

St. John College of Engineering and Management, Palghar

(Approved by AICTE, Recognized by DTE and

Affiliated to Mumbai University)

NAAC Accreditation with A Grade

MECHATRON 6.0

(Departmental Newsletter)

Department of Mechanical Engineering

(December- 2023)



Chairman's message



Mr. Albert W. D'Souza

I am happy to see the first edition of newsletter/magazine of the Mechanical Engineering department **"MECHATRON 6.0"** December 2023 of St. John College of Engineering and Management, Palghar.

The newsletter/magazine is a communication medium for all students, staff, parents and friends to know the recent activities and developments that are taking place at the departmental level.

I congratulate the HOD, staff, students and the editorial team for coming up with this new issue of newsletter/magazine for the department.

At St. John, we remain committed to give very best to the students under our assistance. I want to extend my heartfelt gratitude to all the parents, students, stakeholders who have put their trust in us and been a part of this wonderful journey of St. John Technical Campus.

Let's come together to work with vision of Trust "Excellence in Serving to Educate and Educating to Serve".

Principal's Message



Dr. G. V. Mulgund

I am very pleased to see the first edition of newsletter/magazine of Mechanical Engineering department "**MECHATRON 6.0**" December 2023.

The newsletter contains all the information related to student activities, achievements, faculty achievements, workshops and other activities conducted at the departmental level.

Indeed it is a canvass that has taken its forum through the contribution of all the concerned in the department.

I would like to congratulate the Head of Department as well as staff and students.

I wish many more activities, academic pursuits, and achievements coming across our path as we journey together to conquer the milestone with St. John technical Campus.

HOD Message



Dr. Kishor Rambhad

(Ph.D Mechanical Engineering)
Associate Professor & Head

The department has a team of highly experienced and motivated faculty members who are in process of tuning the young minds to make them globally competitive. The strength of the department is highly motivated students who understand the dynamics of the industry and upgrade their skills accordingly. Depending upon the interest of the student, he/she may choose to go for higher studies or if employed can choose to do research, development, design, production, application, testing or management in the Information Technology industry.

In our department we not only give emphasis on study but also apply our knowledge in understanding the real life hands on experience by industry personnel because almost more than 30000 MSME companies are located in and around Palghar in the radius of 40km. We are encouraged to see many industries coming back to our department, which reinforces our belief in the effectiveness of our curriculum and its suitability to meet the dynamic corporate world.

Through innovative teaching-learning process a teamwork approach and leadership building experience, our students gain vital communication and critical-

thinking skills. Our institution provides a platform for the students to enhance their employability skills through Industry Institute Collaboration.”

With this brief introduction, I welcome you to be a part of our journey towards being a world-class centre of excellence in education, training, and research.

Editor Message



Mr. Aniket Patil

I am tremendously glad to present the first edition of newsletter/magazine "**MECHATRON 6.0**".

A lot of effort has gone into the making of this issue. We hope you enjoy reading the magazine.

This newsletter/magazine will continue to be a vehicle for promoting fluent communication among all members of the college. We have accounted for momentous achievements, events activities of the Students and staff of Mechanical department.

Our main endeavour is to spread knowledge and excellence which our team is working and progressing to achieve the best.

I would like to sincerely thank to the editorial team for their constant contribution and support into bringing this newsletter/magazine.

I also acknowledge my sincere thanks to our Chairman, Mr. Albert W. D'Souza, Principal, Dr. G.V.Mulgund and HOD, Dr. Kishor Rambhad for their encouragement and Support to prepare the this issue of annual newsletter/magazine "**MECHATRON 6.0**"

Departmental Vision

"To be a centre of high repute providing quality education and conducive environment for research leading to innovations in the field of Mechanical engineering."

Departmental Mission

- To impart quality education to the students and enhance their skills to make them globally competitive.
- To develop linkages with research and development organisations and Industries to create state of art facilities for teaching-learning and research.
- To inculcate habit of creative design and developing innovative products.

