



PDEU

PANDIT DEENDAYAL ENERGY UNIVERSITY

Formerly Pandit Deendayal Petroleum University (PDPU)

SOT

SCHOOL OF
TECHNOLOGY

NEWSLETTER

July
2021



SCHOOL OF TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

FACULTY ZONE

- > Advances in Mechanical Engineering
- > Publications - Journals
- > Book Chapter
- > Visitors
- > Webinar Delivered
- > Professional Activities

FACULTY ZONE

- > Administrative Assignments
- > Webinar Organized
- > DC Conducted
- > Recognition

STAFF ZONE

- > Administrative Assignments

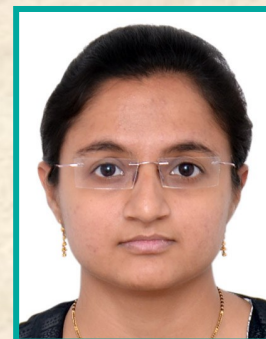
STUDENT ZONE

- > Events Attended
- > Webinars Organized
- > Recognition

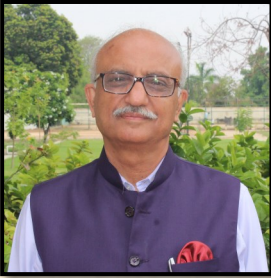
Editorial Team



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 @ 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, July 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.

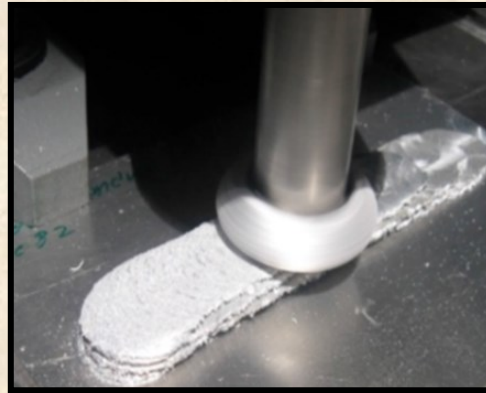
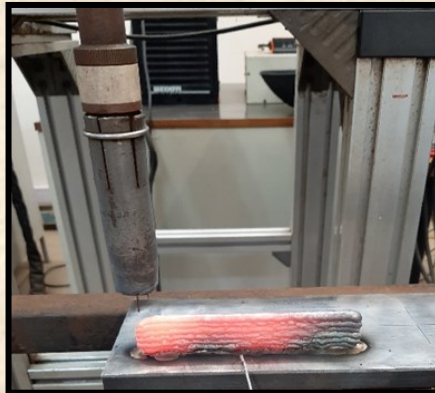


ADVANCES IN MECHANICAL ENGINEERING

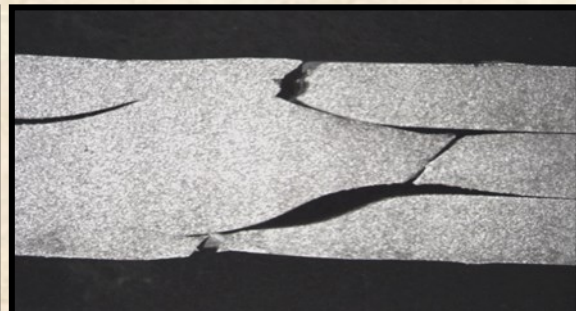
WELDING FOR ADDITIVE MANUFACTURING

- **Dr. Vishvesh Badheka**

Additive Manufacturing (AM) is a thirty-year-old industrial technology while electric arc welding process is about 100 year old. Experience of welding metallurgy and welding processes can be linked with metal additive manufacturing processes. Welding processes are classified based on heat source, welding processes are used for various applications in addition to welding, like cladding, surfacing, hard facing and repair & maintenance, now for additive manufacturing. Literature reported use of various arc and solid state welding processes for additive manufacturing. Processes like cold metal transfer a variant of Gas Metal Arc Welding, other solid state welding processes like ultrasonic welding, friction welding rotary & linear, and friction stir welding reported for additive manufacturing. The only solution to avoid solidification defects like porosities, oxidation & shrinkage cavities to switch over solid state welding processes like ultrasonic additive manufacturing and friction stir additive manufacturing processes. Current research at welding research lab-PDEU is in the direction of uses of GMAW, GTAW with cold and hot wire for WAAM and use of Ultrasonic, Friction stir welding and friction surfacing for additive manufacturing.



GMAW and Friction Surfacing for layer by layer deposition.



Friction Stir Welding for Additive Manufacturing Macro (3mm thick plate) and fracture location.


