



PDEU

PANDIT DEENDAYAL ENERGY UNIVERSITY

Formerly Pandit Deendayal Petroleum University (PDPU)

SOT

SCHOOL OF
TECHNOLOGY

NEWSLETTER

June
2021



SCHOOL OF TECHNOLOGY DEPARTMENT OF MECHANICAL ENGINEERING

FACULTY ZONE

- > Advances in Mechanical Engineering
- > Publications - Journals
- > Patent
- > Conference
- > Webinar Attended
- > Funded Projects
- > Webinar Delivered

FACULTY ZONE

- > Administrative Assignments
- > Professional Activities
- > Webinar Organized
- > Visitors

STAFF ZONE

- > Administrative Assignments

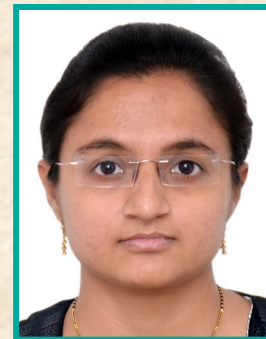
STUDENT ZONE

- > Webinar Organized
- > Publication - Conference Papers
- > Recognition
- > Projects

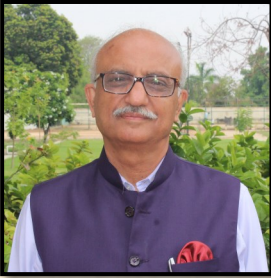
Editorial Team



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 @ PDEU (formerly PDPU) embark on this journey 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, June 2021. 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.



ADVANCES IN MECHANICAL ENGINEERING

INDUSTRIAL APPLICATIONS OF ROTOR-STATOR HYDRODYNAMIC CAVITATION REACTOR: A BREAKTHROUGH IN CAVITATION TECHNIQUES

- Dr. Surendra Singh Kachwaha

A popular and successful design of rotor–stator hydrodynamic cavitation reactor (RSHCR) (also known as shockwave power reactor (SPR)) system has been developed by Hydrodynamics Inc. (refer Fig. 1). The unit consists of concentric cylinders (inner one as rotor having cavities on the surface and outer one as stator). The rotor is revolved by a motor and generate cavitation in the annular space when fluid enters and exit from cavities on the surface of the rotor. The rotor surface having multiple cavities where fluid is pressurized and depressurized in sequence, causes hydrodynamic cavitation to occur. During cavitation, the fluid bulk receives energy dissipated by the collapse of bubbles in the vapour phase. The process allows for a continuous flow of fluid to replenish multiple cavities in the revolving rotor, thus ensures facilitating cavitation generation and product flow through the system. Pressurized condition during the process ensures continuous product contact with the rotor resulting in the fluid undergoing controlled cavitation. As the rotor set at a specified operational speed, the mass flow rate of product dictates the frequency of cavitation and the exit temperature.

RSHCR system has established and demonstrated significant potential for industrial-scale applications, because of its good scalability and synergistic effect as compared to other existing methods (e.g., ultrasound, electrochemical, biological, oxidation, photocatalyst, or photolysis treatments). RSHCRs are found to yield significant effects in large numbers of scaled-up applications, such as water disinfection, decomposition of waste activated sludge (WAS), degradation of organic matter, biofuel synthesis, fibrillation, intensification of biogas production based on pre-treatment of sustainable biomass, delignification, microbial inactivation applications, treatment of lignocellulosic materials (including delignification of wheat straw for paper manufacturing and delignification of wood to obtain cellulosic pulp fibres). This novel rotor–stator technology can be used in emulsification, homogenization, dissolution, dispersion, and grinding processes, as well as chemical reactions and cell disruption due to their high shear stress, elongation stress, turbulence, cavitation, and energy mixing.



ADVANCES IN MECHANICAL ENGINEERING

INDUSTRIAL APPLICATIONS OF ROTOR-STATOR HYDRODYNAMIC CAVITATION REACTOR: A BREAKTHROUGH IN CAVITATION TECHNIQUES

- Dr. Surendra Singh Kachhwaha

The another rotational cavitator from SPX Flow Technology has shown promising results for reducing spoilage microorganisms in apple juice, enhancing drying efficiency of high-solid milks, improving the surface hydrophobicity of soy protein isolate, reducing the viscosity of concentrated protein solutions, reduction of the counts of *B. coagulans* in skim milk concentrate etc.

Rotor–stator homogenisers, characterized by their highly localized energy dissipation, are widely used in process industries for dispersed-phase size reduction and reactive mixing. In this case, emulsion droplet size is mainly determined by the shear forces and HC generated in the turbulent zone. The size of these droplets generally decrease with increasing homogenization intensity and duration.

At present limited research has ever been carried out on the parameters that affect the performance of hydrodynamic cavitation reactors with rotor-stator mechanisms, and available information is limited to commercial advertisements. Though numerous application-based work has been published on RSHCRs, the amount and depth of the fundamental research on ARHCRs are still considerably limited. The economic viability of the newly developed process needs further assessment such as technology readiness level.

