



# PDP

PANDIT  
DEENDAYAL  
PETROLEUM  
UNIVERSITY

# SOT

SCHOOL OF  
TECHNOLOGY

**NEWSLETTER**  
November & December  
2020



## SCHOOL OF TECHNOLOGY DEPARTMENT OF MECHANICAL ENGINEERING

### FACULTY ZONE

- > Publications - Journals
- > Patent Filed
- > Publications - Conference Papers
- > Publications - Book Chapter
- > Webinars Attended
- > Events/Webinar Organized

### FACULTY ZONE

- > Administrative Assignments
- > Consultancy
- > Professional Activities
- > DC Conducted
- > Webinars Delivered
- > Professional Visits
- > Training or Installation of Major Equipment

### STAFF ZONE

- > Training or Installation of Major Equipment

### STUDENT ZONE

- > Publications - Journals
- > Publications - Conference Papers
- > Webinars Attended
- > Recognition

## Editorial Team

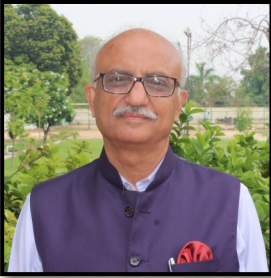


**Dr. Pankaj Sahlot**  
Faculty Coordinator



**Mrs. Pooja Nimavat**  
Staff Coordinator





## DIRECTOR'S DESK...

### **Prof. Sunil Khanna**

Dear Colleagues and Students:

Industry 4.0 (the fourth Industrial Revolution) encapsulates the future development trends to achieve more intelligent manufacturing. As we @ PDPU embark on this journey to towards Industry 4.0, I am Happy to Introduce the next issue of the Newsletter which not only share with all its readers the latest news and developments in the Department of Mechanical Engineering but would also be sensitizing all of us on the latest trends and developments in the Fourth Industrial Revolution.

The limitless power of technology to do good and the conviction of my faculty colleagues and students that the golden age is ahead of us - and not behind us – brings about the best in all of us which is reflected in their achievements.

Compliments to the editorial team for their passion for perfection and unbound creativity which makes me always look forward to the next edition of the Newsletter.

## HEAD OF THE DEPARTMENT'S DESK ...



### **Prof. Vishvesh Badheka**

It gives me immense pleasure to share Newsletter of the Mechanical Engineering Department, November & December 2020. Mechanical Engineering Department is the most happening Department of the School of Technology. Newsletter gives an overview of the activities carried out by students, staff and faculties during the month. You may please share your feedback, comments & suggestions to the coordinators.





# FACULTY

# PUBLICATIONS

## JOURNALS

Dr. Vishvesh Badheka Dr. Rakesh Chaudhari, Dr. Rajesh Patel, Mr. Kishan Fuse published the following Journal in the month of November - December 2020:

- ⇒ Harshadkumar H. Jadav, *V. Badheka*, Daulat Kumar Sharma, Gautam Upadhyay, "Effect of pin diameter and different cooling media on friction stir welding of dissimilar Al-Mg alloys", *Materials Today: Proceedings* (2020)  
<https://doi.org/10.1016/j.matpr.2020.09.553>. (Available online 23rd November 2020).
- ⇒ D.K. Sharma, V. Patel, *V. Badheka*, K. Mehta, G. Upadhyay, "Different reinforcement strategies of hybrid surface composite AA6061/(B4C+MoS<sub>2</sub>) produced by friction stir processing;" *Material Science and Engineering Technology*, 51, 1493; (2020)  
<https://doi.org/10.1002/mawe.202000130>. (First published: 10th November 2020).
- ⇒ *Rakesh Chaudhari*, Jay J. Vora, Vivek Patel, L. N. Lacalle, and D. M. Parikh. "Effect of WEDM Process Parameters on Surface Morphology of Nitinol Shape Memory Alloy", *Materials* 13, no. 21 : 4943. (IF~3.057) (2020).  
<https://www.mdpi.com/1996-1944/13/21/4943>
- ⇒ Khanna, Sakshum, Priyanka Marathe, Roma Patel, Sagar Paneliya, *Rakesh Chaudhari*, Jay Vora, Abhijit Ray, Rupak Banerjee, and Indrajit Mukhopadhyay, "Unravelling Camphor mediated synthesis of TiO<sub>2</sub> nanorods over shape memory alloy for efficient energy harvesting", *Applied Surface Science*: 148489, (IF~6.18) (2020)  
<https://www.sciencedirect.com/science/article/abs/pii/S0169433220332475>
- ⇒ KeyurKansara, V.K.Singh, *Rajesh Patel*, R.R.Bhavsar, A.P.Vora;, "Numerical investigations of phase change material (PCM) based thermal control module (TCM) under the influence of low gravity environment", 167, *International Journal of Heat and Mass Transfer*, December (2020).