FACULTY
PUBLICATIONS
JOURNALS

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

- ⇒ *Vora, Jay, Vivek K. Patel*, Seshasai Srinivasan, *Rakesh Chaudhari*, Danil Yurievich Pimenov, Khaled Giasin, and Shubham Sharma, "Optimization of Activated Tungsten Inert Gas Welding Process Parameters Using Heat Transfer Search Algorithm: With Experimental Validation Using Case Studies.", *Metals* 11, no. 6 981 (2021).
<https://doi.org/10.3390/met11060981>

- ⇒ Kranti Kumar, M, *Kiran M.B.*, Shanmuganathan, S.P, "Minimum Zone Tolerance Algorithm to detect Roundness Error for Machine Rods using Vision System", *Materials Today Proceedings* (2021).
Doi:10.1016/J.MATPR.2020.12.788

- ⇒ A. Zala, N. Jamnapara, *V. Badheka*, C. Sasmal, S. Sam, and M. Ranjan, "Study of Weldability for Aluminide Coated Steels through A-TIG Welding Process," *Materials Performance and Characterization* 11. Published ahead of print, 19 July (2021).
<https://doi.org/10.1520/MPC20200168>

- ⇒ Hardik D. Vyas, Kush P. Mehta, *Vishvesh Badheka*, Bharat Doshi, "Friction welding of dissimilar joints copper-stainless steel pipe consist of 0.06 wall thickness to pipe diameter ratio", *Journal of Manufacturing Processes*, Volume 68, Part A, 2021, Pages 1176-1190,ISSN 1526-6125, (2021) Available online 29 June (2021).
<https://doi.org/10.1016/j.jmapro.2021.06.050>



FACULTY

BOOK CHAPTER

Department of Mechanical Engineering published the following Book Chapters during the month of July 2021:

⇒ **M.B. Kiran**, “The Internet of Things in the Corporate Environment: Cross Industry Perspectives and Implementation Issues”, the Book - Digital Transformation and Industry Use Cases and the Impact of Disruptive Technologies, IGI Global Publishers, United Kingdom (2021).

⇒ **Ravi Kant**, Narayanan Vinod and Uddipta Ghosh, “Stability and Control of the Flow in a Porous Channel”, the Book - IUTAM Laminar-Turbulent Transition, Springer.

ISBN 978-3-030-67901-9, pp. P 419-434, July (2021).

<https://www.springer.com/gp/book/9783030679019>



VISITORS AT PDEU

Dr. Vishvesh Badheka coordinated the following visits at Welding Research Lab during the month July 2021:

⇒ Mr Uttamprakash Patel, M.Tech student of Parul University and Mr. Ankit Chaudhary of Ahmedabad Institute of Technology performed FSW experiments on 5th July 2021.



⇒ Mr. Abhishek, student of Government Engineering College (GEC), Gandhinagar visited Welding Research Lab followed technical interaction on M. Tech admission, on 12th July 2021.

⇒ Faculty members from R C Polytechnic, Ahmedabad visited Welding Research Lab followed technical interaction on PhD admission dated 13th July 2021.

FACULTY

WEBINARS DELIVERED

Prof. S. S Kachhwaha delivered the following invited talks during the month of July 2021:

⇒ an invited talk titled “Role of Emerging Cavitation Technologies in Sustainable growth of Bioenergy Sector” during One-week Short Term Training Program (Online) on “Role of Renewable Energy sources in Indian Energy Security from 5th to 10th July 2021 organized by Delhi Technological University, Department of Mechanical, Production & Industrial and Automobile Engineering (Centre for Energy & Environment) dated 10th July 2021.

40 YEARS OF ISHRAE | **ISHRAE** Ahmedabad Chapter | **LAKSHYA** 100th Anniversary

ONLINE PANEL DISCUSSION ON
ADVANCES IN REFRIGERATION: A CASE STUDY FOR COVID 19 VACCINES

Live Webinar On: **31st July, 2021, Saturday** | Time: **@04:00 to 05:00pm** | For Registration: **<https://bit.ly/3k62BQQ>**

Moderator
Prof. Suresh Singh Kachhwaha

Expert
Prof. Krunal Khiralya
 Prof. Krunal Khiralya is M.E. Thermal Engineering having 10 year of Teaching Experience and 5 years of Industrial experience. Presently working as Assistant professor and HOD at Dyanmanjari Institute of Technology Bhavnagar. He has delivered more than 17 expert talks on various topic at different Institute/ Industry in the state. He has published 19 Research paper in national- international Journal and conferences and 1- patent. His current Research interests are combustion of alternate fuel, energy conservation in thermal utilities, heat storage devices. Mentor for project associated for finale round in SIH 2019 at IIT Indore.

Expert
Prof. (Dr) Shreya Mehta
 Prof. (Dr) Shreya Mehta is working as Professor ,Mechanical engineering department, Govt. Engg. College Bhavnagar. she has completed her Ph.D. from S.V.National Institute of technology Surat under guidance of Prof. H.B Walk Prof. K.P Daxal and Prof. M.D Arora (IIT-3).

Expert
Mr. Harshal Sarada
 Mr. Harshal Sarada is B.E Chemical in 2000 and M.B.A in marketing and finance in 2004. He is working in Synergy Agro Tech Pvt Ltd as a Director since 2004. The company is manufacturing Ice Cream Equipment. He is a member of ISHRAE since 2010 and also a member of ASHRAE since 2012.

Key Points for Discussion

- History of Refrigeration system
- Types of Refrigeration
- Advanced Refrigeration
- Accoustic Refrigeration systems
- Role of VAR/Solar Based Systems
- Covid vaccine storage supply chain
- Case Study Cold Rooms
- Conclusion

Coordination Team **Prof. Hardik Shukla** **Prof. Ruchir Parikh**

Aditi Shah President (2021-22) | **Amit Sanghvi** Program Chair (2021-22) | **Dr. Ragesh Kapadia** Refrigeration Chair (2021-22) | **Aashutosh Vyas** Secretary (2021-22)

Platinum Partner for SY 2021-22: **ALP**, **ACREX India 2022**, **INDIA 2022**, **STUDENTS ISHRAE**

Supported By: **ORATA**

Disclaimer: The information provided within this Webinar is for general informational purposes only. While we try to keep the information up-to-date & correct, there are no presentations or warranties, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the information, products, services, or related graphics contained in this Webinar for any purpose. Any use of this information is at your own risk. We do not guarantee or declare that the information on webinar is accurate & correct. We are not responsible nor can they be held liable for any errors or for uses in the content of the webinar.