Program Educational Objectives (PEO's)

- To demonstrate their expertise in areas of design, manufacturing and thermal engineering to solve real life problems.
- To pursue higher education, research and entrepreneurship and do it ethically.
- To engage in lifelong learning and exhibit leadership quality.

Program Outcomes (PO's)

- Engineering graduates will be able to apply the basic knowledge in mathematics, sciences and engineering fundamentals for solving problems in mechanical engineering.
- Apply knowledge, techniques and skills to design mechanical and thermal systems or processes as per requirements.
- Demonstrate the ability to design and conduct experiments and standard tests to interpret and analyse data and results.
- Identify, formulate and design complex mechanical engineering problems in their future profession.
- Select and use modern engineering software tools and equipments to analyse mechanical engineering problems.
- Appreciate social and cultural values, asses the health, safety and legal issues and practices.
- Understand the impact of professional engineering solution for sustainable development.
- Understand the professional as well as ethical responsibilities and norms of different countries.
- Function effectively within multidisciplinary team as leader or member.
- Communicate effectively within engineering community and society at large by means of report writing, presentation and documentation.
- Demonstrate knowledge and understanding of engineering and management principles for effective project management.
- Educate and clearly understand and implement the value of lifelong learning.

TEACHING STAFF



**HOD Mechanical &
Associate Professor**



Prof. Vivek Narnaware



Prof. Sangam Rane



Prof. Avinash Chavan



Prof. Chirag Kale



Prof. Kiran Beldar



Prof. Pranit Mehta



Prof. Hrishikesh Kulkarni



Prof. Uday Prajapati



Prof. Sagar Patil



Prof. Aniket Patil

Faculty Activities (Workshops, seminars, STTP/FDP attended by faculty)

S.N.	Name of Faculty	Name of the Workshop/ Seminar/ STTP	Date	No. of days	Organization
1	Dr. Kishor Rambhad	STTP on “Sustainable Energy Technology for Hydrogen, Solar, Wind and Biomass energy”	04/07/2023 To 08/07/2023	5	G H Raisoni College of Engineering, Nagpur
2	Mr. Chirag Kale	STTP on “Sustainable Energy Technology for Hydrogen, Solar, Wind and Biomass energy”	04/07/2023 To 08/07/2023	5	G H Raisoni College of Engineering, Nagpur
3	Mr. Sagar R. Patil	STTP on “Sustainable Energy Technology for Hydrogen, Solar, Wind and Biomass energy”	04/07/2023 To 08/07/2023	5	G H Raisoni College of Engineering, Nagpur
4	Dr. Kishor Rambhad	ISTE-Short Term Training Program on NEP 2020 – Building Research Culture and Enhancement of Teaching Learning Process	08/05/2023 to 12/05/2023	5	St. John Institute of Pharmacy and Research, Palghar
5	Dr. Upendra Maurya	ISTE-Short Term Training Program on NEP 2020 – Building Research Culture and Enhancement of Teaching Learning Process	08/05/2023 to 12/05/2023	5	St. John Institute of Pharmacy and Research, Palghar
6	Mr. Uday Prajapati	FDP ON TQM	30/04/2023	12 weeks	NPTEL
7	Mr. Sagar Patil	Two Days Training Program for “Mentors of Standard Club”	05/12/2023 to 06/12/2023	2	Bureau of Indian Standards, Andheri, Mumbai Branch
8	Mr. Uday Prajapati	International Advanced Faculty Development Program on Application of Research Software for Qualitative and Quantitative Research Design	05/09/2023 to 13/09/2023	9	Eudoxia Research University, ERU-USA

9	Mr. Uday Prajapati	ATAL FDP on Advanced Vibration Analysis & Its Practical Application	11/12//23 to 16/12/23	6	Trinity College of Engineering and Research Pune
10	Mr. Vivek Narnaware	AICTE-ATAL -TLB FDP on “Data Analytics Applications using Cloud”	18/12/2023 to 22/12/2023	5	AICTE-ATAL – TLB
11	Mr. Chirag Kale	NPTEL FDP On Solar Energy Engineering And Technology	July to Oct 2023	12 Weeks	NPTEL