## FACULTY

## PUBLICATIONS

### JOURNALS

- ⇒ **K. fuse, V. Badheka**, "Effect of Shoulder Diameter on Bobbin Tool Friction Stir Welding of AA 6061-T6 alloy", Materials today: proceedings: In press (2020).  
<https://doi.org/10.1016/j.matpr.2020.11.366>
- ⇒ **Fuse K, V. Badheka**, "Hybrid Self-Reacting Friction Stir Welding of AA 6061-T6 Aluminium Alloy with Cooling Assisted Approach", Metals. 2021; 11(1):16. 24 December (2020).  
<https://doi.org/10.3390/met11010016>
- ⇒ Harikrishna Rana, **V. Badheka**, Parth Patel, Vivek Patel, Wenya Li, Joel Anderson, "Augmentation of weld penetration by flux assisted TIG welding and its distinct variants for oxygen free copper", Journal of Materials Research and Technology, Volume 10,2021,Pages 138-151,ISSN 2238-7854, (2020).  
<https://doi.org/10.1016/j.jmrt.2020.12.009>. (Available online 9 December 2020).
- ⇒ Harshilkumar H. Jadav, **V. Badheka**, Daulat Kumar Sharma, Gautam Upadhyay, " A review on effect of friction stir processing on the welded joints" , Materials Today: Proceedings, ISSN 2214-7853, (2020)  
<https://doi.org/10.1016/j.matpr.2020.11.215>. (Available online 19 December 2020)



## PATENT FILED

**Dr M B Kiran** submitted and filed the following patents in the month of November - December 2020:

- submitted a Design Patent on Metrology & Inspection dated 20th November 2020.
- filed a Design Patent on Quality and inspection on 22nd December 2020.
- submitted a Design Patent in the area of Vision based non contact Inspection on 22nd December 2020.





## FACULTY

## PUBLICATIONS

### CONFERENCE PAPERS

*Kishan Ashok Fuse* presented research paper titled "Effect of Shoulder Diameter on Bobbin Tool Friction Stir Welding of AA 6061-T6 alloy" in International Conference on "Recent Advances in Materials and Manufacturing-ICRAMM 2020" at Velalar College of Engineering and Technology, Erode, Tamil Nadu held on 20th to 21st November 2020.

Omkar Halbe and *Harshal Oza*, presented the paper titled "Robust Continuous Finite-Time Control of a Helicopter in Turbulence" in IEEE Conference on Decision and Control, Jeju Island, Republic of Korea - dated 17th December 2020.

Parth Pandya, Ramesh Bhoraniya, *Ravi Kant* presented the paper titled "The Effect of the Forebody Shapes on the Stability of the Axisymmetric Boundary Layer" in the 8th International and 47th National Conference on Fluid Mechanics and Fluid Power (FMFP - 2020), IIT Guwahati dated 9th to 11th December 2020. Link to the website - <http://event.iitg.ac.in/fmfp2020/>

### BOOK CHAPTER

Dr. Rakesh Chaudhari and Dr. Rajesh Patel, Dr. M. B Kiran published the following Book Chapter in the month of November 2020:

- ⇒ *Rakesh Chaudhari*, Jay J. Vora, Alokesh Pramanik, and D.M. Parikh, "Optimization of Parameters of Spark Erosion Based Processes", Spark Erosion Machining; CRC Press : Taylor & Francis, Boca Raton, FL, USA : 190 - 216 (2020) <https://www.taylorfrancis.com/books/e/9780429085758/chapters/10.1201/9780429085758-12>.
- ⇒ Patel Jay, *Patel Rajesh*, "An Overview on the Prominence of Phase Change Material Based Battery Cooling and Role of Novel Composite Phase Change Material in Future Battery Thermal Management System" published in
  - ◆ "Electric Vehicles", Springer, Singapore, 26th November, 2020, pp 119-135
  - ◆ "Green Energy and Technology", Springer, Singapore; November 2020
- ⇒ *M.B.Kiran*, Martin Wynn. "Internet of Things: a discursive overview and guidelines for successful implementation", in the book "Digital Transformation, Industry Use Cases, and the Impact of Disruptive Technologies", Martin Wynn.
- ⇒ *M.B.Kiran*, "Internet of Things- Benefits and Challenges", IoT Protocols and Applications for Improving Industry, Environment and Society.