Speaker: The views expressed in presentation made at webinar or other webinars are those of the speaker & not necessarily of ISHRAE. Presentations, or the presence, does not constitute an endorsement of the vendor or speaker's views, products or services.

RSVP: Mr. Rajendra Mevada: +91 98795 22028 | ishraeahd@gmail.com

⇒ invited as a Moderator for Online Panel Discussion on “Advances in Refrigeration: A case study for COVID 19 Vaccines sponsored by ISHRAE Ahmedabad Chapter dated 31st July 2021.

⇒ online invited talk on “Sustainable Production of Biodiesel using Cavitation Technologies” at BRIC Symposium 2021 at McMaster University Hamilton (Canada) dated 28th July 2021.



FACULTY

WEBINARS DELIVERED

Dr. Vishvesh Badheka delivered the following invited talks during the month of July 2021:

⇒ Under 94th Transition arrangement refresher course of Indian Institute of Welding on 22nd-23rd July 2021:

- ◆ “Laser and Electron Beam Welding Processes”
- ◆ “Hybrid Welding processes & MIAB”
- ◆ “FW, FSW, UW, Diffusion, Explosive (Solid state) Welding Processes”
- ◆ “Resistance welding processes”

⇒ “Welding Based additive Manufacturing processes”, during National Seminar on Welding Science and Technology – Present Status & Future Direction (NSWEST- 2021) organised by IIW India Chennai Branch on 23rd July 2021.

⇒ “Advanced Welding processes for additive manufacturing”, during ATAL Academy Programme on Advances in Manufacturing (AIM 4.0) organised by Mechanical Engineering Department, SVNIT on 27th July 2021.

⇒ “Managing the research project from concept to conclusion”, during 1-Day Faculty Development Program on "Research Insight for Beginners" organised by Indus University on 31st July 2021.



PROFESSIONAL ACTIVITIES

Dr. Vishvesh Badheka carried out the following Professional Activities during the month of July 2021:

⇒ Attended Joint Management Committee Meeting of IACE-IIW on 2nd July 2021.

⇒ Attended Doctoral Committee Meeting as an external expert of Mr Shalok Bharati, of Nirmal University on 5th July 2021 and Mr Ashvin Patel of GTU on 9th July 2021.

⇒ Attended Executive Committee Meeting of IIW Baroda Branch held on 10th July 2021.

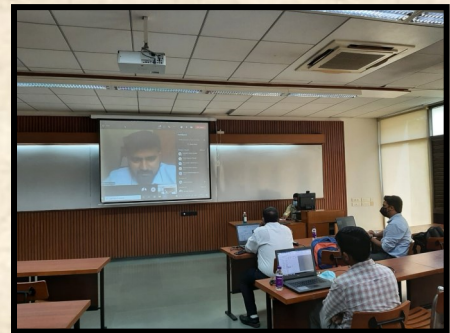
FACULTY

ADMINISTRATIVE ASSIGNMENTS

Dr. Vishvesh Badheka took up the following administrative assignments during the month of July 2021:

⇒ Administered the Department M. Tech Admissions during 9th-10th July 2021. The panel members were as under:

- ◆ Design: Dr. Vinay Vakharia, Dr. Harshal Oza, Dr. Pavan Gurrala.
- ◆ Thermal Engineering : Dr. Jatin Patel, Prof. S S Kachhwaha, Dr. Vivek Patel, Dr. Anirudhh Kulkarni.
- ◆ Manufacturing Technology : Dr. Jay Vora, Dr. M.B Kiran, Dr. Pankaj Sahlot, Dr. Ramesh Guduru.



⇒ Attended the Technical Symposium of the Mechanical Lab Staff wherein they were provided an opportunity Technical Staff will get an opportunity to share information about the best practices they follow in the laboratory subject and state of the art equipment available in their laboratory and its application with the Faculty members and Technical Staff of other Departments / School on 10th July 2021.

⇒ Participated in School of Petroleum (SPT) - NBA for mock visit on 27th July 2021 and during actual visit on 31st July 2021.

⇒ Attended NAAC related meetings on 12th, 19th, 22nd and 28th July 2021.

Dr. Pankaj Sahlot along with other DC member conducted 1st DC review of Aayushi Joshi (Science) on 13th July 2021.



