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SYNERGY 36

A Half Yearly News Magazine

Jan 2023 – June 2023

Department of Mechanical Engineering



DEPARTMENT VISION

To be a department providing excellent education in the field of Mechanical Engineering with effective teaching, learning and industry interaction.

DEPARTMENT MISSION

- To prepare effective and responsible graduate for global requirements by providing quality technical education & enable them to become leaders & pioneers in their field.
- To provide a program of professional study grounded in engineering fundamentals augmented by the development of interpersonal skills, social values, experiential learning, and flair for life-long learning.
- To establish center of competence to conduct basic and applied research in core area and strengthen the link with industry of time relevance.

STUDENT ACTIVITIES, TRAINING AND WORKSHOP

• Tech-Symposium 2K23 - Department of Mechanical Engineering



DKTE organized National Level Online Technical Event, "TECH-SYMPOSIUM 2K23" on 24th February 2023 in the college campus. The two events "Solid Modelling" and "Lathe War" were organized by the Department of Mechanical Engineering. The "Solid Modelling" event was organized in two levels based on professional skills viz. Quiz, and modelling of part on CATIA/SolidWorks. The "Lathe War" event was organized based on Job preparation on the Lathe machine.

The winners for the events are:

Solid Modelling → Winner: Mr. Jayesh Rao (DKTE)

Runner up: Mr. Aditya Amane (SIT)

Lathe War → Winner: Mr. Juned Mutwalli (KIT)
Runner up: Mr. Sumit Hajare (SIT)

This event was successfully conducted under the guidance of Director Prof. Dr. L. S. Admuthe, Head of Department of Mechanical Engineering, Prof. (Dr.), V.R. Naik. The event was coordinated by Prof. B.B. Kabnure and the students of Mechanical Engineering Students Association (MESA).

Congratulations to all winners!!

- **Online Certification Robotics Training Workshop**



Mechanical Engineering department in association with other departments organized online certification robotics training workshop starting from 6th March to 29th March 2023 which is conducted by APS Germany, a world-renowned company in Robotics training. The first session was held on 6th March 2023. It was attended by 100 students from different departments along with faculty members. This training will enable the creation of opportunities for participants to join Master's study programs at European Universities as well as to improve opportunities for internships, jobs and special training programs. Also, participants will earn an

international certificate from APS, Germany. This workshop was arranged under the guidance of I/C. Director Prof Mrs. (Dr.) L.S. Admuthé, This program was coordinated by Dr. V.R.Naik, HOD (Mech.) Engg. along with Prof. A.V. Sutar and Prof. R. R. Kolhapure and other department coordinators namely Dr. S. B. Mhetre, Prof. U. P. Mhasavekar, Dr.S.N.Jawale, Prof. V.B.Chougule from Textile, Prof. Y.M.Kamble from CSE, Prof. V.B.Magdum from Electrical, Prof. V. B. Kumbhar from ETC.

- **“Car Clay Modeling Event” at AICTE IDEA Lab**



Department of Mechanical Engineering conducted “Car Clay Modeling Event” in association with MESA (Mechanical Engineering Students Association) and AICTE Idea Lab on Saturday 18.3.2023. Total 27 groups from different colleges from different discipline participated in this event. Agenda of this event was to develop new ideas, innovative concepts during car clay modeling of cars.





DKTE Governing Council Member Mr. Ravi Awade and I/C. Director Dr.Mrs. L. S. Admuthe visited the event. During their visit they interacted with students and appreciated the student's idea and also event concepts. Prof. Dr. V. D. Shinde and Prof. S. A. Soundattikar was judge for this event. This event was coordinate by Prof. G. C. Mekalke and Prof. R. R. Kolhapure under the guidance of Prof. Dr. V. R. Naik.