## WEBINARS ATTENDED

**Dr. Vishvesh Badheka** attended the following webinars during the month of November 2020:

- ⇒ Advanced High strength steel testing organised by Zwick/Roell on 19th November 2020.
- ⇒ Principles of Hardness testing organised by Zwick/Roell on 26th November 2020.
- ⇒ Intelligent revolution technology in welding by Fronius and Indian Institute of Metals on 28th November 2020 .

**Dr. M. B. Kiran** attended following online seminars during the month of November - December 2020:

- ⇒ “Branding in a Changing Socio-Cultural Landscape” organized by JIO Institute on 29th November 2020.
- ⇒ Artificial Intelligence organized by Microsoft on 14th December 2020.
- ⇒ Pulse Wave Velocity organized by AdInstruments on 21st December 2020.

**Dr Anirudh Kulkarni** attended a faculty development program on “Outcome Based Education” that was arranged by Inpods on 4th to 6th November 2020.

**Dr. Simran Jeet Singh** attended the following webinars during the month of November 2020:

- ⇒ “MATLAB Day Hands-on Workshop”, MathWorks India Pvt. Ltd., Online (Webex) dated 07th November 2020.
- ⇒ "ASME India Student Sections' Leadership Meet", ASME India Pvt. Ltd., Online (Zoom meeting) dated 26th November 2020.
- ⇒ ATAL-FDP on "Teaching-Learning using MATLAB", Department of Mechanical Engineering, School of Studies of Engineering & Technology, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur, Chhattisgarh, Online (Microsoft Teams), 24th to 28th November 2020.

**Dr. Harshal Oza** attended 59th IEEE Conference on Decision and Control, South Korea (held Online) as a session chair for the session on Flight Control, Session No ThB05 held during 14th to 18th December 2020.

**Dr. Rajesh Patel** attended Webinar on "Assessment and Accreditation Process of NAAC" organized by NAAC on 31st December 2020.





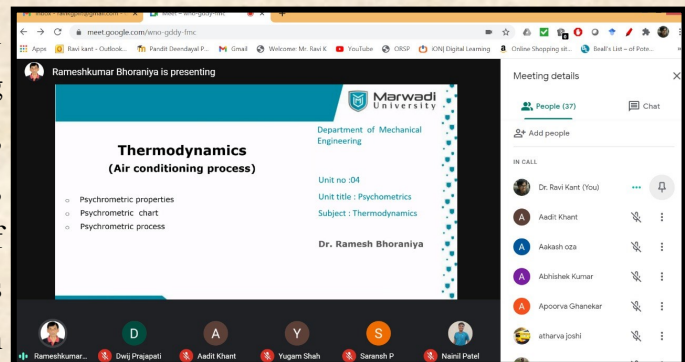
# FACULTY

## EVENTS /WEBINARS ORGANIZED

**Dr. Vishvesh Badheka** organized the following webinars during the month of November - December 2020:

- ⇒ Webinar on ‘Virtual Welding’ jointly with Lincoln Electric and IIW-PDPU Students’ Chapter on 10th November 2020.
- ⇒ An “Interactive session with first year M. Tech (Manufacturing Technology) students conducted on ‘Self-Professional Introduction’ dated 13th November 2020.
- ⇒ “High Speed Robotic Welding in Automotive Industry” jointly with Panasonic Smart Factory Solutions India (PSFSIN) and IIW-PDPU Students chapter talk was delivered by Mr. Kevin Rana on 4th December 2020.
- ⇒ Industry 4.0 Smart Factory Solutions (CNC machine remote data capture real time basis +Supply chain solutions +Warehouse solutions) jointly with Panasonic Smart Factory Solutions India (PSFSIN) and IIW-PDPU Students chapter delivered by Mr. Sangh Shekhar on 11th December 2020.
- ⇒ “Significance of Welding Mechanization/Automation” jointly with Gullco International India Pvt Ltd and IIW-PDPU student chapter delivered by Mr. Gaurav Lakhera on 24th December 2020.

**Dr. Ravi Kant** organized the webinar on “Thermodynamics - Air conditioning processes” by Dr. Ramesh Bhoraniya, Associate Professor, Marwadi University, Rajkot through Google Meet to ensure 10% of syllabus been taught by industry/academics expert for thermodynamics course dated 26th December 2020 .



**Department of Mechanical Engineering** organized

- ⇒ “Energy Conservation: Recent Innovations and Future Implications”, an Online webinar on the Occasion of “World Energy Conservation Day” in association with ASME-PDPU Chapter dated 14th December 2020.
- ⇒ Farewell function of Dr Satbhai Ojas conducted on 29th December 2020.