FACULTY

ADMINISTRATIVE ASSIGNMENTS

Dr. Vishvesh Badheka coordinated the presentations for review of research project proposal submitted under Student Research Program 2021 jointly with external reviewers Dr. Nirav Jamnapara and Dr. Paritosh Chaudhari from IPR conducted as under organized by Office of Dean- R&D during 12-15th July 2021 (2.00 pm to 4.00 pm):

Project Title	Project Guide (s)
Aerial Thermography of Large Solar Power Plant Using Unmanned Aerial	Dr. Ravi Kant
To develop inbuilt plastic waste recycling system for fabrication of 3D	Dr. Pankaj Sahlot
Development of a cost-effective Filament Extruder for the manufacturing of	Dr. Pankaj Sahlot
Ballistic impact response of scutoid core based sandwich composite plate	Dr. Nirav Patel
Experimental and Numerical investigation of friction stir channeling (FSC) process	Dr. Kush Mehta, Dr. Nirav Patel
Study the effect of post processing of Cu weld for improvement in the	Dr. Vishvesh Badheka
Investigation of similar and dissimilar metal joints by friction welding for pipe joint configuration	Dr. Kush Mehta, Dr. Vishvesh Badheka
Parametric optimization of Wire-arc additive manufacturing process for fabrication of SS 316L 3D Structural components	Dr. Jay Vora, Dr. Rakesh Chaudhari
Fabrication of Micro-holes and Slits through Electrochemical Discharge Machining Process	Dr. Abhishek Kumar, Dr. Vivek Patel
Optimization of machining parameters for machining of super alloys on Electro Discharge Machining and its variants (Additive assisted EDM and	Dr. Vishvesh Badheka
Enhancement of mechanical and surface properties of Ti alloy components fabricated by powder bed fusion additive manufacturing process for biomedical implant applications.	Dr. Pankaj Sahlot
Design and Development of Gearbox setup for compound fault detection	Dr. Vinay Vakharia
Development of a green technology to fabricate bi metallic structure using	Dr. Pankaj Sahlot
Canned Photocatalytic Colours for Indoor Air Pollution Remediation	Dr. Ravi Tejasvi
Microstructural and mechanical investigation of bimetallic Wire Arc Additively Manufactured (WAAM) structure of Titanium alloy (Ti 6Al4V) and 316L stainless steel	Dr. Pankaj Sahlot
Investigation on the effect of superplastic behavior in Magnesium alloys by the application of Friction Stir Processing (FSP).	Mr. Kishan Fuse,
Metallurgical studies on metal matrix surface composites (Copper) with hybrid reinforcement using friction stir processing.	Dr. Vishvesh Badheka, Dr. Krunal.Mehta
Manufacturing of Stationed Storage tanks with Wire Arc Additive Manufacturing	Dr. Vishvesh Badheka, Dr. Pankaj.Sahlot
Developing Test rig to study and measure the Coefficient Of Rolling	Dr. Krunal Mehta



FACULTY

ADMINISTRATIVE ASSIGNMENTS

Dr. Ravi Kant has received an interest from Mr. Yogesh Singh (PMRF PhD Fellow) for collaboration for the upcoming Semester in tutorial sessions in the Fall 2021 dated 15th July 2021. They had collaborated in Spring 2021 session to provide tutorial session in the Control System Engineering Course. The main objective of Mr. Yogesh was to conduct a tutorial session that may involve doubt clearing, software (such as Matlab, Octave) teaching and concept clearing. He got opportunity to conduct his part in helping students understand and connect with different topics of Control System Engineering. These topics involved modelling of system (with free body diagram, laplace transformation, and transfer function generation), routh stability criteria, routh special cases, root locus, compensators, and frequency response. It was a learning experience for him too that helped him to better understand his ideas and put in front of audience, tackle their doubts and questions, time management, and further improve himself. He thanked the Department HoD and Dr. Ravi Kant for providing him this opportunity. Following are his teaching timeline :-

PMRF TA Duty at PDPU: Control System Engineering		
Spring 2021		
Sn No	Date	Tutorial Topic
1	Feb 09, 2021	Modelling of System
2	Mar 02, 2021	Routh Stability Criteria
3	Mar 09, 2021	Routh Special Case
4	Mar 16, 2021	Root Locus
5	Mar 23, 2021	Root Locus
6	Mar 30, 2021	Root Locus
7	Apr 05, 2021	Compensators
8	Apr 06, 2021	Compensators
9	Apr 09, 2021	Lag Compensators
10	Apr 13, 2021	Frequency Response

FACULTY

EVENTS /WEBINARS ORGANISED

Dr. M. B. Kiran and Dr. Garlapati Nagababu have moderated following M. Tech Admission Webinars during the month of July 2021 titled:

⇒ “Introduction to Fiber Reinforced Composites and their Applications using case studies”, delivered by *Dr. Nirav Patel and Dr. Pavan Kumar G.* on 15th July 2021

PDEU PANDIT DEENDAYAL ENERGY UNIVERSITY

SOT SCHOOL OF TECHNOLOGY

Introduction to Fiber Reinforced Composites and their applications using case studies

Organizer: Department of Mechanical Engineering, SoT, PDEU

15 | 07 | 2021
04:00 PM ONWARDS

SPEAKERS:

MODERATOR:

Dr. MB Kiran Dr. Garlapati Nagababu

Dr. Nirav Patel Dr. Pavan Kumar G

Free Registration
REGISTER NOW

QR Code ZOOM

PDEU PANDIT DEENDAYAL ENERGY UNIVERSITY

SOT SCHOOL OF TECHNOLOGY

Wire-Electrochemical Discharge Machining (Wire-ECDM) Process

Organizer: Department of Mechanical Engineering, SoT, PDEU

19 | 07 | 2021 • 04:00 PM

Speaker:
Dr. Abhishek Kumar

Moderators:
Dr. MB Kiran Dr. Garlapati Nagababu

REGISTER NOW

QR Code ZOOM

⇒ “Wire Electro Chemical Discharge Machining Process”, delivered by *Dr. Abhishek Kumar* on 19th July 2021.