The CBBS (centre for biofuels and bioenergy studies) has developed Shock Wave Power Reactor (SWPR) to convert non-edible oils into biodiesel. Presently the experimental studies are under progress.

Keywords: Hydrodynamic cavitation; RSHCR; Rotor-Stator; Industrial applications; homogenizer;

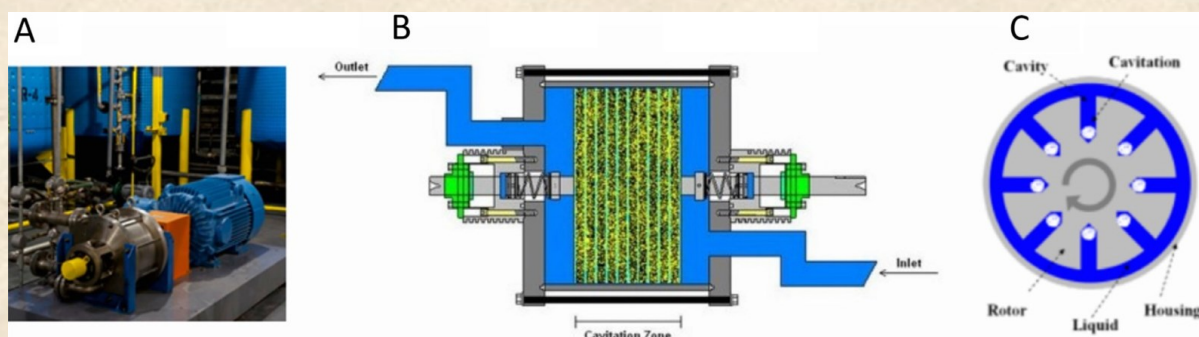


Fig. 1: Schematic of a Shock Wave Power Reactor used in Industry applications.



FACULTY

PUBLICATIONS

JOURNALS

Department of Mechanical Engineering published the following Journal Papers during the month of June 2021:

⇒ Kush Thakar, **Rajesh Patel**, Gaurav Patel, "Techno-economic analysis of district cooling system: A case study", Journal of Cleaner Production, Vol-313, June (2021).

⇒ **Kishan Fuse, Vishvesh Badheka**, Vivek Patel, Joel Andersson, "Dual sided composite formation in Al 6061/B4C using novel bobbin tool friction stir processing", Journal of Materials Research and Technology, Volume 13,2021, Pages 1709-1721,ISSN 2238-7854, <https://doi.org/10.1016/j.jmrt.2021.05.079> Available online 5 June (2021).

⇒ V. K. Parikh, **V. J. Badheka**, A. D. Badgujar & N. D. Ghetiya, "Fabrication and processing of aluminum alloy metal matrix composites", Materials and Manufacturing Processes. Published online: 11 Jun (2021).

DOI: 10.1080/10426914.2021.1914848

⇒ Rutvik Ghiya, **Vishvesh J. Badheka**, "A review of friction stir lap welding of polymer to metal," Polymer-Plastics Technology and Materials, Published online: 17 Jun (2021) 10.1080/25740881.2021.1937646



PATENT

Dr. M. B. Kiran published a Design Patent on the title "Lighting Fixture" with Registration No. 332432-001 granted by Indian Patent Office on 9th June 2021.



FACULTY

CONFERENCE PAPERS

Dr. Ravi Kant presented the following Posters at the 16th OpenFOAM Workshop 2021 (online mode) at University College Dublin, Ireland during 8th to 11th June 2021:

- ⇒ **Ravi Kant** and **Anirudh Kulkarni**, “Linear stability analysis of plane poiseuille flow using OpenFOAM”,
- ⇒ Ninad mavani, Samarth Acharya and **Ravi Kant**, “Linear stability analysis of boundary layer flow using OpenFOAM”

Dr. M. B Kiran presented the following papers at 11 Annual International conference in Singapore :

- ⇒ **M. B. Kiran**, “Additive manufacturing of Titanium alloys”, ISSN 2169-8767 -U.S. Library of Congress, Scopus (2021)
- ⇒ **M. B. Kiran**, “Reliability Centered Maintenance of Circular loom”, ISSN 2169-8767 -U.S. Library of Congress, Scopus (2021)
- ⇒ **M. B. Kiran**, “Application of Artificial Intelligence in Additive Manufacturing”, ISSN 2169-8767 -U.S. Library of Congress, Scopus (2021)
- ⇒ **M. B. Kiran**, “A Novel On-line Surface Roughness measuring method”, ISSN 2169-8767 - U.S. Library of Congress, Scopus (2021)
- ⇒ **M. B. Kiran**, “Lean Transformation in Electricity Transmission Tower Manufacturing Company-A Case Study”, ISSN 2169-8767 -U.S. Library of Congress, Scopus (2021)
- ⇒ **M. B. Kiran**, “Productivity assessment studies in Solenoid valve manufacturing Company – A Case Study” , ISSN 2169-8767) -U.S. Library of Congress, Scopus (2021)

Dr. Pankaj Sahlot published the following conference papers in the month of June 2021

- ⇒ Harsh Soni, Meet Gor, Gautam Singh Rajput, **Pankaj Sahlot**, “A comprehensive review on effect of process parameters and heat treatment on tensile strength of additively manufactured Inconel-625”, Materials Today: Proceedings, (2021). <https://doi.org/10.1016/j.matpr.2021.06.126>.
- ⇒ Parth Mehta, **Pankaj Sahlot**, “Application of phase change materials in 4D printing: A review”, Materials Today: Proceedings, ISSN 2214-7853 (2021). <https://doi.org/10.1016/j.matpr.2021.05.664>.