## FACULTY

## ADMINISTRATIVE ASSIGNMENTS

**Department of Mechanical Engineering** conducted the following Administrative activities in the month of November– December 2020:

- ⇒ PG orientation programme held on 5th November 2020.
- ⇒ Industry connect program held on 6th November 2020.
- ⇒ 8th Convocation of the University held on 21st November 2020.
- ⇒ Meeting with PhD scholars of department conducted on 9th December 2020.
- ⇒ Meeting with PG students of department conducted on 16th December 2020.
- ⇒ Alumni (MC16) interaction followed degree certificate distribution held on 21st December 2020.
- ⇒ Farewell function of Dr Satbhai Ojas conducted on 29th December 2020.
- ⇒ IQAC meeting held on 29th December 2020.

**Dr. M. B. Kiran** contacted and invited the following companies for the placement of M. Tech. Students :

- ⇒ Bosch Rexroth company Limited, Sanand, Ahmedabad, Gujarat dated 15th December 2020.
- ⇒ Central Manufacturing Technology Institute, Tumkur Road, Peenya, Yeshwantpur, Bangalore, Karnataka dated 16th December 2020.
- ⇒ National Aeronautics Limited, Old Airport Road, Domlur, Bangalore dated 27th December 2020.



## CONSULTANCY

**Dr. M. B. Kiran** conducted Executive Development Programs on 07th and 14th November 2020. given on 5th November 2020.



# FACULTY

## PROFESSIONAL ACTIVITIES

**Dr Vishvesh Badheka** took up the following professional activities in the month of November - December 2020:

⇒ “3D printed object” delivered by Mr Jayesh (Alumni - PDPU) and his team on 3rd November 2020



⇒ Acted as paper setter for the PhD entrance Exam (Metallurgical Engineering) at Gujarat Technological University (GTU) on 5th November 2020.

⇒ Attended Joint Management Committee Meeting between IACE-IIW held on 1st December 2020.

⇒ Mr. Kamal Dhandha defended PhD viva registered with Uka Tarsadia University under the guidance of Prof. Vishvesh Badheka on 17th December 2020 .

⇒ Attended Doctoral Progress Committee Meeting as an external expert (I) at L.D College of Engineering held on 29th December 2020 (II) Sardar Vallabhbai Patel Institute of Technology (SVIT) held on 30th December 2020.

**Dr. M. B Kiran** delivered Research Proposal presentation for Department of Science and Technology, New Delhi on 05th November 2020.

**Dr M B Kiran** attended PhD defence as a DC committee member on 06th November 2020.

**Mr. Kishan Ashok Fuse** reviewed a paper titled "Design and Analysis of Brake Disc Assembly for an FSAE Vehicle" for "Materials Today: Proceedings" Journal on 20th November 2020.