- **"The Battle of Cycle" Event with AICTE DKTE-IDEA Lab**





Winner Group: Aditya Dharangutte, Ajay Patil, Jayant Chavan, Nikhil Madiwal and Gourav Shinde

1st Runner Up: Rohini Magadum, Siddhi Laddha, Sanika Magadum, Sanika Mane and Snehal Lohar

2nd Runner Up: Sammed Gat, Apurva Jolapure, Prajwal Bimale, Aditi Lande and Utkarsh Sarade

Department of Mechanical Engineering in association with AICTE DKTE-IDEA Lab conducted "The Battle of Cycle" Event on 29th April 2023. This event was inaugurated by Hon.Secretary of our Institute Prof.(Dr.) S.U. Awade with I/C Director Prof.(Dr.) Mrs.L.S. Admute, Dean Social Prof. S.G. Kanitkar and HOD Mechanical Engineering Prof.(Dr.) V.R. Naik. Total 20 Groups were registered for this Event. In this event, there were 3 rounds, first round of Assembly of Cycle, second round of Implementation of Innovative Ideas & last round of Race around a Palace. DKTE Governing Council Member Mr. Ravi Awade visited the event. During their visit, he

interacted with students and appreciated the student's idea and also event concepts. Prof. M. R. Rawal was judge for this event. This event was coordinated by Prof. G. C. Mekalke, Prof. R. R. Kolhapure, Prof. (Dr.) V. D. Shinde & Prof. (Dr.) V. R. Naik. HOD (Mechanical Engineering).

- **Workshop on "Placement and Higher Studies opportunities through GATE and other Competitive Exams"**



Workshop on "Placement and Higher Studies Opportunities through GATE and other Competitive Exams" at DKTE the Career Guidance Cell of DKTE arranged Workshop on "Placement and Higher Studies Opportunities through GATE and other Competitive Exams". Dr. J.M.Patil, Incharge of the Career Guidance Cell, welcomed the speaker Mr. PareshGugale of Imperial Institute of Excellence - I2E, Pune. Prof. PareshGugale conducted a workshop for Third Year Mechanical /Civil/Electrical students from 11:50 am to 1:50 pm. For Third year CSE/AI/ETC students the workshop was

conducted from 3.00 pm to 5.00 pm. Gugale Sir addressed the students about GATE Examination preparation, the importance of the GATE Score to get admission to reputed institutes in India like NITs and IITs, and Job Opportunities in Public and Private Sector Companies. Further, he added that the GATE examination knowledge is helpful for Campus Interviews, IES and other Competitive Examinations. About 500 students attended the workshop. The coordinators of the Career Guidance Cell Prof. R. D. Patil, Prof. Mrs. S.S. Darbastavar, Prof. V.D.Sakhare, Prof. D. G. Patil and Dr. S.R.Prasad made efforts to make the Workshop successful. This Workshop was arranged under the guidance of I/c. Director Prof. Dr. Mrs L. S. Admuthe.

- **Tata Technologies Ltd. (TTL) - Ready Engineer Program (RE 2.0)**



Our institute has signed MOU with TATA Technologies Ltd., Pune. As per MOU, TTL has conducted an online Ready Engineer (RE2) final test on 2nd April 2023 which included test on BIW and Plastic trims. For this program total 81 students of Third Year B.Tech. Mechanical class were enrolled. The test was coordinated by Prof.R.R. Kolhapure, Prof.G.C. Mekalke, Prof. B.B. Kabnure & Prof.A. V. Sutar & HOD Mechanical Prof.Dr.V.R. Naik. This certification will enhance the academic credentials of the students in the domain area of BIW and Plastic Trims design in automobiles.

47 Third year students were certified as Ready Engineer and 31 students were certified as participants.

STUDENTS AWARDS AND ACHIEVEMENTS



Miss. Prajakta Mahesh Chougule, a student from Third Year has qualified in Graduate Aptitude Test in Engineering (GATE) 2023 in 'Mechanical Engineering' with 292 score.

Congratulations to her...!!