FACULTY

WEBINARS ATTENDED

Dr. Rajesh Patel attended the following webinars organised by IIC, PDEU in the month of June 2021:

⇒ “Technological trends in energy storage system market” by Dr. Gaurav Patel and Dr. Brijesh Tripathi dated 26th June 2021.

⇒ “Energy Storage System- Opportunities and challenges in India” by Dr. Rahul Walawalkar organized by IIC, PDEU dated 19th June 2021.

Dr. Vishvesh Badheka attended webinar on “Additive Manufacturing for Medical Applications” by Dr. Jia Deng, Faculty at T. J. Watson College at Binghamton University organized by the School of Engineering & Technology, Navrachana University, Vadodara in collaboration with Thomas J. Watson College of Engineering and Applied Science, Binghamton University dated 25th June 2021.



FUNDED PROJECT

Dr. Vinay Vakharia submitted the project “Parametric Sensitivity Analysis of 1D and 2D Hydrodynamic Modeling for Flood Assessment and Mitigation using High Resolution UAV based DEM and Machine Learning Techniques funded by WOMEN SCIENTISTS SCHEME (WOS-A) Earth sciences category amounting to Rs. 26.58 Lakhs dated 15th June 2021 (PI-Ms Mrunalini Rana) (Co- PI Dr Vinay Vakharia and Dr Dhruvesh Patel).

FACULTY

WEBINARS DELIVERED

Dr. Vishvesh Badheka delivered the following Invited Talks in the month of June 2021:

- ⇒ “Material Characterization Techniques” at Amrutvahini College of Engineering, Sangamner invited for the expert talk followed by M. Tech Admission at PDEU on 1st June 2021.
- ⇒ “Welding for Additive Manufacturing” at Noble Group of Institutions, Junagadh followed by M. Tech admission at PDEU on 17th June 2021.

Dr. Pankaj Sahlot delivered an expert talk on “Additive Manufacturing/3D Printing: A Technology to Print the Future” organized by School of Technology, Pandit Deendayal Energy University (PDEU) on 27th June 2021.



Prof. S S Kachhwaha delivered an invited talks titled:

- ⇒ “Application of Cavitation Techniques to Enhance Bioenergy Production”, in an Online training course on Green Energy Sources and Clean Technologies (07 to 11 June, 2021) organized by Rural Development Department & Electrical Engineering Department NITTTR, Chandigarh dated 10th June 2021.
- ⇒ “Application of Process Intensification Techniques for Renewable Fuel Production” as a Speaker for Webinar Series 2/2021: Renewable Fuel in conjunction with 51ST HICOE-CBBR Seminar Series & 8th Inter-University & Industry Network Malaysia Biomass to Fuel and Material Meeting organized at UTP, Malaysia dated 30th June 2021.

Dr. M.B. Kiran delivered an invited talk on “Vision Based Inspection System” organized at Galgotia University dated 24th June 2021.

Dr. Vinay Vakharia delivered the following expert talks during the month of June 2021:

- ⇒ “Machine learning applications for vibration analysis” organized by GD Goenka University, Gurgaon dated 28th June 2021.
- ⇒ “Fault Diagnosis using Machine Learning techniques” Bhabha University, Bhopal, MP dated 29th June 2021.



FACULTY

ADMINISTRATIVE ASSIGNMENTS

Dr. Vishvesh Badheka carried out the following administrative activities during the month of June 2021 :

- ⇒ Convener of the 1st International Conference on Additive Manufacturing and Advanced Materials (AM2-2021).
- ⇒ Member of मार्गदर्शन committee, mentoring to other institutions,
- ⇒ Member of the Let's Hack 4.0 - EV & Energy Storage hackathon by PDEU & PDPU IIC
- ⇒ Roadmap presentations by Faculty members of Department of Mechanical Engineering jointly with Director SoT.
- ⇒ Student Interaction Meetings (UG) meeting with MC18, MC19, AE20 held on 11th June 2021.
- ⇒ B. Tech admission meeting held on USPs of UG course, dated 14th June 2021.
- ⇒ Moderator for Research Symposium held on 18th June 2021.