# FACULTY

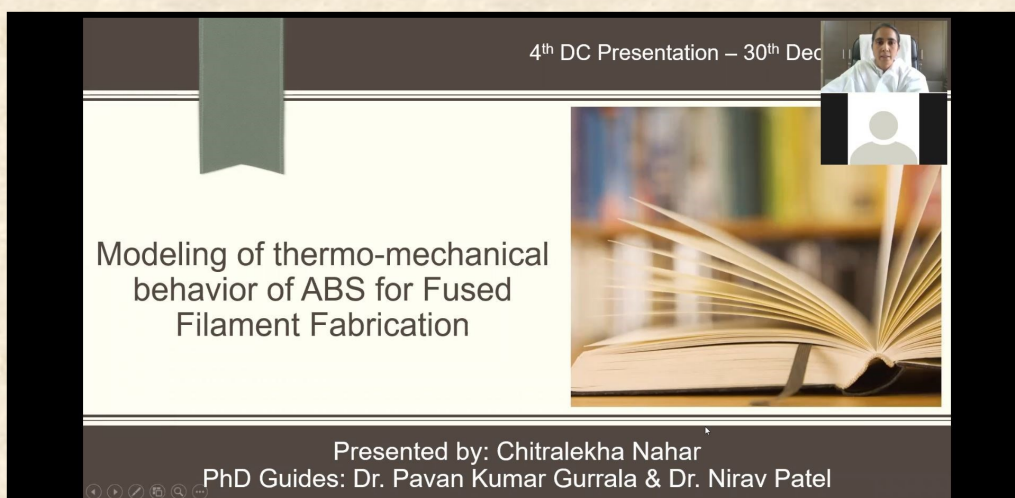
## DC CONDUCTED

DC Review	Date	PhD Scholar	External Expert	Guide/Supervisor
7th DC	22nd December 2020	Dave Vipulkumar Kantilal (16RME007)	Dr. M. A. Popat	Dr. Vinay Vakharia
2nd DC	24th December 2020	Mr.Niyant Pankajkumar Thakkar (19RME004)	Dr. Vikas Lakhera	Dr.Jatinkumar Patel & Dr.Anurag Mudgal
Synopsis	28th December 2020	Mr. Parth Prajapati (15RME004)	Prof. R.L.Jhala	Dr. Vivek K. Patel
3rd DC	29th December 2020	Mr. Jani Hardik Kirtanbhai (19RME002)	Prof. N. M. Bhatt	Prof. S. S. Kachhawaha & Dr. Nagababu Garlapati
6th DC	30th December 2020	Mr. Achyut Trivedi (16RME004)	Prof. K. M. Patel	Dr. Pavan Kumar G
4th DC	30th December 2020	Ms. Chitrlekha (18RM007)	Prof. K. M. Patel	Dr. Pavan Kumar G & Dr. Nirav Patel
2nd DC	30th December 2020	Ms. Deepika Harwani (18RME001)	Dr. Komal G. Dave	Dr. Vishvesh Badheka
5th DC	30th December 2020	Mr.Gaurav Aggarwal (15RME005)	Prof. R.N.Patel	Prof. S.S. Kachhawaha
7th DC	30th December 2020	Mr. Bhasuru Abhinaya Srinivas (17RME001)	Dr. Vikas Lakhera	Dr. Nagababu Garlapati & Prof. S. S. Kachhawaha
8th DC	31st December 2020	Mr.Kartikkumar Chandrakantbhai Thakkar (16RME006)	Prof. Srikant Wagh	Prof. S.S. Kachhawaha

4<sup>th</sup> DC Presentation – 30<sup>th</sup> Dec

Modeling of thermo-mechanical behavior of ABS for Fused Filament Fabrication

Presented by: Chitrlekha Nahar  
PhD Guides: Dr. Pavan Kumar Gurrala & Dr. Nirav Patel







## FACULTY

## WEBINARS DELIVERED

### OUTSIDE PDPU

**Dr. Vishvesh Badheka** delivered the invited talks in the month of November - December 2020:

- ⇒ ‘Welding for Additive Manufacturing’ organized by IndiaWelds SYNERGY2020 on 21st November 2020.
- ⇒ ‘EBW, Laser, Hybrid & solid state Welding Processes’ (Lesson-8) under 92nd Transition arrangement refresher course of Indian Institute of Welding on 2nd December 2020.
- ⇒ ‘Mechanized welding & robotics’ (Lesson-20) under 92nd Transition arrangement refresher course of Indian Institute of Welding on 12th December 2020.
- ⇒ Surface Composite Manufacturing using Solid State Processing during One day Webinar on "Functional Composite Materials: Scope and Challenges" sponsored by GUJCOST organized by Navrachana University, Baroda held on 15th December 2020.

**Dr. M. B. Kiran** delivered an Expert talk on “Metrology & Inspection” for the final year B. Tech. students of NIEI Technology, Mysore, Karnataka during 23rd to 28th November 2020.

**Prof. Surendra Singh Kachhwaha** delivered invited talks on:

- ⇒ “Emerging Energy Efficient Green Technologies for Biomass and Agricultural Applications” in an online One Day Seminar on “Emerging Energy Efficient Green Technologies for Biomass and Agricultural applications’ (sponsored under World Bank and ICAR funded by NAHEP-CAAST project), College of Agricultural Engineering and Technology & Centre for Agricultural Marketing Intelligence, Anand Agricultural University, Godhara, Gujarat dated 11th November 2020.
- ⇒ “Recent Advances in Cascaded Refrigeration Systems” in an online FDP on “Energy Conservation and Renewable for Sustainable Development held during 15th to 19th December 2020 sponsored by AICTE at LD College of Engineering, Ahmedabad on 19th December 2020 .

**Dr. Pankaj Sahlot** delivered an expert talk on “Recent Advancements in Friction Stir Welding: An Experimental and Numerical Analysis” in 5-days Faculty development program on Advancements in Manufacturing and Thermal Engineering organized by Govt. Engineering College Raipur (C.G.) and Rustamji Institute of Technology BSF Academy Tekanpur, M.P. on 2nd December 2020.