FACULTY

DC CONDUCTED

DC Review	Date	PhD Scholar	External Expert	Guide/Supervisor
7th	8th July 2021	Trivedi Achyut Virendrabhai (16RME004)	Dr. K. M. Patel	Dr. Pavan Kumar Gurrala
8th	1st July 2021	Bhasuru Abhinaya Srinivas (17RME001)	Dr. Vikas Lakhera	Dr. Nagababu Garlapati & Prof. S.S. Kachhawaha
7th	5th July 2021	Subhash Sukhdev Das (17RME005)	Dr. Piyush Gohil	Dr. Jay Vora & Dr. Vivek V. Patel (External Supervisor)
5th	9th July 2021	Rajesh Goswami (18RME002)	Dr. Indravadan Dave	Dr. Jay Vora
5th	9th July 2021	Nahar Chitralekha Uttamchand (18RME007)	Dr. Kaushik Mithabhai Patel	Dr. Pavan Kumar Gurrala & Dr. Nirav Patel
5th	7th July 2021	Raghavendra Somabhai Darji (18RME008)	Dr. Manoj Kumar Gupta	Dr. Vishvesh Badheka & Dr. Kush Mehta
5th	7th July 2021	Vyas Hardik Dineshbhai (18RME009)	Dr. Manoj Kumar Gupta	Dr. Kush Mehta & Dr. Vishvesh Badheka
1st	28th July 2021	Kuldeep Narwat (20RME009)	Dr. Divyang H.Pandya	Dr. Abhishek Kumar (Internal Supervisor) & Dr. Vivek Kumar (External Supervisor) Dr. Simran Jeet Singh (External Supervisor)
1st	27th July 2021	Pushpendra Kumar Kushwaha (20RME011)	Dr. Divyang H.Pandya	Dr. Vinay Vakharia (Internal Supervisor) & Dr. Vivek Kumar (External Supervisor)
1st	6th July 2021	Bandana Swain (20RME012)	Dr.Hitesh Panchal	Dr Jatin Patel
5th	20th July 2021	Ms. Gaurav Aggarwal (15RME005)	Prof. R.N.Patel	Dr.S.S. Kachhawaha



FACULTY

RECOGNITION

Team T 23 under the mentorship of Prof. S S Kachhwaha is the winner of HACK 4.0.

Prof. S.S Kachhwaha jointly with Dr. Pravin Kodgire mentored the Team T23 [Dhruvkumar Prajapati (18BCH16), Shikahar Srivastava (18BCH70) and Ritesh Vankar (18BCH53)] of Let's Hack 4.0 organized by PDEU Innovation and Incubation Centre (PDEU IIC).

Problem ID PS35 and Statement:

“Development of a sustainable recycling method for the separation and renovation of spent lithium-ion batteries (LIBs) based on ultrasonication”.

Methodology:

The reason for the failure of LiCoO₂ mainly attributed to the battery overcharge and pores blocking. The drawbacks in existing reproduction processes include, the increased usage of chemical reagents and acid solutions, which posed some environmental problems of wastewater discharge and secondary pollution.

The proposed method realizes the idea of closed loop material circulation and sustainable utilization, and may prove to be a promising technology for lithium-ion battery industrialized development. In this proposed process, Lithium cobalt oxide (LiCoO₂) and aluminium foils will be separated sufficiently under the effect of ultrasonic cavitation. The lithium in anode materials can be directly reused as lithium leaching solution and applied in the ultrasonic renovation of spent LiCoO₂. Thereby solving the problem of wastewater discharge and realizing the whole material circulation.

To achieve very high separation rate of (LiCoO₂), influences of factors such as ultrasonic power, reaction time, stirring speed, H₂O₂ volume, S/L ratio, pH range and reaction temperature need a thorough study. Argon (Ar) atmosphere can be used as cavitation gas to improve the cavitation effect and increase the renovation efficiency. Nano-Al₂O₃ can be applied for coating modification to improve the electrochemical properties. The performance of the proposed process will be estimated based on first charge and discharge capacity of the modified battery.










The important features of the proposed sustainable process are that there is no secondary pollution and expected to have a high reaction efficiency due to application of ultrasonication (US) and mild operating conditions. This study can comprehensively improve the utilized efficiency and provide a theoretical as well as experimental basis for the technical upgrading of the spent LIBs industry. After develop the prototype using US, the cavitation techniques will be designed and developed for Industry scale applications. Thus, this proposal have a potential role in resource saving for the entire LIBs recycling and remanufacturing industry.