Dr. Vinay Vakharia carried out the following administrative activities during the month of June 2021 :

- ⇒ Interacted with following companies for One Year CP and Summer Internship for M. Tech Design students during 18th to 26th June 2021. 08 students from M. Tech Design selected for summer internship and one year CP.
Sahjanand Laser, Gandhinagar Ceat Ltd, Vadodara Xylem water solutions, Vadodara
- ⇒ Prepared and submitted 5 year plan for CoE on behalf of Design group of Department
- ⇒ Shared information about design research group with prospective Ph.D. candidates for admission webinar conducted by department.

Dr. Pankaj Sahlot attended admission meeting with the central admission team to discuss the plan to execute more department specific webinars on 29th June 2021.

Dr. M.B. Kiran interacted with the following companies for assisting M. Tech students regarding placement during the month of June 2021:

- ⇒ Bharat Fritz Werner's Limited, Bangalore
- ⇒ Mico (Bosch) India Limited, Bangalore
- ⇒ SPC Lifescience Pvt. Ltd., Ankleshwar
- ⇒ Alfred Herbert (India) Limited, Bangalore
- ⇒ RRB Energy Ltd., Chennai



FACULTY

PROFESSIONAL ACTIVITIES

Dr. Vishvesh Badheka took up the following Professional Activities during the month of June 2021:

- ⇒ Appointment as Question Paper Setter for Ph.D. Entrance Exam 2021-22 for Metallurgical Engineering under Gujarat Technological University (GTU) dated 10th June 2021.
- ⇒ Served as Reviewer and Session Chairman during Second International Conference on “Recent Advances in Manufacturing (RAM-2021)” organized by Department of Mechanical Engineering, SVNIT, Surat during 10th to 12th June 2021.
- ⇒ Invited as External Member of BoS of Department of Material and Metallurgical Engineering, Indus University. The first meeting was held on 17th June 2021.

Dr. M.B. Kiran received the following recognitions in the month of June 2021:

- ⇒ He reviewed a book chapter titled " Impact of Cloud Computing on IT Support Function, and received a certificate of appreciation from IGI Global publisher on 6th June 2021.
- ⇒ He was invited to become a member of technical committee for 3rd International Conference on Machine Learning and Human-Computer Interaction - MLHMI 2022 conference (18-22 March 2022) vide letter dated 10th June 2021.

Dr. Vinay Vakharia was invited to become a member of technical committee and reviewer for ne Learning and Intelligent Systems MLIS 2021 to be organized in Xiamen, China dated 18th June 2021.

Dr. Anurag Mudgal served as reviewer and received Certificate of Excellence in Reviewing for Asian Journal of Geological Research dated 21st June 2021.

FACULTY

EVENTS /WEBINARS ORGANISED

Department of Mechanical Engineering organised the following webinars on the topics :

PDEU PANDIT DEENDAYAL ENGINEERING UNIVERSITY
SOT SCHOOL OF TECHNOLOGY

THERMAL SPRAY COATINGS

Organizer: Department of Mechanical Engineering, SoT, PDEU

WEDNESDAY, 9TH JUNE 2021
 11:00 AM to 12:00 PM

Speaker: **Dr. Ramesh Guduru**
 Moderators: **Dr. MB Kiran** and **Dr. Garlapati Nagababu**

REGISTER NOW

zoom

⇒ “Thermal Spray Coatings” delivered by **Dr. Ramesh Guduru** as a part of M. Tech Admissions Webinar moderated by **Dr. M.B. Kiran** and **Dr. Garlapati Nagababu** dated 9th June 2021.

⇒ “Shape Memory Alloys” delivered by **Dr Jay Kumar Vora** and **Dr. Rakesh Chaudhari** as a part of M. Tech Admissions Webinar moderated by **Dr. M.B. Kiran** and **Dr. Garlapati Nagababu** dated 16th June 2021.

Social Media - 229

SOT SCHOOL OF TECHNOLOGY

PDEU PANDIT DEENDAYAL ENGINEERING UNIVERSITY
 NAAC A Grade
 Gandhinagar, Gujarat
 Formerly Pandit Deendayal Patel Institute of Technology (PDI)

WEBINAR

Shape memory alloys- The futuristic Material in Manufacturing sector

Organizer: Department of Mechanical Engineering, SoT, PDEU

16th JUNE, 2021 | WEDNESDAY
 11:00 AM - 12:00 PM

SPEAKERS

DR. JAYKUMAR VORA and **DR. RAKESH CHAUDHARI**

MODERATOR
DR. MB KIRAN and **DR. GARLAPATI NAGABABU**

REGISTER NOW

zoom

PDEU PANDIT DEENDAYAL ENGINEERING UNIVERSITY
SOT SCHOOL OF TECHNOLOGY

Applied Machine Learning and Image Processing Techniques in Mechanical Engineering

Organized by Department of Mechanical Engineering, SoT, PDEU

26 | 06 | 2021
 11:00 AM to 12:00 PM

SPEAKER
DR. VINAY VAKHARIA
 (Assistant Professor, Dept. of Mechanical Engineering, SOT, PDEU)

MODERATORS
DR. MB KIRAN and **DR. GARLAPATI NAGABABU**

REGISTER NOW

MS Teams

⇒ “Applied Machine Learning and Image Processing Techniques in Mechanical Engineering” delivered by **Dr. Vinay Vakharia** as a part of M. Tech Admissions Webinar moderated by **Dr. M.B. Kiran** and **Dr. Garlapati Nagababu** dated 26th June 2021.