- **Development of Autonomous Information Teller Robot project**



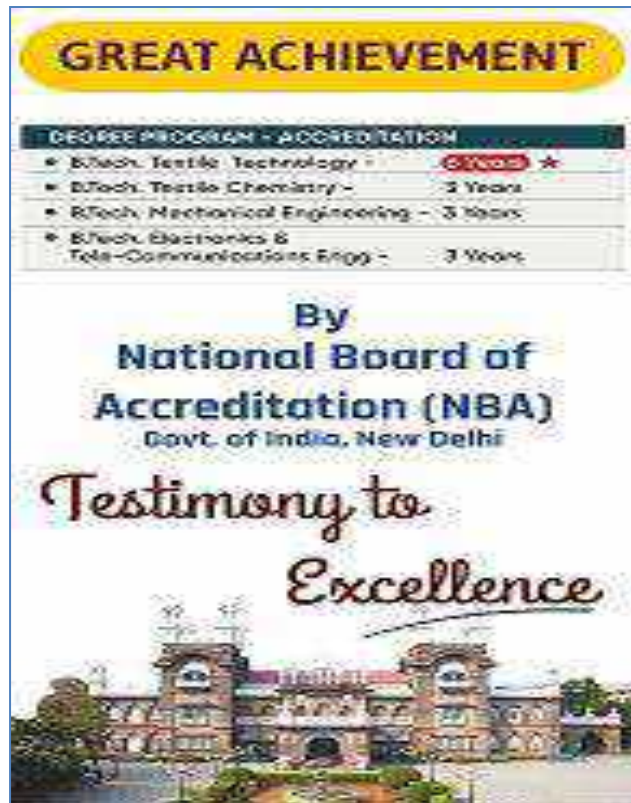
A team comprising of Miss. Shradha Pol, Miss. SimranMujawar, Mr. RishikeshRajoba, Mr. Mayuresh Desai, Mr. DigvijayLondhe, Mr. Arbaaz Khan and Mr. Rohit Gaikwad from Department of Mechanical and Electronics & Telecommunication Engineering Department of our institute has completed a project entitled "Autonomous Information Teller Robot" under the guidance of Prof. S. A. Soundattikar and Prof. A. R. Telepatil.

The students developed an autonomous guided vehicle in the form of a robot to convey appropriate information to the people in video and audio formats through integration of multiple advanced technologies. The QR codes containing detailed machine information were placed near the respective machines. As the robot scans QR codes on machine, the information about the machine appears on the Pi screen in video and audio formats. This robot offers advantages in the form of low cost, time and human efforts. It can find an application in libraries, restaurants, museums, educational institutions, etc. to give detailed information to the users. It could also be used as a material handling solution in industries. This project is thus enormously beneficial to society.

The robot was developed in the AICTE IDEA Lab at DKTE. President Shri. Kallappaanna Awade, Vice President Shri. Prakash Awade, Honorary Secretary Dr. Mrs. Sapna Awade and all the trustees of DKTEs TEI congratulated and wished the students and related team of the project.

The I/c. Director Prof. Dr. Mrs. L. S. Adamuthe, Head of Mechanical Department Dr. V. R. Naik, Head of ETC department Dr. S.A. Patil and Idea Lab Coordinators Dr. V.D. Shinde and Prof. Suyog Rayjadhav offered special support for the successful completion of the project.

- Accreditation from the National Board of Accreditation (NBA)



We feel proud to announce that four B.Tech Programs/Courses of our institute received an Accreditation from the National Board of Accreditation (NBA), an autonomous body of the Government of India. B. Tech. Textile Technology Program received an accreditation for 6 years. B. Tech Textile Chemistry, B. Tech Mechanical Engineering and B. Tech Electronics & Telecommunication Engineering received an accreditation for 3 years.

Congratulations to all the Stakeholders of DKTE!!!

STUDENT PLACEMENTS:

64 Students from Final Year B.Tech Mechanical Students got placed in listed companies.

Sr. No.	Company Name	No of Students
01	CAPGEMINI, PUNE	2
02	WIPRO PAARI ROBOTICS, PUNE	5
03	NOVUX NEXUS, PUNE	1
04	THERMAX LIMITED, PUNE (HEATING DIV)	12
05	BROSE, PUNE	1
06	CG POWER AND INDUSTRIAL SOLUTIONS LTD.,	3
07	JOSHI JAMPALA ENGINEERING PVT. LTD.	1
08	JUST DIAL, KOLHAPUR	2
09	TATA TECHNOLOGIES, PUNE	1
10	MOLD TEK TECHNOLOGIES, PUNE	16
11	JEEVTRONICS PVT. LTD.	2
12	D SIGN DESIGN	3
13	KSB PUMPS	2
14	CHEGG INDIA	5
15	A R WILFLEY INDIA PVT LTD	3

Sr. No.	Company Name	No of Students
16	QSPIDERS	1
17	BHARAT FORGE, PUNE	2
18	TATA CONSULTANCY SERVICES, PUNE	2

Total - 64

INDUSTRIAL VISITS:





Industrial Visit of SY B.Tech Mechanical Engineering

Second Year B.Tech. Mechanical Engineering students visited 'FIE Ltd. HMD Division', Parvati Industrial Estate Yadrav, 'Flame Industry', and 'Elite Industry', L. K. Akiwate Industrial Estate, Jaysingpur on 6th May 2023 as a part of Industrial Visit. During this visit, students were exposed to different measurement and quality control techniques, various heat treatment processes, and manufacturing and assembly of Centrifugal pumps. Industrial visit was coordinated by Prof. (Dr.) V. D. Shinde, Prof. A. R. Balwan, Prof. K. K. Powar and Prof. R. D. Patil.



Industrial Visit by Mechanical Department

The department of Mechanical Engineering had arranged industrial visit for Final year B.Tech students to Bangalore and Mysore. Industrial visits are an integral part of the engineering curriculum as they provide students with practical exposure to various industries and real-world applications of their theoretical knowledge. The companies visited were ACE Manufacturing systems Ltd and ACE Designers Limited.

Ace Manufacturing Systems Ltd., is one of the largest CNC machine tool builders in India offering a wide range (over 70 products) of machining centers, both vertical and horizontal, it covers the entire gamut of milling applications.

ACE Designers Limited is one of India's largest machine tool manufacturing companies in India.

Students got an opportunity to witness the day-to-day operations of an industry, including production processes, quality control measures, and supply chain management and exposure to advanced technologies and machineries used in the industry.

This visit was coordinated by Dr. P.S. Badkar & Prof. A.V. Sutar under the guidance of Head of Department Prof (Dr). V.R.Naik and TPO Prof.G.S. Joshi, plays an important role in obtaining permission for industrial visit. I/C. Director, Prof. Dr. L. S. Admuthe permitted to arrange this visit and her time to time advice was instrumental in planning the visit.

FACULTY TRAINING, WORKSHOPS PARTICIPATED/ CONDUCTED AND FACULTY ACHIEVEMENT:



Prof. Vijay Ananda Kamble from Mechanical Engineering Department has been awarded Ph.D. in Mechanical Engineering by Visvesvaraya Technological University, Belagavi under the guidance of Dr.V.D. Shinde, Textile and Engineering Institute and Dr. J. K. Kittur, Principal, KIS Gogte Institute of Technology, Belgavi. He has carried out doctoral research work entitled "Investigation of the influence of the design parameters on the performance measures of load cell by implementing sensitivity analysis, optimization, and robust design techniques ". The research work is highly useful in the field of measurement and calibration of force. He has also been granted a patent based on this Ph.D. research by Patent Office, India. He was felicitated at the auspicious hands of our Chairman Hon'ble Shri. K.B.Awade. Hon. Secretary Dr. SapanaAwade, Director Prof. (Dr.) L. S .Admthe and HOD of Mechanical Engineering Department Prof. (Dr.) V.R. Naik and Dr. V.D. Shinde were present on this occasion.

Training at Thermax Ltd. Pune (Heating Division):



As a part of MOU with Thermax Pune, four faculty members of our department have undergone intensive training at Thermax Heating Division. The training was organized from 23rd and 24th January 2023. The faculty members learned about boiler types, boiler selection, various types of fuels used in boiler, boiler design and boiler maintenance. They also studied the working of installed boiler in Thermax premises. Prof. (Dr.) V. P. Gaikwad, Prof. (Dr.) V. A. Kamble, Prof. R. D. Patil and Prof. B. B. Kabnure attended the training.

Training entitled "Train the trainer: Building Automation, Energy audit and IoT" at Johnson Controls, Pune.



The faculty members Mr. V.B. Sutar, ETC department and Mr. B.B.Kabnure, Mechanical Engineering department of our institute have successfully completed the industrial training entitled "Train the trainer: Building Automation, Energy audit and IoT" at Johnson controls, pune during 24th to 28th april 2023. This training is going to upgrade the technical skills and improve the interaction between industry and institute. During this training, the faculty members gained technical knowledge in the field of building automation, HVAC and Refrigeration systems, Internet of Things, fire Alarm and detection System and Energy Management and Audit.

