



Bharatiya Vidya Bhavan's  
**SARDAR PATEL COLLEGE OF ENGINEERING**

(Government Aided Autonomous Institute)  
Andheri (W) Mumbai – 400058  
<http://www.spce.ac.in>



## Mechanical Engg. Dept. Report

July 2017 – March 2018

This report presents the information about status of research and academic activities carried out by Mechanical Engineering Department (MED) for AY2017-18.

### 1) Mumbai University Minor Research Grant

Dr. R. S. Maurya, Dr. Kiran Bhole and Prof. Haseen Shaikh received Minor Research Grant from Mumbai University for Rs. 30,000/-, Rs. 35,000/- and Rs. 40,000/- respectively.



Dr. R. S. Maurya

### 2) RGSTC Research Grant (Second Year phase) to Dr. R. S. Maurya

Dr. R. S. Maurya received grant for Rs. 15.34 Lakhs for project titled "*Feasibility study of using solar powered cool boxes to improve the shelf life and hygiene of fish sold in retail markets in Mumbai*" from RGSTC, Govt. of Maharashtra. The project will be executed in collaboration Central Institute of Fisheries Education (CIFE), Mumbai. Currently the project is running in its second-year phase.



Dr. Kiran Bhole

### 3) DST Research Grant (Second Year phase) to Dr. K. S. Bhole

Dr. Kiran Suresh Bhole has received a grant of Rs 20 Lakhs in August 2016 from Science and Engineering Research Board of Department of Science and Technology, Government of India for his research project titled "*Design and Development of Three Axis Flexural Stages for Micro-Milling Workstation*". Currently the project is running in its second-year phase.



Prof. Haseen Shaikh

### 4) NBA Accreditation for B.Tech.(Mechanical Engg) Program

The B.Tech. (Mechanical Engineering) program was awarded accreditation (tier-I) by NBA for period of AY2017-18 up to 2019-20.

### 5) Faculty Qualification Upgrade

Dr. B.N. Bhasme received his doctoral degree from IIT Bombay. His thesis title is “An Experimental Investigation of Near Wake of a Circular Cylinder with a Short Plate in Asymmetric Tandem”.



### 6) Installation of Heat Pump Water Heating System at SPCE hostel in Collaboration with Emerson, India, by Mechanical Engineering Department of SPCE

On 6th March 2018 the heat pump based water heating system project was inaugurated by honourable principal Dr. P. H. Sawant and the Managing Director of Emerson Mr. Shirish Adi. The heat pump water heating system is sponsored by Emerson for carrying out comparative study against the conventional electric resistance water heating systems. Dr. R. B. Buktar, (Dean Academics and Professor Mechanical Engineering), Dr. Nilesh Raykar (HOD and Professor Mechanical Engineering), Dr. B. N. Bhasme (Project Investigator and Faculty Mechanical Engineering) were present from SPCE and Mr. B. B. Kale (General Manager, Product and Marketing, Emerson) and Mr. Rahul Pathak (Manager, Product and Marketing) were present from Emerson. The heat pump water heating system will provide hot water efficiently with energy saving which will be measured during the project.



### 7) MOU with FESTO, India

FESTO, India, has implemented several automation solutions in industries either through their customers manufacturing machines/equipment or directly in the manufacturing plants. MoU has been signed between FESTO, India, and Mechanical Engineering Department, SPCE on 06 December 2017. This association will enhance department's expertise in the Industrial Automation, Mechatronics and allied technologies.

### 8) Dr. Sudhakar Umale awarded Prestigious SAEINDIA GURU AWARD 2016-17

Dr. Sudhakar Umale, Mechanical Engineering Department, SPCE, has received the prestigious “SAEINDIA GURU AWARD 2016-17” from SAEINDIA Foundation at New Delhi on 5th December 2017 from Mr. Doug Patton, President, SAE International (USA). Prominent dignitaries from Industry, Government and Academics, related to mobility community in India attended the Award Ceremony.



### 9) Dr. Sudhakar Umale elected on Governing Body of SAEINDIA

Dr. Sudhakar Umale was elected as member of governing body of SAEINDIA, western section.

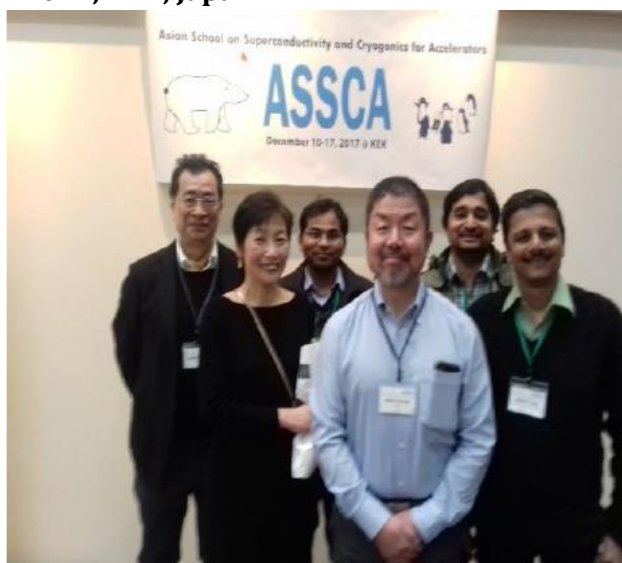
### 10) National Productivity Award to Dr. S. B. Rane and his PhD research scholars