FACULTY

EVENTS /WEBINARS ORGANISED

Department of Mechanical Engineering organised the following webinars on the topics :

PDEU PANDIT DEENDRAL ENERGI UNIVERSITY
SOT SCHOOL OF TECHNOLOGY

CFD - A tutorial on finite difference method via OCTAVE Online
Organized by Department of Mechanical Engineering, SOT, PDEU
23rd June 2021 | TIME : 04:00 PM to 05:00 PM

Two vertical steel plates in a fluid container
Flat $u(y) = 7$
Bottom plate is dragged with constant velocity

SPEAKER:
DR. RAVIKANT
Assistant Professor
Dept. of Mechanical Engineering, SOT, PDEU

MODERATORS:
DR. M.B. KIRAN
DR. GARLAPATI NAGABABU

REGISTER NOW

⇒ “CFD - A tutorial on finite difference method via MATLAB” delivered by **Dr. Ravi Kant** as a part of M. Tech Admissions Webinar moderated by **Dr. M.B. Kiran and Dr. Garlapati Nagababu** dated 23rd June 2021.

⇒ “Tribology and Surface Engineering” delivered by **Dr. Krunal Mehta** as a part of M. Tech Admissions Webinar moderated by **Dr. M.B. Kiran and Dr. Garlapati Nagababu** dated 24th June 2021.

PDEU PANDIT DEENDRAL ENERGI UNIVERSITY
SOT SCHOOL OF TECHNOLOGY

TRIBOLOGY AND SURFACE ENGINEERING
Organized by Department of Mechanical Engineering, SOT, PDEU
24th June 2021 | TIME : 11:00 AM to 12:00 PM

SPEAKER:
DR. KRUNAL MEHTA
Assistant Professor
Dept. of Mechanical Engineering, SOT, PDEU

MODERATORS:
DR. M.B. KIRAN
DR. GARLAPATI NAGABABU

REGISTER NOW

Revised Social Media - 235

SOT SCHOOL OF TECHNOLOGY

PDEU PANDIT DEENDRAL ENERGI UNIVERSITY
NAAC 'A' Grade Formerly Pandit Deendral Puri Mahavidyalaya (PDMU)

WEBINAR
Solar Drying Systems and Potential Applications
Organized by Department of Mechanical Engineering

30th JUNE, 2021 | WEDNESDAY
11:00 AM to 12:00 PM

SPEAKER
DR. JATIN PATEL
Associate Professor
Department of Mechanical Engineering, School of Technology, PDEU

MODERATOR
DR. M.B. KIRAN
DR. GARLAPATI NAGABABU

Register Now!

zoom

⇒ “Solar Drying Systems and Potential Applications” delivered by **Dr. Jatin Patel** as a part of M. Tech Admissions Webinar moderated by **Dr. M.B. Kiran and Dr. Garlapati Nagababu** dated 30th June 2021.

FACULTY

EVENTS /WEBINARS ORGANISED

Department of Mechanical Engineering organised the following webinars on the topics :

PDEU PANDIT DEENDAYAL ENERGY UNIVERSITY

SOT SCHOOL OF TECHNOLOGY

WEBINAR

Ph.D. Counselling Session for Mechanical Engineering

22nd June 2021, 3:00 PM Onwards

Speakers:

- Dr. Rajesh Patel (Dean, FoET)
- Prof. Vishvesh Badheka (HOD, Mechanical)
- Prof. Surendra S Kachhwaha (Ph.D. Coordinator)

Panelists:

- Dr. Anurag Mudgal
- Dr. Ramesh Guduru
- Dr. Harshal Ozha
- Dr. Vinay Vakaria
- Dr. Jatin Patel
- Dr. Jay Vora
- Dr. M B Kiran
- Dr. Vivek Patel

REGISTER NOW

on MS Teams

2nd “PhD counselling session for Mechanical Engineering” coordinated by *Prof. S. S. Kachhwaha* on 22nd June 2021.

VISITORS AT PDEU

Dr. Vishvesh Badheka coordinated the visit of the following delegates at Welding Research Lab:

- ⇒ Mr. Keyur Tandel, Faculty, Government Engineering College (GEC), Dahod (PhD scholar of SVNIT) conducted experiments at welding research lab facility during 22-23rd June 2021.
- ⇒ Ms. Devangi Desai, Faculty, SSGEC, Bhavnagar visited lab facility followed technical interaction on 28th June 2021.