Course Completed by Faculty

S.N.	Name of Faculty	Course	Date	No. of Weeks	Organization
1	Mr. Chirag Kale	NPTEL Course on Solar Energy Engineering and Technology	July to Oct 2023	12	NPTEL
2	Mr. Aniket Patil	NPTEL Course on “Operations Research”	July to Sep. 2023	8	NPTEL
3	Mr. Uday Prajapati	NPTEL COURSE on Introduction to mechanical vibration	July to Sep. 2023	8	NPTEL, IIT Roorkee
4	Mr. Vivek Narnaware	Applications in AI	2/9/2023 to 2/12/2023	12	IIT Kharagpur

Faculty Publication (Patent/Book/ Book Chapter/ IC/IN/NC/IC)

Sr. No	Name of Faculty	Publication Details
1	Dr. Kishor Rambhad	Paper: Development and investigation of thermal composite insulation from environmentally hazardous waste fly ash, 6 July 2023, Materials Today: Proceedings, Scopus.
2	Dr. Kishor Rambhad	Paper: Thermal analysis of hybrid nanofluid flowing inside the automobile radiator, 29 June 2023, Materials Today: Proceedings, Scopus.
3	Dr. Kishor Rambhad	Paper: Experimental investigation of desiccant dehumidification with four different combinations of silica gel desiccant wheel on indoor air, 3.10.2023, SN Applied Science, Springer, Scopus, ESCI
4	Dr. Kishor Rambhad	Paper: CFD analysis of a butterfly valve to optimise its design, https://doi.org/10.1063/5.0167691 , 29.09.2023, AIP Conf. Proc, WoS, Scopus
5	Dr. Kishor Rambhad	Paper: Comparison of alternative fuels in single cylinder diesel engine using CFD, 29.09.2023, AIP Conf. Proc, WoS, Scopus
6	Dr. Kishor Rambhad	Paper: Manufacturing of foldable bicycle with finite element analysis of push-pull clamp, 29.09.2023, AIP Conf. Proc, WoS, Scopus
7	Dr. Kishor Rambhad	Book Chapter: Optimization of fluidity and mechanical properties of the sand casting A518 alloy by using grey relational analysis method, 10, (2023),29.09.2023, AIP Conf. Proc, WoS, Scopus
8	Dr. Kishor Rambhad	Performance Investigation of Automotive Radiator Using Water-Al ₂ O ₃ and Ethylene Glycol Nanofluid Blends, Renewable Energy: Accelerating the Energy Transition. Energy Systems in Electrical Engineering. Springer, Singapore, 15.11.23

Faculty interaction with outside world

Sr. No	Faculty Name	Date	Activity – Paper reviewed	Organization
1	Dr. Kishor Rambhad	06.12.2023	Review of Borehole Thermal Energy Storage Systems in Unsaturated Soils: Materials, Mechanism, and Future Development	Energy Storage (Wiley, ESCI)
2	Dr. Kishor Rambhad	05.12.2023	Development of statistical model for the indoor solar cooking system	International Conference on “Advances in Mechanical Engineering” 2023 (ICAME-23)
3	Dr. Kishor Rambhad	03.12.2023	Parameter impact and sensitivity analysis of a pumped hydro compressed air energy storage system	Applied Thermal Engineering (Elsevier, SCI)
4	Dr. Kishor Rambhad	27.11.2023	Exergy and Entransy Analysis of Diesel Engine Fuelled with Diesel-Nano-Catalyst Blend: A Review at Current Situation, Potential and Difficulties	International Conference on “Advances in Mechanical Engineering” 2023 (ICAME-23)
5	Dr. Kishor Rambhad	25.11.2023	Steps to smart design of thermal energy storage systems for buildings	Energy Storage (Wiley, ESCI)
6	Dr. Kishor Rambhad	27.10.2023	Bio-Based Nonadecane Microcapsules: A Promising New Option for Thermal Energy Storage" for Energy Storage	Energy Storage (Wiley, ESCI)
7	Dr. Kishor Rambhad	27.09.2023	Sustainable and Efficient Thermal Energy Storage with Lauric Acid@ Humic Acid-Formaldehyde Microcapsules and composites" for Energy Storage.	Energy Storage (Wiley, ESCI)
8	Dr. Kishor Rambhad	27.08.2023	Development of rotary dehumidifier with silica-gel-based composite desiccant	Jordan Journal of Mechanical and Industrial Engineering (Scopus, ESCI)
9	Dr. Kishor Rambhad	26.08.2023	Study on the performance of tube evaporative cooling dehumidifier based on CFD	Applied Thermal Engineering (Elsevier, SCI)
10	Dr. Kishor Rambhad	5.08.2023	A perspective on high-temperature heat storage using liquid metal as heat transfer fluid	Energy Storage (Wiley, ESCI)
11	Dr. Kishor Rambhad	15.07.2023	A review on solar thermal energy storage system using phase change materials	Energy Storage (Wiley, ESCI)