## FACULTY



## PROFESSIONAL VISITS OUTSIDE PDPU

Dr Vishvesh Badheka visited INOXCVA, Kalol on 18th November 2020 for ongoing CP project followed by plan visit and interaction with COO & mentor.




## PROFESSIONAL VISITS AT PDPU

*Dr. Vishvesh Badheka* coordinated the following professionals visit to Welding Research Lab (WRL) during the month of November 2020:

⇒ B. Tech Mechanical Engineering Students of Gokul University visited on 2nd November 2020.





# FACULTY

## PROFESSIONAL VISITS AT PDPU

*Dr. Vishvesh Badheka* coordinated the following professionals visit to Welding Research Lab (WRL) during the month of November 2020:

⇒ Mr Viren Parikh, Assistant professor, Navrachana University, Baroda, visited for ongoing collaborative work on 3rd November 2020.



⇒ Mr Devendra Gope of Fronius India Private Limited visited for technical discussion on 10th November 2020







## FACULTY



## PROFESSIONAL VISITS AT PDPU

*Dr. Vishvesh Badheka* coordinated the following professionals visit to Welding Research Lab (WRL) during the month of December 2020:

⇒ Dr Gaurang Joshi, Post-doctoral fellow at IPR visited for technical interaction on 22nd December 2020. He received his PhD degree during 8th convocation at PDPU and got selected as post-doctoral fellow at Institute for plasma research (IPR), Gandhinagar on 15th December 2020.



⇒ Dr. S.Sundar Manoharan, Director General , PDPU visited workshop and welding facility on 24th December 2020.



## TRAINING OR INSTALLATION OF MAJOR EQUIPMENT

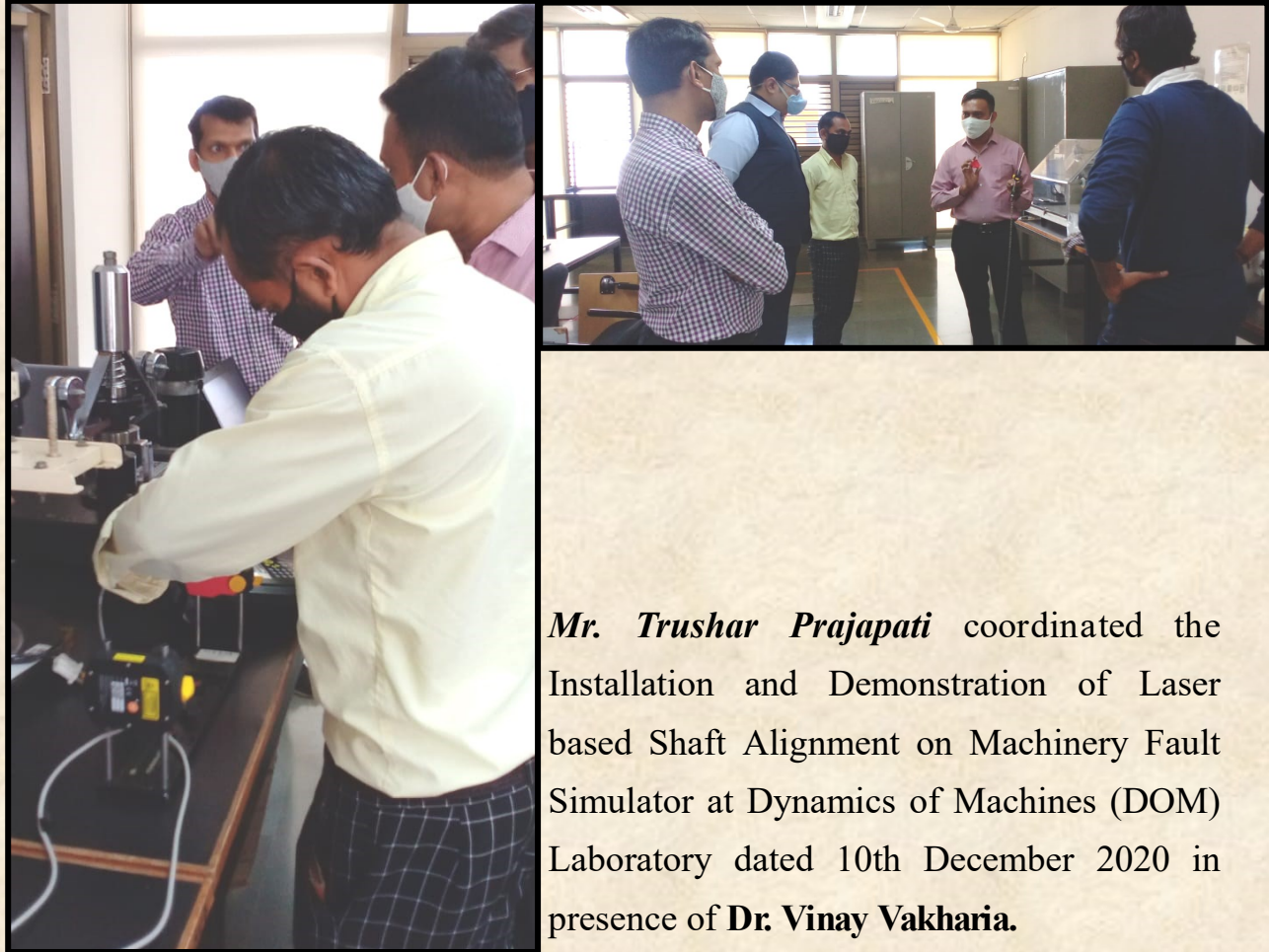
Installation and training of new Micro Friction Stir Welding machine held on 29th to 30th December 2020.