FACULTY

FACULTY LEFT FOR BETTER PROSPECTS

Name of the Faculty	Date of Joining	Date of Relieving	Current Affiliation
Dr. Vivek V Patel	20-01-2014	31-08-2020	Researcher Department of Engineering Science Division of Welding Technology Högskolan Väst (University West) Trollhättan 461 86, Sweden
Dr. Ojas Satbhai	01-08-2019	31-12-2020	Post Doctoral Fellow, IIT Bombay
Dr. Vipindas K	10-09-2019	11-01-2021	Assistant Professor Mechanical Engineering Department Indian Institute of Information Technology Design and Manufacturing, Kurnool
Dr. Vivek Kumar	06-03-2019	31-05-2021	Assistant Professor, MPAE Division, Mechanical Engineering Department Netaji Subhas University of Technology (Govt. of NCT of Delhi) Sec-3, Dwarka, New Delhi 110078, India
Dr. Simran Jeet Singh	06-03-2019	31-05-2021	Assistant Professor, MPAE Division, Mechanical Engineering Department Netaji Subhas University of Technology (Govt. of NCT of Delhi) Sec-3, Dwarka, New Delhi 110078, India
Dr. Kush P Mehta	17-06-2013	30-06-2021	Associate Professor, Mechanical Engineering, School of Energy Systems, LUT University, Finland



FACULTY

DC CONDUCTED

DC Review	Date	PhD Scholar	External Expert	Guide/Supervisor
8th	18th June 2021	Mr. Vipul Dave (16RME007)	Dr. M. A. Popat	Dr. Vinay Vakharia
Final Viva	21st June 2021	Mr. Karan Motwani (14RME02P)	Prof. R. N Patel	Dr. Jatin Patel
Synopsis	21st June 2021	Mr. Kartikkumar Chandrakantbhai Thakkar (16RME006)	Prof. Srikant Wagh	Dr. S.S. Kachhawaha
6th	26th June 2021	Mr. Ravikumar Pravinkumar Patel (18RME006)	Dr. Rajesh Patel	Dr. Garlapati Nagababu, Dr. S.S. Kachhwaha
1st	28th June 2021	Milan Bhupendrabhai Raningaa (20RME004)	Dr. Jaichander Swaminathan	Dr. Anurag Mudgal Dr. Vivek K. Patel
3rd	28th June 2021	Dhavalkumar Rajeshbhai Patel (20RME002)	Dr. Jaichander Swaminathan	Dr. Anurag Mudgal Dr. Vivek K. Patel
8th	29th June 2021	Mr. Rahul Vitthal Deharkar (16RME009)	Dr. Subarna Maiti	Dr. Anurag Mudgal
3rd	29th June 2021	Niyant Pankajkumar Thakkar (19RME004)	Dr. Vikas Lakhera	Dr Jatin Patel Dr. Anurag Mudgal
4th	29th June 2021	Mr. Jani Hardik Kirtanbhai (19RME002)	Dr N M Bhatt	Prof. S.S. Kachhwaha, Dr. Garlapati Nagababu
3rd	30th June 2021	Mr. Dipak Ankoliya (20RME001)	Dr. Hiren D. Raval	Dr. Anurag Mudgal
1st	30th June 2021	Mr. Pravesh Chandra (20RME010)	Dr. Vijay Matawala	Dr. Anurag Mudgal Dr Jatin Patel



ADMINISTRATIVE ASSIGNMENT

Mr. Trushar Prajapati under the guidance of Prof. Surendra Singh Kachhwaha coordinated the photography session at CBBS Lab (Centre Of Excellence) as per the directives from DG office on 09th June 2021.



STUDENTS

WEBINAR ORGANISED

Dr. Vishvesh Badheka conducted the webinar on the topic “Weldability of Non-Ferrous Materials” delivered by Prof T. K. Pal, Ex-Jadavpur University, Kolkata, on 2nd June 2021 under IIW-PDEU Student Chapter.

PUBLICATIONS - CONFERENCE PAPERS

The following Conference Papers were presented by the students of Mechanical Engineering at Second International Conference on “Recent Advances in Manufacturing (RAM-2021)” under the guidance of **Dr. Vishvesh Badheka** in the month of June 2021:

- ⇒ “Welding Processes for Additive Manufacturing – Processes Materials and Defects”, presented by **Falak Patel (18BME023)**, **Bhumi K Patel (18BME010)**, **Vishvesh Badheka** at (Ref: RAM2021_186)
- ⇒ “Review on Friction Based Additive Manufacturing Processes: Types, Defects and Applications” presented by **Bhumi K Patel (18BME010)**, **Falak Patel (18BME023)**, **Vishvesh Badheka** (Ref: RAM2021_187)

STUDENTS RECOGNITION

Mr. Ninad Umesh Killedar (17BME056) received an offer for Online Educational Internship Opportunity by BB Advisory from 14th June 2021.

Team Czar

[Captain: **Vyom Shah (18BME123)** Faculty Advisors: **Mr. Rahul Deharkar and Dr. Vivek Patel**]

BAJA SAEINDIA 2021:

Team Czar was the first runner up (AIR-2) for the Brake Test Performance in M-Baja category at BAJA SAEINDIA 2021 which is a national level All-Terrain Vehicle competition organized by SAE-INDIA in which over 200 teams participated from all over the country.