FACULTY PAPER PUBLICATIONS (JOURNAL/CONFERENCE)

Sr .	Name of Faculty	Title of the Paper	Name of Journal/ Book	ISSN No.	Volume / Issue
1	V. D. Shinde	Analyzing the effect of inoculant addition on the solidification of ductile cast irons using thermal analysis	World Journal of Engineering	1708 5284	https://doi.org/10.1108/WJE-07-2022-0272
2	A.D. Patil	Compability of Petrol-Ethanol, mixtures with various proportions, in FI spark ignition engine	Journal of Xidian University	1001 2400	Vol. 17 Issues 5 23/05/2023
3	R.R. Kolhapure	Study of Machining Characteristics of Non-conventional Methods	Int. Conf. Application of M/c Intelligence & Data Analytics	2352 538X	Vol. 105 05/01/2023
4	G C Mekalke	Investigating & Study of Various Composite Materials & their Counter parts to Replace the Conventional Materials	Int. Conf. Application of M/c Intelligence & Data Analytics	2352 538X	Vol. 105 05/01/2023
5	S. B. Rayjadhav	Development of Polyamide Based Blend & their Nano composites – A Review	Int. Conf. Application of M/c Intelligence & Data Analytics	2352 538X	Vol. 105 May 2023
6	S. G. Kanitkar	Contribution of textiles in freedom fight of Bharat	Textile Trends	0040 5205	Vol. L. No.8 Aug 2022
7	R.D.Patil	Design and Dev. of Portable Circular Profile Bending Machine	Journal of Mechatronics Machine Design & Manufacturing	2582 8908	Volume-4 Issue-3, Sept-Dec, 2022
8	S.A.Sound attikar	Cyber Physical System Implementation for Material Handling in SMEs	Journal of Northeastern University	1005 3026	Vol 25 Issue 4 30/12/ 2022
9	B. B. Kabnure	Evolution of microstructure and hardness in shell moulded impeller casting	Journal of Advances in Materials and Processing Technologies	2374 068X, 2374 0698	Vol ume- 8 Issue 4 Dec 2022
10	B. B. Kabnure	Design and Development of Portable Circular Profile Bending Machine	Journal of Mechatronics Machine Design & Mfg.	2582 8908	Volume -4 Issue-3 Sept-Dec 2022

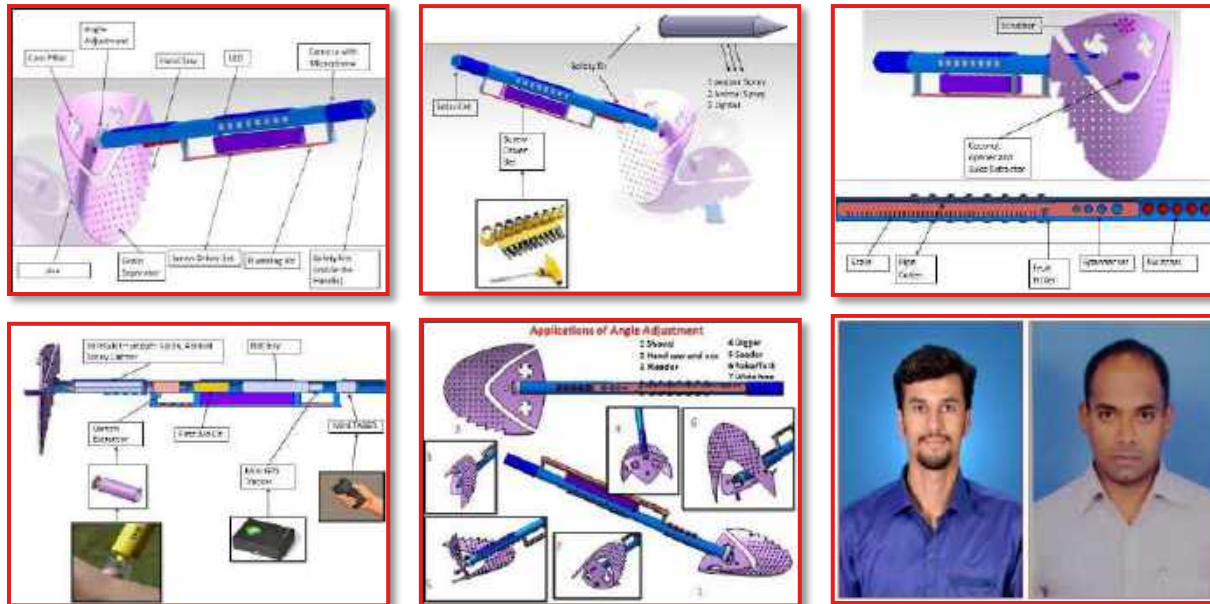
FACULTY PATENTS:

- The Indian Process Patent is granted for the invention of "Vacuum Molding"



The Investigators are Prof. (Dr.) V.D. Shinde, Prof. (Dr.) V.R. Naik, Dr.B. Ravi of IIT Bombay and students Mr. Chetankumar Sutar, Ramesh Narake, Sachin Nalawade, Jaydeep Sahute, faculty and students from Mechanical Engineering Department. Project was sponsored by E-Foundry cell of IIT Bombay. Vacuum molding is a variation of the sand casting process for most ferrous and non-ferrous metals, in which unbounded sand is held in the flask with a vacuum. The pattern is specially vented so that a vacuum can be pulled through it. No binder or any additives are required for the moulding, as the process thus initiated is only regulated by vacuum pressure induced. The invented device machine will be used for producing precision foundry components. For patent Prof.Dr.V.R. Naik, HOD Mechanical Engineering dept and Prof.Dr.L.S. Admuthe, I/C Director of Textile and Engineering institute Ichalkaranji provided necessary support for filing of the patent. ***Congratulations!!!***

• Grant for Design Patent entitled "SMART FARMING SPADE"



Mechanical Department faculty member Mr.Utkarsh A. Patil and Mr.Vikas B. Magdum has received a grant for the design patent entitled "SMART FARMING SPADE" from Indian Design Patent Office, Kolkata. Smart Farming Tool is capable to perform multiple tasks as a single device for improving operations in the agricultural sector. This single device is offering 30 different features consisting farming operations, non-farming household operations, safety features, smart electronic features.

Farming operations –

* Wide Hoe * Deep Hoe * Rake/Fork * Shovel * Weeder * Seeder * Digger * Hand Saw * Axe

Non-farming household operations –

* Scrubber * Pipe Cutter * Spanner Set * Scale * Screw Driver Set * Coconut Opener/ Juicer * Grain Separator * Corn Piller * Fruit Picker.

Safety features –

First Aid Kit * Venom Extractor * TASER/Stun Gun * Lighter * Animal Spray

Smart electronic features –

* GPS Tracker * Camera * LED * Solar Cell * Bluetooth Starter

Congratulations!!!

• **Patents Received -**

Sr. No.	Name of Faculty/ Students	Patent Title	Type of Patent	Date of Certificate	Patent Number
1	Dr. V. D. Shinde, Dr. V. R. Naik	Vacuum Moulding Box	Utility	20/03/2023	425829
2	K.K. Powar, D.Mhamane, S.B. Rayjadhav, R.R. Kolhapure, A.P. Kadole, Dr.V.R. Naik, Dr.P.V. Kadole	Exchangeable Head Tooth Brush	Design	31/03/2023	132372

FACULTY WORKSHOP ATTENDED:

Sr.	Name	Title of Workshop	Date	Organizer
1.	Dr. V. D. Shinde	Design Thinking for idea Lab	11/05/2023 – 17/05/2023	COEP Technological University
2.	A.V. Sutar	Curriculum Development and Academic Quality	01/03/2023 – 05/03/2023	Indian Institute of Carpet Technology
3.	P.N.Gore	Curriculum Framework	17/3/2023 – 18/3/2023	Institute for Academic Excellence (IAE) Hyderabad

FACULTY DEVELOPMENT PROGRAM ATTENDED

Sr.	Name	Course/ Program	Date	Organizer
1.	Dr. V. A. Kamble	3D printing and Advanced manufacturing	30/1/2023 – 4/2/2023	AICTE Training and Learning (ATAL) Academy

ONLINE WEBINAR ATTENDED

Sr.	Name	Course/ program	Date	Organizer
1.	P.N.Gore	NEP 2020: Integrated Higher Education System	10/3/2023	JNV University Jodhpur

Prof. A.P. KADOLE
Editor.

Prof. (Dr.) V. R. NAIK
Advisor & HOD, Mech.Engg