## TRAINING OR INSTALLATION OF MAJOR EQUIPMENT



*Mr. Trushar Prajapati* coordinated the Installation and Demonstration of Laser based Shaft Alignment on Machinery Fault Simulator at Dynamics of Machines (DOM) Laboratory dated 10th December 2020 in presence of **Dr. Vinay Vakharia**.



# STUDENTS

## PUBLICATIONS - JOURNAL

Keyur Kansara (18MMT004) published the following Journal Paper in the month of December 2020:

**Keyur Kansara**, V.K. Singh, Rajesh Patel, R.R. Bhavsar, A.P. Vora, Numerical Investigations of Phase Change Material (PCM) based Thermal Control Module (TCM) under the Influence of Low Gravity Environment, International Journal of Heat and Mass Transfer, (Vol. 167), (2020).

<https://doi.org/10.1016/j.ijheatmasstransfer.2020.120811>

# STUDENTS

## PUBLICATIONS - CONFERENCE PAPER

Aaditya Trivedi (17BME002) presented the following Conference Paper in the month of Dcember 2020:

**Aaditya Trivedi**, Dr. TP Singh, Dr. Kaushal Kishore, “Impact of COVID-19 on Stock Markets: An Investigation and Way Forward” in Symbiosis Institute of Management Studies Annual International Research Conference 2020 (SIMSARC'20) dated 21st to 23rd December 2020.

# STUDENTS

## WEBINAR ATTENDED

**Meet Gor**, attended the two week AICTE Sponsored FDP on "Frontiers of 3D Printing Technology and its Industrial Applications", during 7th to 19th December 2020 organized by Lakireddy Bali Reddy College of Engineering, Mylavaram, Andhra Pradesh under the guidance of **Dr. Pankaj Sahlot**.



# STUDENTS RECOGNITION

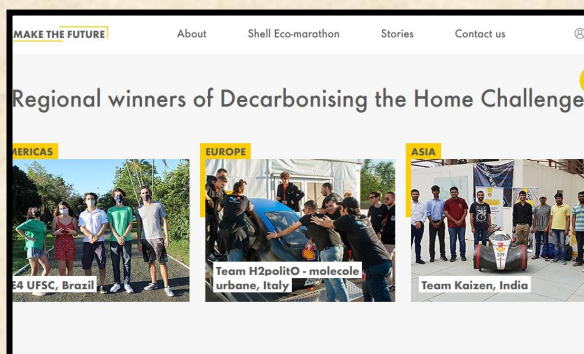
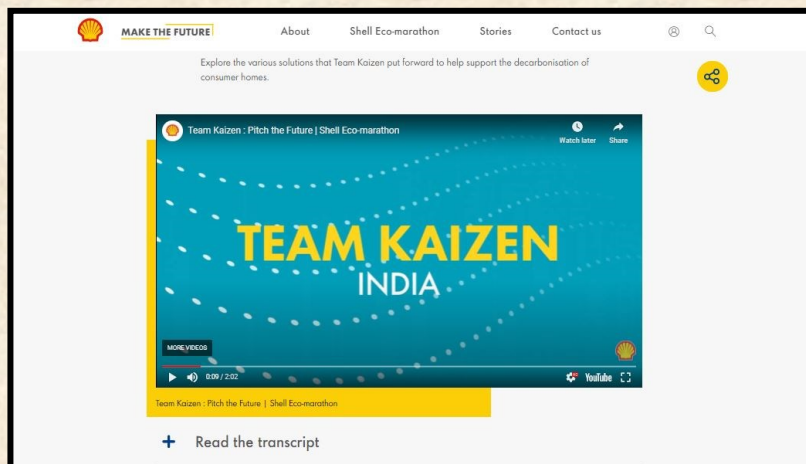
**Team Kaizen** representing PDPU and India at Shell Eco-Marathon has bagged the Title of Regional winner from Asia in the Pitch the Future Competition, Decarbonising the home Mini Challenge. In the competition the team was challenged to provide innovative technologies to decarbonize the home, thereby reducing the carbon footprint of the home and reduce carbon emissions from the home and add to the comfort of the people living in the home. From stage 1 the team was shortlisted among the top 3 teams from other 83 teams from all around the world and was declared to be 1st in Asia. Results of the Global winner will be announced on 10th December 2020.

