

# ANNUAL REPORT

Academic Year : 2021-22



Department of Mechanical Engineering, SPCE

### *Department Vision*

To be a nationally recognized mechanical engineering department producing a blend of responsible and competent engineering graduates with research motivation and inculcation of human values.

### *Department Mission*

- To impart need based technical education by designing curriculum in collaboration with stakeholders.
- To develop linkages with renowned industries and research organizations in India and abroad for excellence in teaching and research.
- To provide state of art laboratories and facilities to encourage innovative ideas and lateral thinking and to impart field knowledge to mechanical engineering students.
- \* To encourage the students to participate in extracurricular activities for overall personality development and be a responsible person of the society.

### **Department Achievements ( 2021-22)**

During the academic year 201-22, the teaching learning activities were performed mostly in online mode due COVID-19 restrictions. College reopened in the month February 2022. The faculties and students worked dedicatedly and brought many laurels to the department. The department is proud of their efforts and hard work.

#### *Major Achievements by Faculties:*

- 02 Patent Granted
  - \* The patent granted (27/04/2021) by The Patent Office, GOI to Dr. S. B. Rane (SPCE) and Team, for their work on “A Machine for Sowing of Sugarcane utilising Ring Pit Method” , Patent Application no. 202121019588.
  - \* The patent granted (27/04/2021) by The Patent Office, GOI to Dr. S. B. Rane (SPCE) and Team, for their work on “Sugaromatic Machine for Sowing of Sugarcane Stems inside pits” , Patent Application no. 342821-001.
- 03 Patent Applied.
  - \* Patent application no. 342820-001 dated 27/04/2021 for “Sugaromatic Machine for Drilling Pits” in the name of Dr. S. B. Rane (SPCE) and Team.
  - \* Patent application no. 342388-001 dated 14/04/2021, for “Data Processing Equipment as well as Peripheral Apparatus and Devices” in the name of Dr. S. B. Rane (SPCE) and Team.
  - \* Patent application no. 201921015361 dated 04/08/2021, for “A system guide user to repair machine using Augmented Reality” in the name of Dr. Kiran Bhole.
- Dr. Santosh B. Rane for conducting Expert Session on “Unlocking Industrial Potential of Digital Twin” on 26th May, 2021 at Swinburne University, Sarawak Campus, Malaysia.
- A research grant of Rs 3180921 received by Dr. Kiran Bhole, from Science and Engineering Board, Department of Science and Technology, Government of India, for his research project titled “Investigation of Fractal Growth on the Curved Surfaces in Hele Shaw Flow”

- A collaborative research grant of Rs 17374192 received by Dr. Kiran Bhole in collaboration with Indian Institute of Technology Bombay and Institute for Stem Cell Science and Regenerative Medicine (InSTEM) Bangalore. Grant is received from Science and Engineering Board, Department of Science and Technology, Government of India for the research project titled “Development of machine for rapid fabrication of the biocompatible microneedles, followed by clinical testing”.
- Dr. Sharad Valvi received grant of 18.30 Lakh from SERB science and engineering research board government of India.
- Dr. Megha Janbandhu successfully defended her PhD Thesis from VJTI, Matunga.
- Dr. S S Umale received third rank in the poster presentation completion under SAFE Category at SIAT 2021(Symposium on International Automotive Technology 2021) on 5th October, 2021.
- In an ATAL sponsored program, Dr. Kiran Bhole conducted and coordinated following FDP programs:
  1. Elementary FDP on "3D Printing and Design" – 20 -24 September 2021
  2. Advanced FDP on “3D Printing and Design” – 20 - 24 December 2021
- IIIE Fellowship conferred on Dr. S B Rane by National Council of Indian Institution of Industrial Engineering for his outstanding contribution to the field of Industrial engineering and the institution. The award was presented in a function of IIIE 63<sup>rd</sup> National Convention, held during 04-05 December 2021 at Vadodara , Gujrat, India.
- Other achievements by faculties -
  - \* Dr. S S Umale delivered 40 Expert Talks in International /national conferences as a keynote speaker, and participated in an industrial webinar arranged by Society of Indian Automobile Manufactures on Electrical Vehicles in India.
  - \* Dr. R B Buktar, published 03 international journal papers, delivered 03 expert talk and 06 lectures in various national institutes.
  - \* Dr. N R Raykar attended 04 FDPs.
  - \* Dr. Kiran Bhole published 05 international journal paper, 03 papers in the international conference, worked as reviewer for—ASME Journal of Micro and Nano Manufacturing. ASME conference IDETC-CIE 2022, Conference MSEC 2022, International Journal of Environment and Waste Management and International Journal of Computer Aided Engineering and Technology , Delivered 05 Expert Talk in FDP, Workshop and STTP , Coordinated 05 FDP, STTP programs.
  - \* Dr R S Maurya published 01 paper in an international journal and attended 02 FDP programs.
  - \* Dr. S B Rane organized 23 activities for the development of students and faculties, keynote speaker in 12 international and national conferences, Conducted 3 sessions for the International Institute and was Jury for CII MILCA Award.
  - \* Prof. P K Muley, coordinated and organized online Marathi Bhasha Samvardhan Program One Week approved by DTE on 20-28 January, 2022, attended 01 FDP program and published 01 international conference paper.
  - \* Dr. Megha Janbandhu, participated in 02 FDP programs, organized two webinar and 01 research symposium.
  - \* Prof. S R Vankar, published 02 international conference paper, attended 01 FDP program and completed 02 value addition courses- R-programming and Interactive Dashboard using Google sheets.