Ranks:

1. Brake Test Performance – All India Rank 2
2. Acceleration – 1st in Gujarat
3. Design Evaluation – 1st in Gujarat
4. CAE – 1st in Gujarat
5. Sales – 1st in Gujarat
6. Cost Evaluation – 1st in Gujarat



Mega ATV Championship 2021:

Team Czar participated in the Mega ATV Championship 2021, a national level All-Terrain Vehicle competition organized by Autosports India in the month of April 2021 in Goa and the team secured AIR-6 in Solo Dirt Race and AIR-6 in Armagaddon Race.

STUDENTS

PROJECTS - M.TECH MANUFACTURING TECHNOLOGY

Student Name & Roll Number	Title of Project	Industry Name and Address	PDEU Supervisor Name	Industrial Supervisor
Aditya Nema (19MMM001)	Micromachining of Non-Conducting Material Using ECDM Process	In-house	Dr. Abhishek Kumar/ Dr. Vivek K Patel	-
Chintan Patel (19MMM002)	Experimental investigation and optimization of non-conventional machining process for the low density high strength alloys	Sahajanand Laser, Gandhinagar	Dr. Jaykumar Vora/ Dr. Rakesh Chaudhari	Mr. Vaibhav Bhatt, HOD Fabrication Department
Darshit Kirankumar Desai (19MMM003)	Manufacture device for measuring dimension of the engine assembly component	Corrtech Energy, Changodar	Dr. Vishvesh Badheka	Mr. Nikunj Khatri
Dhairya (19MMM004)	Plastics waste recycling into PVC products	In-house	Dr. Jaykumar Vora	-
Dhairya Sandipbhai Shah (19MMM005)	Experimental Investigation on Micro Friction Stir Welding	In-house	Dr. Vishvesh Badheka/ Dr. Vivek Patel	-
Gautamsingh Rajput (19MMM006)	Fabrication and characterization of Wire arc additively manufactured bimetallic structure of Inconel 625 and 316L stainless steel	In-house	Dr.Pankaj Sahlot	-
Harsh Soni (19MMM007)	Mechanical and microstructural characterisation of maraging steel 300 manufactured by Selective laser melting	In-house	Dr. Pankaj Sahlot	-
Raj Madhusudanji Jangid (19MMM008)	Super plasticity in Aluminium Alloy	In-house	Dr. Vishvesh Badheka/ Dr. Vivek Patel	-

STUDENTS

PROJECTS - M.TECH MANUFACTURING TECHNOLOGY

Student Name & Roll Number	Title of Project	Industry Name and Address	PDEU Supervisor Name	Industrial Supervisor
Jaynishkumar Hasmukhbhai Idhariya (19MMM009) <i>Selected for job at SASB Tech LLP.Kamthe Properties, Fursungi, Pune</i>	Influence of Welding Parameter over The Hard facing Hardness	Plasser India Pvt. Ltd, Karjan, Gujarat	Dr. Vishvesh Badheka	Mr. Chintan Gohil, Assistant Manager-Welding.
Tejaskumar H Rathod (19MMM010)	Friction Stir Scribe Welding Of Similar & Dissimilar Metals	In-house	Dr. Vishvesh Badheka/ Dr. Vivek Patel	-
Darshan Solanki (19MMM011) <i>Selected for Job at Inox CVA</i>	Digitalization Of Welding In The Field Of Cryogenic Application	Inox CVA, Kalol, Panchmahal, Gujarat	Dr. Vishvesh Badheka	Mr. Sagar Shouche/ Mr. Deepak Acharya
Vatsal Maheshkumar Vaghasia (19MMM012)	Design And Development Of Low Cost Sustainable Hydroponics Set-Up For Urban Farming	In-house	Dr. Jaykumar Vora/ Dr. Rakesh Chaudhari	-
Meet Vinodkumar Gor (19MMM013)	Mechanical And Microstructure Investigation Of SS316L Manufactured By Selective Laser Melting	In-house	Dr. Pankaj Sahlot	-
Vishal G. Dave (19MMM014)	Experimental Investigation On Heating And Cooling Assisted Ultrasonic Spot Welding Of Dissimilar Metal	In-house	Dr. Vishvesh Badheka/ Dr. Vivek Patel	-
Nitesh Kumar Jha (19MMM015)	Friction Stir Welding Of Dissimilar Material Aluminum To Plastic	In-house	Dr. Vishvesh Badheka	-