12	Dr. Kishor Rambhad	18.06.2023	Theoretical and experimental research on heat and mass transfer process of positive pressure condensation dehumidification for humid air	Applied Thermal Engineering (Elsevier, SCI)
13	Dr. Kishor Rambhad	31.05.2023	Safe Energy Using Hydraulic System Analysis at a Hydropower Plant	ICRAMEN-2023, Pune
14	Dr. Kishor Rambhad	31.05.2023	Study on Transverse Velocity of Incompressible Dusty Fluid in Electric Field	ICRAMEN-2023, Pune
15	Dr. Kishor Rambhad	29.05.2023	Test and Simulation of the Operational Characteristics of a Water Chiller Based on Dual Evaporation Temperatures	Applied Thermal Engineering (Elsevier, SCI)
16	Dr. Kishor Rambhad	03.05.2023	An Elementary Review of the Cascade Refrigeration Cycle for Cooling and Heating Simultaneously	ICRAMEN-2023, Pune

Faculty Achievements

S.N.	Name of Faculty	Achievement	Organisation	Date
1	Dr. Kishor Rambhad	Best Research Paper Award	SJCEM	15.09.2023
2	Dr. Kishor Rambhad	Mentor appreciation certificate for guiding "Aavishkar Project"	University of Mumbai	19.12.2023

Guest Lectures/ Expert Talk/ Workshops Organized

S.N.	Title of the Seminar/ Workshop/Training	Resource Person	From-To Date	Number of Participants	Learning Outcomes
1	Awareness Session on PLM by CEMS	Mr. Ramesh Yadav	04/09/2023	BE-48	Information about opportunities after PLM training

MOU Signed

S.N.	Organisation	Date
1	Sai Service Pvt. Ltd. Palghar	30.10.2023

Industrial Visits

S.N.	Name of Industry	Faculty Name	Students	Date of Visit
1	Printania offset Pvt. Ltd. Palghar	Mr. Sagar Patil	SE (8)	25.08.2023
2	Automation Expo 2023, Mumbai Exhibition Centre, Goregaon	Mr. Uday Prajapati Mr. Aniket Patil	BE-A/B (45)	23.08.2023
3	NPCIL, Tarapur	Mr. Uday Prajapati	BE-A/B (46)	06.04.2023
	Dipesh Engineering Works, Velgaon, Manor	Mr. Uday Prajapati Mr. Sangam Rane	BE-A/B (33)	16.09.2023
	Sai Service Pvt. Ltd., Palghar	Mr. Sagar Patil	TE (18)	27.09.2023



Visit to Printania offset Pvt. Ltd. Palghar



Visit to Automation Expo, Goregaon



Visit to NPCIL, Tarapur



Visit to Sai Service Pvt. Ltd., Palghar



Visit to Dipesh Engineering Works



Awareness Session on PLM by CEMS