ADMINISTRATIVE ASSIGNMENT

Department of Mechanical Engineering has designed a Skill Development Programme in the following areas supported by **Mr. Jayesh Panchal, Mr. Ashok Chavda, Mr. Arvind Makwana and Mr. Ramkrushna Panchal** under the guidance of **Dr. Vishvesh Badheka**:

- ⇒ Non-Conventional Machining
- ⇒ Welding
- ⇒ CNC Machining
- ⇒ Conventional Machining

 PDEU PANDIT DEENDAYAL ENERGY UNIVERSITY Formerly Pandit Deendayal Petroleum University		Department of Mechanical Engineering Skill Development Programme		SOT SCHOOL OF TECHNOLOGY
Non-Conventional Machining <ul style="list-style-type: none"> * Wire Cut EDM * Spark EDM 	Welding <ul style="list-style-type: none"> * Shielded Metal Arc Welding (SMAW). * Gas Tungsten arc Welding (GTAW) * Gas Metal Arc Welding (GMAW) 	CNC Machining <ul style="list-style-type: none"> * CNC Milling * CNC Turning 	Conventional Machining <ul style="list-style-type: none"> * Lathe machine * Milling Machine * Shaper machine * Drilling Machine 	
				
 Mr. Jayesh Panchal Lab. Assistant Mo. No. 9898685826 Jayesh.Panchal@sot.pdpu.ac.in	 Mr. Ashok Chavda Lab. Assistant Mo.No.8849720807 Ashok.Chavda@spt.pdpu.ac.in	 Mr. Arvind Makwana Lab. Assistant Mo. No. 9723263160 Arvind.Makwana@sot.pdpu.ac.in	 Mr. Ramkrushna Panchal Lab. Assistant Mo. No.9173051137 Ramkrushna.Panchal@sot.pdpu.ac.in	
Duration: 3 to 5 days/week Registration Fees: 1000/-INR per programme Minimum 10 registrations per programme for commencement Certificates for Participants		Click here to register : https://forms.gle/cf7VhQ9ZM3KiKxJv6 For more information contact the above trainers.		

STUDENTS

EVENTS ATTENDED

The following students from Department of Mechanical Engineering participated in Let's Hack 4.0 organized by PDPU Innovation and Incubation Centre (PDPU IIC):

Team No., Problem ID & Statement	Faculty Mentor	Student Team Members
T05-PS17- Online accurate state of charge (SOC) estimation using adaptive optimized battery model parameters that can help battery management system (BMS) of electric vehicles (EVs) for enhancing efficiency and life of battery.	Dr. Siddharth Joshi	Nisarg Patel (19BME084) Shlok Desai (19BME111)
T11-PS38- Developing sustainable Wireless Charging Infrastructure for EVs	Dr. Nagababu Garlapati	Om Dave (19BME086) Pratham Nagori (19BME091) Taral Shah (19BME116) Jaydev Nayak (19BME139) Savan Patel (19BME108) Harsh Parmar (19BME038)
T12-PS56- Utilization of vehicle in high altitude region.	Dr. Prahlad Kumar Baruah	Abhishek Borah (19BME005) Abhishek Kumar (19BME137)
T24-PS21- Finding Optimal Intervals of EV Charging Stations	Dr. Vivek Ramalingam	Gourav Jain (19BME031)
T26-PS06- Statistical learning for accurate battery lifetime prediction	Dr. Anirudh Kulkarni	Sparsh Patel (18BME105) Ram Ranavaya (18BME088) Smit Sanjay Patel (18BME103) Sudarshan Khamar (18BME106) Jaimin patel (18BME033) Taranjyot Singh H Pablab (18BME108)
T30-PS14- Designing of hybrid electric vehicle drive train	Dr. Nirav Patel	Thira Patel (18BME110) Utkarsh Jha (18BME113) Sanjana Singh (18BME095)

STUDENTS

RECOGNITION

Team No., Problem ID & Statement	Faculty Mentor	Student Team Members
T31-PS14- Designing of hybrid electric vehicle drive train	Dr. Krunal Mehta	Yug Suthar (18BME128) Mann Patel (18BME050) Neel Thaker (18BME064) Shubham Juneja (18BME098)
T33-PS12- To evaluate the reliability of energy storage systems in smart grids	Dr. Kiran M B	Vishwaraj Shantubhai Govaliya (18BME120) Nimesh Sureshbhai Prajapati (18BME068) Zainul Abedin Zaz (18BME129) Darshit Prajapati (18BME011) Motka Parthkumar Mavjibhai (18BME080)
T35-PS08- PS08 - Hybrid Battery Thermal Management for EVs with Passive Liquid Cooling and Phase Change Materials	Dr. Rajesh Patel	Nishant Patel (18BME074) Tarun Gupta (18BME109) Nisarg Prajapati (18BME072) Shlok Sheth (18BME097) Smit Patel (18BME104) Yash Jain (18BME047)
T48-PS13- Cost minimization of battery thermal management system (BTMS)	Mr. Abhinaya Srinivas Bhasaru	Rituraj Jyotinarayan Jha (18BME090) Ali Hasnain Vasaya (18BME006) Laxmikant Parmar (18BME046)
T58-PS32- Battery recycling & second use life	Dr. Daya Kaul	Rajan Jaiswal (18BME094)
T59-PS45- Using Data Science and visualization to Map Electric Vehicles (EV's) Data	Dr. Hardik Patel	Harsh Sharma (19BME032)