Dr Santosh Rane, and his PhD research scholars Mr. Prathmesh Potdar and Mr. N. K Mishra received the National Productivity Award Platinum Grade in National Productivity Competition organized by Indian Institute of Industrial Engineering at JNEC on 15th Sept 2017. The title of the case study was "Design of Experiment and Monte Carlo Simulation Based Prediction Model- A Six Sigma Case Study of Productivity Improvement in Printing Industry".



### 11) Prof. Parag Muley participated in ASSCA-2017, KEK, Japan

Prof. Parag Muley who is currently pursuing Ph.D. at IIT Bombay, participated in the prestigious Asian School on Superconductivity and Cryogenics for Accelerators (ASSCA-2017). The school was organized by and held at the High Energy Accelerator Research Organization (KEK), Tsukuba, Japan, from 10/12/2017 to 17/12/2017. Total 39 candidates recommended by various Academic and Research Institutions of repute across the globe were selected for participation in ASSCA-2017. Prof. Parag Muley was recommended by IIT Bombay and has successfully completed this training program.



### 12) Prof. Kunal Bhavsar received ISHRAE Society Service Award

Prof. Kunal Bhavsar received ISHRAE Society Service Award as Youth Chair and Student Activity Chair of ISHRAE MUMBAI CHAPTER for year 2017-18.



### 13) Addition of new Value Added Courses in curriculum

The department offered new value added courses for the benefit of students during AY2017-18 which were enthusiastically opted by students. The name of these courses are: Internet of Things (IOT), CNC Programming, MEMS, Compliant Mechanisms, Advanced Solid Mechanics, Lean & Green Manufacturing, Digital Manufacturing and Introduction to Cryogenics.

#### **14)Introducing Augmented Reality (AR) as Innovative Teaching and Learning Tool**

Dr. R. B. Buktar introduced Augmented Reality (AR) as an innovative teaching and learning tool for conducting course of Engineering Graphics for 1<sup>st</sup> year C/M/E students. Software for AR, that is, ThingWorx® was adopted to develop the relevant teaching and learning tools.

#### **15)Collaboration with Mahindra & Mahindra, Nagpur for research projects**

Dr. R. B. Buktar has collaborated with Mahindra & Mahindra, Nagpur, to initiate research projects related to Augmented Reality and Digital Manufacturing for his doctoral and M.Tech. students.

#### **16)Summary of departmental interactions with outside world during 2017-18**

Number of research conferences/seminars attended = 5

Number of STTP/Workshops attended = 6

Number of guest lectures arranged = 7

Number of expert lectures delivered at other institutes = 9

Number of industrial visits organised = 8

Number of technical publications in international journals = 4

Number of technical publications in international conferences = 25

Number of research projects conducted in collaboration with industry = 4

Number of new courses offered in 2017-18 = 13

Number of certifications obtained on SWAYAM portal = 17

#### **17) Formation of “Thermal Engineering Students Association(TESA)”**

Thermal Engineering Students Association (TESA-SPCE), an academic forum of students of Mechanical Engineering Department, SPCE, was incepted on 30/10/2017 at SPCE Seminar Hall. Vision and Mission of TESA-SPCE is constant involvement of students, through participation and practice, in exploration of knowledge of Mechanical Engineering and allied multidisciplinary domains. Prof. U.N. Gaitonde, Department of Mechanical Engineering, IIT Bombay graced this occasion with his key note address and valuable guidance to our students followed by an interactive session with them.



### 18) Students' performance at Indian Karting Championship 2018



The SPCE racing junior team has performed exceptionally well at the Indian Karting Championship 2018. The team obtained 2nd place in Design presentation and 23rd place overall which is a huge step for students of just the first and second year of Engineering.

### 19) Students' performance at Formula Bharat 2018



The SPCE racing team performed well for a debut in the Formula Bharat 2018.

### 20) ISHRAE SPCE Achievements

- ISHRAE SPCE ISTL Team (Rakshit Shetty, Pawan Patel, Rohitkumar Gupta, Aditya Kamat, Shivani Mohite and Garima Chavan) has bagged 1st runner up prize at ISHRAE Student Technical League, ISTL-2017-18, event held at Mumbai.
- Team Pawan Patel(T.Y.B.Tech.) and Rakshit Shetty(Final Year B.Tech.) got First runner up in Jamboree which is Student Extravaganza for ISHRAE Mumbai Chapter Students.
- Aditya Kenge, T.Y.B.Tech. student, got 1st Runner Up in Technical Paper Presentation Award in Jamboree.