P.K.Tamkhade has been awarded Ph. D. Degree in Mechanical Engineering by Savitribai Phule Pune University, Pune.
- Mr.P.K.Tamkhade,Mr.V. A. Naikwadi for granting an International Patent in Australia and USA on "Variable Flow Radiator System."-AU2021105195A.
- Mr.P.K.Tamkhade,Mr.A.D.Desale,Mr.A.B.Gholap,Mr.V. A. Naikwadi Published Patent on "Design and development of wheel alignment and balancing prediction device for modern automobiles"with application No. 202121034967 published 04/03/2022
- Mr.R.S.Yadav published patents on AI and ML in traffic surveillance system. Published On 11.06.2021, Date of filing - 14.05.2021.
- Mr. Rahul Yadav has been awarded the 'Best Research Scholar Award for the DK International Research Foundation (DKIRF) - International Excellence Awards Convocation 2021.
- Mr..R.S.Yadav Published Patent on " An E-Cradle enabled with machine learning and IOT for child." With application No. 202221007065A published 03/08/2021
- Mr..R.S.Yadav Published Patent on "A System and method for facial recognition using micro drone" With application No. 202131029128 published 29/06/2021
- Mr.R.S.Yadav Published Patent on "A System to analyse the effectiveness of E-Learning/ Virtual Learning" with application No. 202111051515 published 10/11/2021.

## ❖ Faculty Publication/Patents

Sr. No.	Publication details	Faculty
1	Failure analysis of Taper-Lock bush used in aggregate batcher plant for construction applications, Engineering Failure Analysis, volume 130, Dec 2021, <a href="https://doi.org/10.1016/j.engfailanal.2021.105753">https://doi.org/10.1016/j.engfailanal.2021.105753</a>	Dr. V.R.Deulgaonkar
2	Design and Analysis of Foldable Vehicle using Finite Element Simulation, International Journal of vehicle structures and systems, 13(3), doi: 10.4273/ijvss.13.3.25, <a href="https://www.proquest.com/openview/4fa6c7f8400f02c95db2c5462417a305/1?pq-origsite=gscholar&amp;cbl=60382">https://www.proquest.com/openview/4fa6c7f8400f02c95db2c5462417a305/1?pq-origsite=gscholar&amp;cbl=60382</a>	Dr. V.R.Deulgaonkar
3	Dynamic simulation of refrigeration system using Dymola behavior modeling,JP Journal of Heat and Mass Transfer,Volume. 25, pp. 99–107, 2022, <a href="http://dx.doi.org/10.17654/0973576322006">http://dx.doi.org/10.17654/0973576322006</a>	Dr. V. W. Bhatkar
4	Design of vertical fire tube boiler using IBR code and FEA analysis, International Journal of Nanotechnology, Volume-18, Issue 11-12, <a href="https://www.inderscienceonline.com/doi/abs/10.1504/IJN T.2021.119226">https://www.inderscienceonline.com/doi/abs/10.1504/IJN T.2021.119226</a>	Dr. V. W. Bhatkar
5	Experimental Study of Multistage Indirect Evaporative Coolers, Journal of Heat and Mass Transfer, Vol. 24, No.1, pp. 69–77, <a href="http://dx.doi.org/10.17654/HM024010069">http://dx.doi.org/10.17654/HM024010069</a>	Dr. V. W. Bhatkar
6	An Experimental Analysis of Liquid Air Jet Pump, Frontiers in Heat and Mass Transfer, Vol. 17, No.12, <a href="http://dx.doi.org/10.5098/hmt.17.12">http://dx.doi.org/10.5098/hmt.17.12</a>	Dr. V. W. Bhatkar
7	Thermal Simulation of a Liquid-Air Jet Pump,JP Journal of Heat and Mass Transfer, Volume 23, Issue 2, <a href="http://dx.doi.org/10.17654/HM023020225">http://dx.doi.org/10.17654/HM023020225</a>	Dr. V. W. Bhatkar
8	Design and Analysis of Control Strategy for an Efficient Battery Thermal Management System of an Electric Vehicle, International Journal of Vehicle Structures & Systems, Vol. 14, Iss. 2, (2022): 144-149. DOI:10.4273/ijvss.14.2.03 <a href="https://www.proquest.com/openview/5db66e57b595736d263b3d5683f07834/1?pq-origsite=gscholar&amp;cbl=60382">https://www.proquest.com/openview/5db66e57b595736d263b3d5683f07834/1?pq-origsite=gscholar&amp;cbl=60382</a>	Dr. K. R. Patil
9	Application of Oxygenated DEE and Ethanol on the Performance and Emission Characteristics of Diesel-Fuelled CI Engine in the Context of Variable Injection Timing, International Journal of Vehicle Structures & Systems, Vol. 14, Iss. 2, DOI:10.4273/ijvss.14.2.18	Dr. K. R. Patil

Sr. No.	Publication details	Faculty
10	Exhaust Heat Recovery System using Organic Rankine Cycle (ORC) Technology: A Comprehensive Investigation, International Journal of Mechanical Engineering, Vol. 6 (Special Issues 1), Nov.-Dec. 2021, <a href="https://kalaharijournals.com/resources/SP-Vol.6_48.pdf">https://kalaharijournals.com/resources/SP-Vol.6_48.pdf</a>	Dr. P. K. Tamkhade