STUDENTS

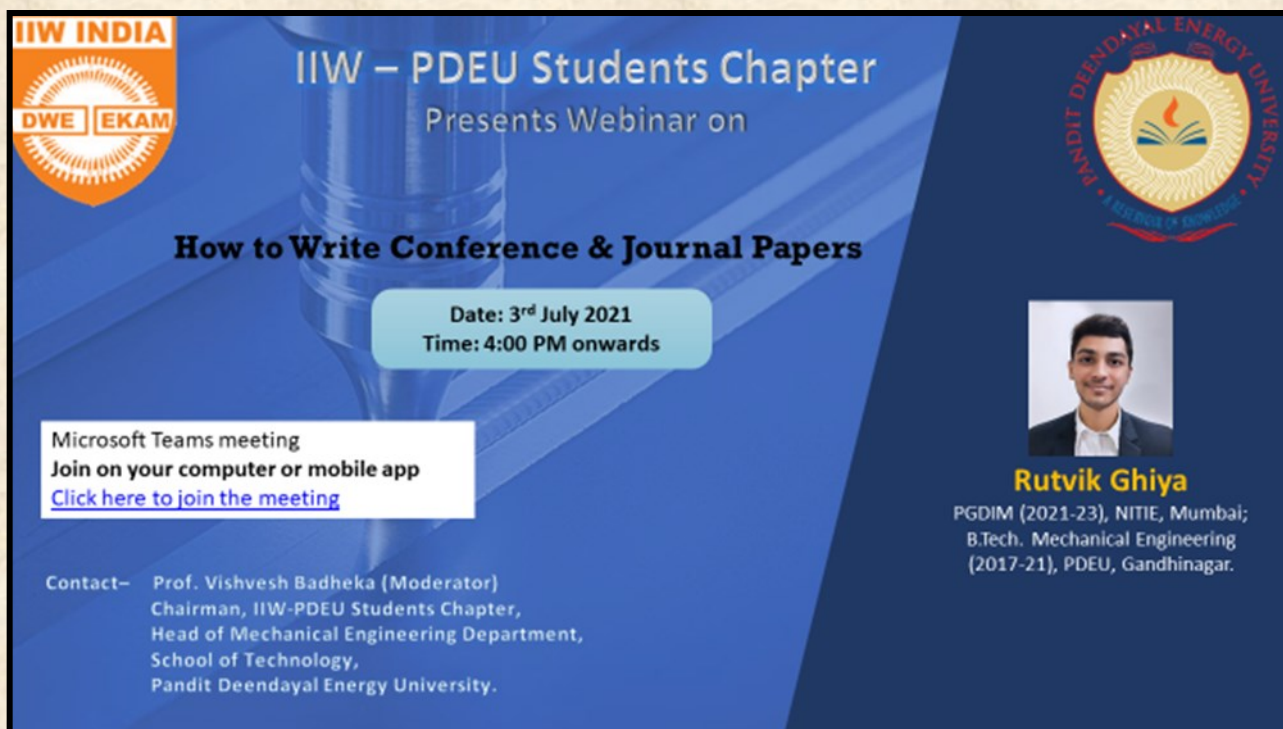
RECOGNITION

Team No., Problem ID & Statement	Faculty Mentor	Student Team Members
T61-PS57- Reducing the charging time of Batteries used in EVs	Dr. Anilkumar Markana	Aakash Shailesh Oza(19BME002) Jugal Darshan Acharya (19BME056) Harsh Jitalkumar Shah (19BME035) Jay Dharmendrabhai Shukla (19BME047) Jagadeesan Pillai (19BME043) Dhaval Dharmesh Mistry (19BME021)
T63-PS18- EV for Defense sector	Dr. Rakesh Vasant Chaudhari	Falak Patel (18BME023) Bhumi Patel (18BME010) Namrata Thakkar (18BME063) Trushil A Patel (18BME124) Harshil Pancholi (18BME028) Karn Kavathia (18BME111)
T72-PS32- Battery recycling & second use life	Dr. Daya Kaul	Divya Solanki (20BAE011) Manan Bangur (20BAE007) Anika Garg (20BAE005)
T76-PS18- EV for Defense sector	Dr. Nagababu Garlapati	Nisarg Shah (18BME073) Karan Soni (18BME131) Aditya Rao (16BME002)
T79-PS03- Public EV Charging facility at Existing petrol pumps	Mrs.Vima Mali & Mr.Manivel M	Shubham Patel(18BME099)
T88-PS56- Utilization of vehicle in high altitude region.	Dr. Vima Mali	Yogesh Gohil(18BME126)
T91-PS55- How might we develop a public electric two wheeler sharing infrastructure solution for mega cities?	Dr. Krunal Maheta	Yash BhadreshKumar Shah (19BME128) Pankajkumar Sultansinh Goswami (19BME087) Yashkumar Vinodbhai Gohil (19BME130) Tanay Ketan Shah (19BME135)

STUDENTS

WEBINAR ORGANISED

IIW-PDEU Student Chapter under the guidance of **Dr. Vishvesh Badheka** organized Webinar on “How to write Conference and Journal Papers” delivered by Mr. Rutvik Ghiya, PGDIM (2021-23), NITIE, Mumbai, B. Tech Mechanical Engineering (2017-21), PDEU, Gandhinagar on 3rd July 2021.



IIW INDIA
DWE | EKAM


IIW – PDEU Students Chapter
Presents Webinar on

How to Write Conference & Journal Papers

Date: 3rd July 2021
Time: 4:00 PM onwards

Microsoft Teams meeting
Join on your computer or mobile app
[Click here to join the meeting](#)

Contact– Prof. Vishvesh Badheka (Moderator)
Chairman, IIW-PDEU Students Chapter,
Head of Mechanical Engineering Department,
School of Technology,
Pandit Deendayal Energy University.