### Student's Results:

Sr. No.	Nov.2021/ May 2022 Exam	No. of students appeared	No. of students passed (M + F)	Passing percentage (%)
1.	Semester –III	72	69 (52+17)	95.83
2.	Semester –IV	72	32 (26+4)	44.44
3.	Semester –V	75	69 (54+15)	92.00
4.	Semester –VI	80	53 (42+11)	66.25
5.	Semester –VII	74	71 (54+17)	95.95
6.	Semester –VIII	74	71 (54+17)	95.95

### Student Internship and Placement Data:

Number of students undergone internship = 45

No. of students placed through campus placement = 42

Maximum salary offered per annum= 6.5 Lakh

Average salary offered per annum= 5.5 Lakh

### Students Achievements:

- Mr Bhavesh Kumar Pasi, a PhD scholar, received platinum award under research category from CII MILCA Award 2022 for academics (27-28 &31 January 2022) for his research work “Implementation of Industry 4.0 in Indian Small Scale Manufacturing Industries” .
- Final year BTech (Mechanical) students – Ms. Girisha A. Agrawal, Mr. Mayank J. Bhalerao and Mr. Abhishek B. Tambe, under the supervision of Dr. Santosh B. Rane, secured 3rd Rank in National Level Project Competition “SPARK 2021” held on 4<sup>th</sup> July 2021 and organised by School of Mechanical and Civil Engineering, MIT Academy of Engineering, Pune. Project Title: Sugarcane Machine for Ring Pit Method of Sugarcane Cultivation .
- B.Tech. (Mech.) students, Mr. Chinmay Dabholkar, Mr. Jay Naik and Mr. Harsh Harale, published and presented their paper titled ‘Design of Battery Thermal Management System of Electric Vehicle for Indian Scenario’ in the International Conference on Mechanical, Aerospace and Production Engineering (ICMAPE - 2022), Mumbai, 09-10 April 2022
- B.Tech. (Mech.) students, Mr. Mandar Kodange & Samyak Waghmare, won 3rd prize in Student Poster Competition in a virtual SYMPOSIUM ON INTERNATIONAL AUTOMOTIVE TECHNOLOGY, 2021 (SIAT 2021) held from 29<sup>th</sup> September to 1<sup>st</sup> October 2021. The prize was under the category of Safe Mobility for their work titled: “Self-Activated Vehicle Turn Indicator for Collision Avoidance”.
- Mr. Anukul Anil Bokade of SPCE WAVE team secured 2<sup>nd</sup> position in AeroVaccine competition conducted by Techfest, IIT Bombay 2020-21.

### Department Activities:

- A National level One Week on-line course “Operation & Maintenance Best Practices: Heavy-Duty Machinery” was organized by ADANI Dahanu Thermal Power Station (ADTPS), Dahanu from 21-25 June 2021. The program was coordinated at SPCE by Prof. Parag K. Muley, Faculty Advisor, TESA-SPCE .
- SAE India Mumbai Chapter inaugurated in SPCE Andheri on 07 March,2022.
- A blood donation camp is organised on the Woman’s Day under MESA, co-ordinated by Dr. Megha Janbadhu.
- A MOU signed on 07/01/2021 between Department of Mechanical Engineering and D.Y.Patil Technical Campus, Faculty of engineering and Faculty of Management, Talsande, Kolhapur, to exchange the knowledge and resources.
- TESA-SPCE organised an online program on Sunday, 31 October 2021 to celebrate 146th Birth Anniversary of Sardar Vallabhbhai Patel. The program was enthusiastically attended by 140 students of S.Y., T.Y. and B.Tech. classes of Civil, Mechanical and Electrical Engg. Dept., SPCE.
- TESA-SPCE organised an online program on Sunday, 05 September 2021 to celebrate Teacher’s Day-2021 and Birth Anniversary of Dr. S. Radhakrishnan. The program was enthusiastically participated by 85 students of S.Y., T.Y. and B.Tech. Mechanical