## ❖ Patents by Faculty

Sr no	Name of faculty	Title of patent	Application no./patent no.
1	Prof.V.A.Naikwadi	Design and development of wheel alignment and balancing prediction device for modern automobiles	202221007065
2	Prof.V.A.Naikwadi	Concrete an: a hybrid artificial intelligence based data generation model with intrinsic controlling criterion for predicting concrete's properties	20222101110
3	Prof.V.A.Naikwadi	An innovative biodiesel filter to measure the moisture and density of fuel	202121056018
4	Prof.V.A.Naikwadi	Design and development of modified delivery box design with modern approach.	202121020022
5	Prof.R.S.Yadav	An e-cradle enabled with machine learning and iot for child	202121034967
6	Prof.R.S.Yadav	A system and method for facial recognition using micro drone	202131029128
7	Prof.V.A.Naikwadi	Design and development of mechanical system with infrared sensor-based circuit to convert gravity force to electricity.	202121027542
8	Prof.V.A.Naikwadi	Design and development of face mask bracket with provision for collar microphone.	202121041865
9	Prof.R.S.Yadav	A system to analyse the effectiveness of e-learning/ virtual learning	202111051515
10	Prof.V.A.Naikwadi	Designs and development of innovative folded portable two-side sloping hut gazebo and pyramid gazebo.	202121038013

## ❖ Technical Events

Sr. No.	Name of Professional Societies / chapters	Title of Event Organized	Date
1	Mechanical Department (Dexterity)	<ul style="list-style-type: none"> <li>Mech-Mind</li> <li>Cad War</li> <li>Shark Tank</li> </ul>	14/03/2022
2	MESA	Inception (technical buzzer)	26/02/2022
3	MESA	Cadathon	17/10/2021
4	ISHRAE	Webinar on engineering project management	24/11/2021



Media Coverage



## ❖ Our Team



Team Abhedya Racers

Team Abhedya received Go Green Award in BAJA SAEINDIA 2021.

Team Achilles secured all India Rank 1<sup>st</sup> (Effi-cycle 2021) and Best CAE award in SAEINDIA EFFICYCLE 2021



Team Achilles



Team Abhedya

Team Abhedya secured 25th rank all over the world (in first attempt of participation) in the International 'SAE BAJA ARIZONA 2020' event held at Tucson, Arizona, USA.

Robocon team 'Rudra' secured overall 10<sup>th</sup> rank in the National level Event organized by DD and IIT Delhi.

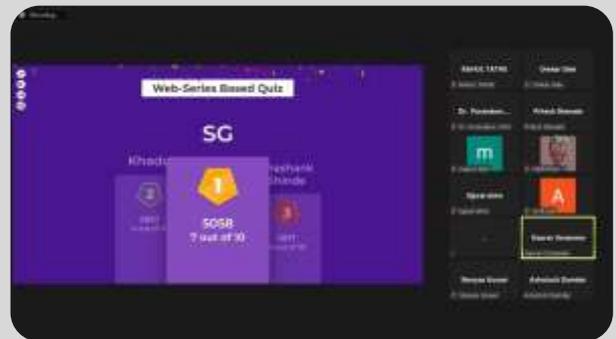


Team Rudra

## ❖ MESA (Mechanical Engineering Students Association)

Mechanical Engineering Students Association MMCOE carried out various activities throughout the semester to make the academic energetic & enthusiastic. The highlighted activities conducted by MESA were Organized

- Orientation program for SE & DSE students
- Organized 'CADATHON' at University level
- Organized workshop on 'Aeromodelling under the guidance of Alerios Aeroclub'.
- Organized 'Treasure Hunt Competition'.
- Organized 'Box Cricket Competition'.
- Organized 'Mechanical ka Mastermind Competition'.



## ❖ Industry Visit

Academic Year	Class/ Year	Industry / Organization	Dates
2021-22	SE	AASK Precision Engineers Pvt.Ltd	07/5/2022 and 09/05/2022
	SE	VGTAP LAB MM Polytechnic College	02/5/2022
	TE	Inspatech Engineering, Bhosari	23/4/2022
	SE/BE	Shivshakti Processed Foods, Vadgaon (Maval)	22/4/2022
	BE	Ajinkytara sugar industry cogeneration Power plant and Szalon windmill Power Plant	25/03/2022



### ❖ Students Achievements

Sr. No.	Name of student/ group	Achievements
1	Sumit Kangane, Sumedh Kirve, Sumedha Thorat, Bhagyashree Tanpure	Published Paper on "Alternative Material Selection and Analysis of Solar Panel Mounting Structure" in International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE) Vol 6, Issue 8, August 2021
2	Samir Suresh Gadkari	Achieved 3rd rank in Collegiate fencing Competition. SEBRE Event-
3	Aniket shivanad Nadgiri	The Poona North Rotary charitable trust and ACR project Consultant Pvt.Ltd.got certificate for Excellence Performing and special interest in the filed of "Refrigeration and Air-conditioning in year 2021
4	Parth Pendse	Selected in Tata Technologies Limited (TTL) with package of 4.5 L. He was Vice Captain of BAJA Team.
5	Aditya Hanumant Vishrup	Secured 1st rank in 'Project Based Learning Competition' arranged on 20th May 2022.
6	Sameer Walunj	Successfully completed 'Air force attachment camp' held at Air force station Bidar from.13th June 2022 to 24th June 2022.
7	Sanket Balasaheb Wakchaure	Successfully completed 'Corporate Excel training course' on 31st January 2022.
8	Arjun Jeevan Deshmukh	Published Patent on 'Development Of Innovative Rechargeable Vein Detector Wrist Band Mechanism' Application Number 202221038718, Date Of Filing 06/07/2022.
9	Sanket Balasaheb Wakchaure	successfully completing the course 'Introduction to C++ Conducted' from February 2022 to June 2022 from Coding Ninjas.
10	Sanket Balasaheb Wakchaure	Successfully completing 'Introduction to Automotive Industry Internship'. Dec 2021 - Jan 2022 from ARAI.
11	Omkar Nikam	Secured 1st Position in Technical Buzzer Round Conducted on 26th Feb.2022 organized by MESA MMCOE



**Our Pride - Placements and Internships Details**