Rutvik Ghiya
PGDIM (2021-23), NITIE, Mumbai;
B.Tech. Mechanical Engineering
(2017-21), PDEU, Gandhinagar.

STUDENTS

RECOGNITION

Falak Patel (18BME023) and team participated in Xylem Innovation challenge in a virtual hackathon organized by Xylem Inc. The team worked in an 8-week event wherein they developed a project on a water challenge in team 5 students, with separate prizes available for the winners of the high school and university tracks. Throughout the process, the team was engaged with mentors and participated in webinars with industry-leading individuals in Xylem and the water community.

Out of the four Challenges, team decided to work on Challenge Statement #1 - Reducing the Water Footprint of Everyday Products. In this challenge, they had to analyze the life-cycle water consumption, including the sourcing, manufacturing, production, and marketing processes, for a daily product.

Team Information

Team Name: Mizu Warriors

Members: Bhumi Patel(18BME010) , Falak Patel (18BME023), Karn Kavathia (18BME111) , Namrata Thakkar (18BME063) and Trushil Patel (18BME124).

Topic: Reducing the water footprint of a house.

After tremendous effort from the team and under the guidance of **Dr. Vishvesh Badheka** the team secured 3rd rank in this competition under the university track.

XYLEM

**GLOBAL STUDENT
INNOVATION CHALLENGE**

2021

xylem
Let's Solve Water



Factors like climate change, pollution and aging infrastructure threaten global water supplies and water security. The Xylem Global Student Innovation Challenge is an 8-week event, inviting individuals, or teams of up to five people, to develop a project on one of four water challenges, with separate cash prizes totaling \$20,000 available for the winners of the high school and university tracks.

The Innovation Challenge offers the opportunity for students to engage with mentors and participate in webinars led by experts in Xylem and the water community. Xylem has also created Water Masterclass - a series of video classes educating on a range of important water topics from water sustainability to engineering design.

2021 CHALLENGE STATEMENTS

1

Reducing the Water Footprint of Everyday Products

2

Gaming for Water with EarthEcho

3

Urban Flood Prediction

4

What if you Lived on Mars?

More details about the Challenge Statements can be found [HERE](#).

**THE 2021 XYLEM GLOBAL STUDENT
INNOVATION CHALLENGE BY THE NUMBERS**

8

WEEKS OF
COMPETITION

656

STUDENTS

47

COUNTRIES
REPRESENTED

4

CHALLENGE
STATEMENTS

4

EXPERT-LED
WEBINARS

9

WATER
MASTERCLASSES

103

PROJECT
SUBMISSIONS

HIGH SCHOOL WINNERS



UPLIFT (USA)

"I used Fanno Creek (rainfall/discharge) data and K-Nearest Neighbors (KNN) Classification to predict floods and interactive web (Anvil) app"

- Surya Tallavarjula

[VIDEO PRESENTATION ►](#)

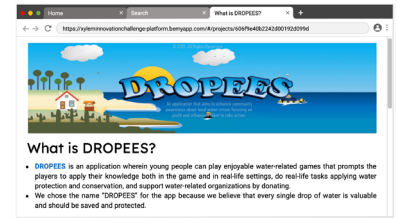


REHYDRO (SINGAPORE)

"ReHydro aims to reduce the water footprint in the production of rice and make hydroponics more feasible, especially for mass-production"

- Yi Heng Yeong, Lavanya Muthiah, and Bao Yu Lee

[VIDEO PRESENTATION ►](#)



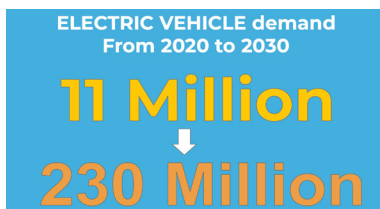
DROPEES (PHILIPPINES)

"An application that aims to enhance community awareness about local water crises focusing on youth and influences them to take action"

- Bienn Mishael Usi, Annika Venice Caminero, Laurence Aries Cuasay, Archie Ferrera, and Allane Lee Castro

[VIDEO PRESENTATION ►](#)

UNIVERSITY WINNERS



WHITE OIL (SINGAPORE)

"White Oil focuses on the water footprint of electric car batteries, also known as lithium batteries"

- Huey Jen Tham, Michelle Chua, and Wei Ywin Teo

[VIDEO PRESENTATION ►](#)

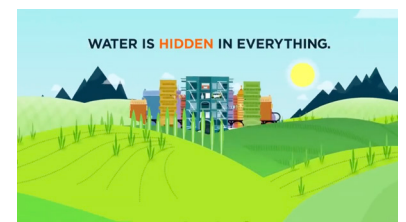


MARS - WATER EXTRACTION & TRANSPORTATION (WET) (MALAYSIA)

"Our project focuses on in-situ resource utilization to produce and blockchain technology to manage ample resources for crew living on Mars"

- Zong Junn Lee, Loh Juin Xian, Cremen Ong Wen Yao, Ian Lim Ting Hau, and Jia Xuan Wong

[VIDEO PRESENTATION ►](#)



MIZU WARRIORS (INDIA)

"Grey Water treatment System - A four filtration process"

- Trushil Patel, Falak Patel, Bhumi Patel, Namrata Thakkar, and Karn Kavathia

[VIDEO PRESENTATION ►](#)