## Website Link

<https://www.makethefuture.shell/en-gb/shell-eco-marathon/2021-programme/virtual-programme-2021/pitch-the-future/meet-the-teams/teamkaizen>

## Video Link

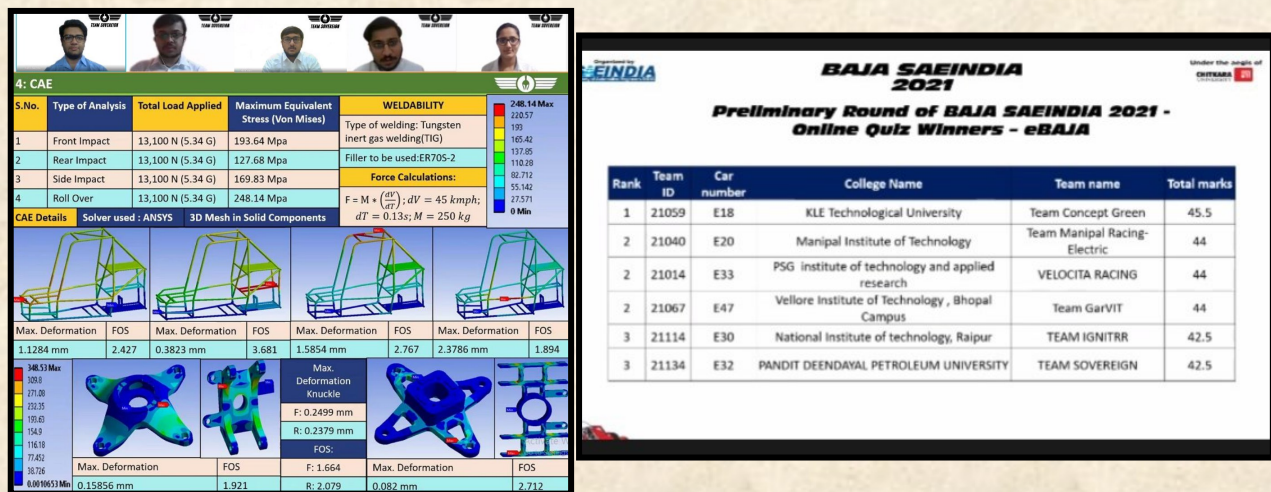
[https://www.youtube.com/watch?v=Ac56Y0RScfA&feature=youtu.be&ab\\_channel=Shell](https://www.youtube.com/watch?v=Ac56Y0RScfA&feature=youtu.be&ab_channel=Shell)





# STUDENTS RECOGNITION

**Team Sovereign** has secured AIR 3 in the Quiz round and AIR 6 in entire Preliminary Round in eBAJA category of BAJA SAEINDIA 2021 event hosted by SAEINDIA on 12th and 13th December, 2020. Additionally, we stood 1st in Gujarat in all rounds in this event. This achievement is the ripened fruit of hard-work, dedication and willingness of all the student members of Team Sovereign from Mechanical, Electrical & ICT departments under the guidance of faculty advisors Mr. Rahul Deharkar (Mechanical Department) and Dr. Alok Jain (Electrical Department) and fulltime support & cooperation of the various departments as well as the PDPU Management.



Following students from Department of Mechanical Engineering were awarded PhD degree during 8<sup>th</sup> Convocation held on 21<sup>st</sup> November 2020:

- ⇒ Mr. Krunal Mehta and Mr Gaurang Joshi under the guidance of Prof. Vishvesh Badheka.
- ⇒ Mr. Rakesh Chaudhary under the guidance of Dr. Jay Vora.
- ⇒ Mr. Ankit Oza under the guidance Dr. Abhishek Kumar.