STUDENTS

PROJECTS - M.TECH THERMAL ENGINEERING

Student Name & Roll Number	Title of Project	Industry Name and Address	PDEU Supervisor Name	Industrial Supervisor
Dhruv Patel (19MMT001)	Design and development of integrated Batch-RO/FO unit for water desalination with minimum specific energy consumption	In-house	Dr. Anurag Mudgal	-
Harsh Umaretiya (19MMT003)	Modelling and development of Solar powered Electro coagulation system for waste water treatment	In-house	Dr. Anurag Mudgal	-
Jaykishan Chamudia (19MMT004)	Theoretical and numerical study of convection dominated melting problem	In-house	Dr. Vishvesh Badheka/ Dr. Ojas Satbhai	-
Monil Shah (19MMT005)	Mdeling of Thermal management of lithium-ion batteries for electric vehicles	In-house	Dr. Rajesh Patel	-
Parth Patel (19MMT009)	Experimental and Theoretical Investigation of Mechanical Heat Pump for simultaneous heating of water and cooling of air	In-house	Dr. Rajesh Patel	-
Pragnan Lad (19MMT010)	Constant temperature heating application in solar dryer for food quality preservation	In-house	Dr. Rajat Saxena	-
Saurabh Patel (19MMT011)	Next generation air conditioner for sustainable cooling solutions	In-house	Dr. Jatin Patel	-
Shweta Patel (19MMT012)	Performance study of 12V Lead acid battery used in MG Hector	MG Motor India	Prof. S. S. Kachhwaha	Mr. Santhosh Beerelli

STUDENTS

PROJECTS - M.TECH DESIGN

Student Name & Roll Number	Title of Project	Industry Name and Address	PDEU Supervisor Name	Industrial Supervisor
Bhagyesh Bhatt (19MMD001)	Design For Robotic Arm For Milling Operation	Jyoti CNC, Rajkot	Dr. Simran Jeet Singh	Mr. Vijaysinh Zala
Dharmik Ghoel (19MMD002)	Phase Separator For Liquid Nitrogen	INOXCVA	Dr. Pavan Gurralla	Mr. Sachin Patel
Harsh Khatri (19MMD003)	Dynamic Analysis Of Sandwich Functionally Graded Piezoelectric Plate Under Thermo- Electro- Mechanical Loading	In-house	Dr. Simran Jeet Singh	-
Harsh Patel (19MMD004)	Discrete Element Simulation For The Behavior Of Bulk Granular Particles For Design Improvement	L & T	Dr. Vinay Vakharia	Mr. Amit Srivastava
Harshraj Chauhan (19MMD005)	Aerial Thermography Inspection Of Large Solar Power Plant Using Uav	In-house	Dr. Ravikant	-
Ingit Trivedi (19MMD006)	Multiphysics Modeling And Simulation Of Hydrogel Membrane For Reverse Osmosis Process	In-house	Dr. Pavan Gurralla	-
Jaimin Panchal (19MMD007)	Fault Diagnosis Of Ball Bearing Using Data Augmentation, Generative Adversarial Networks And Machine Learning Techniques	In-house	Dr. Vinay Vakharia	-
Keval Bhavsar (19MMD008)	Bearing Degradation Prediction Using Generative Adversarial Networks And Machine Learning Techniques	In-house	Dr. Vinay Vakharia	-
Kunjan Patel (19MMD009)	Design And Development Of Thermal Operated Rotary Actuator For Optical Payload In Remote Sensing Satellite	ISRO	Dr. Nirav Patel	Mr. Naimesh Patel
Kush Shrivastava (19MMD010)	Fem Analysis Of Journal Bearing Operating In Turbulent Regime	In-house	Dr. Vivek Kumar	-

STUDENTS

PROJECTS - M.TECH DESIGN

Student Name & Roll Number	Title of Project	Industry Name and Address	PDEU Supervisor Name	Industrial Supervisor
Rikkin Acharya (19MMD011) <i>Selected for Job at CEAT</i>	Parametric Study And Component To Vehicle Level Correlation Of Tire Ride And Noise	Ceat Tyres, Halol	Dr. Vinay Vakharia	Mr. Rahul Sanghani and Mr. Thomas Cherian
Savan Sanariya (19MMD012)	Design Of Submerged Combustion Vaporiser	INOXCVA	Dr. Pavan Gurrala	Mr. Rajendra Khadakar
Shivam (19MMD013)	Investigation On Effect Of Temperature On Fff Process	In-house	Dr. Pavan Gurrala	-
Shubham Mishra (19MMD014)	Design And Development Of Futuristic Truck And Bus Radial Tyre	Ceat Tyres, Halol	Dr. Vinay Vakharia	Mr Amol Banker
Vidisha Vyas (19MMD016)	Study Of Slosh Noise In Urea Tank Of Diesel Cars	MG Motors	Dr. Nirav Patel	Mr. Om Prakash Bharthuar
Darsh Mehta (19MMD017)	Analysis Of Sandwich Plate With Honeycomb Core And Fgm Facesheets	In-house	Dr. Simran Jeet Singh	-
Nikunj Parvadiya (19MMD018)	Model And Design An Industrial Manipulator For Unconventional Industrial Applications	In-house	Dr. Krunal Mehta	-
Vatsal Shah (19MMD019)	Effect Of Porous Layer On Dynamic Performance Of Hydrostatic Thrust Bearing	In-house	Dr. Vivek Kumar	-
Adisu Tadesse (19MMD020)	Experimental And Numerical Investigation On Tensile Behavior Of Plate Containing Multiple Hole	In-house	Dr. Nirav Patel	-