Edition VI, Volume I, 2022-23

Mechanical Engineering E-Magazine (LBRCE)

(TIER-I)

MECH PULSE

(JUL-SEP 2022)

DEPARTMENT OF MECHANICAL ENGINEERING

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(Autonomous)

Accredited by NAAC & NBA under Tier - I

Approved by AICTE and Permanently Affiliated to JNTUK, Kakinada

Mechanical Engineering E-Magazine (LBRCE)

MESSAGE FROM HEAD OF THE DEPARTMENT

I am very happy to inform you that the department of mechanical engineering is bringing **MECH PULSE-an e-magazine** its edition VI and volume I. The department of mechanical engineering is Accredited by **National Board of Accreditation (NBA) under Tier-I** and is started in the year 1998 with an intake of 60 students. At present the department is offering B. Tech Mechanical Engineering with an intake of 120 students and M. Tech – Thermal Engineering with an intake of 18 students. The department has thirteen state of art laboratories worth of 2.8 crores, with advanced computing facilities, software and research equipment. Advanced **Research Laboratories** in the area of **Cognitive Science, Material Testing, Tribology and Thermal Engineering** are available. Sophisticated **ANSYS Skill Development Centre** with 110 users of ANSYS 18.1 and **Dassault 3D Experience centre** (in association with APSSDC) is available. The department has 31 faculty members with 10 Doctoral degrees. Thirteen faculty are actively pursuing for their Ph. D in various universities and nine research scholars are working for their doctoral under the department faculty. The department faculty constantly upgrade their knowledge in the area of their domain by attending various Faculty Development Programs, workshops, seminars etc. The faculty are actively engaged in their research work and are active in publishing papers in journals and conferences.

VISION OF THE DEPARTMENT

- To impart knowledge in Mechanical Engineering with global perspectives for the graduates to serve the society and industry.

MISSION OF THE DEPARTMENT

- To enable the graduates technically sound with the state- of- the –art curriculum and innovative teaching methods
- To provide training programs that bridge the gap between academia and industry
- To create a conducive environment and facilities to improve overall personality development of the graduates
- To make the graduates aware of role and responsibilities of an engineer in society.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO1: To build a professional career and pursue higher studies with sound knowledge in Mathematics, Science and Mechanical Engineering.

PEO2: To inculcate strong ethical values and leadership qualities for graduates to become successful in multidisciplinary activities.

PEO3: To develop inquisitiveness towards good communication and lifelong learning.

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: To apply the principles of thermal sciences to design and develop various thermal systems.

PSO2: To apply the principles of manufacturing technology, scientific management towards improvement of quality and optimization of engineering systems in the design, analysis and manufacturability of products.

PSO3: To apply the basic principles of mechanical engineering design for evaluation of performance of various systems relating to transmission of motion and power, conservation of energy and other process equipment.

ONGOING RESEARCH PROJECTS

S.No.	Name of the Faculty	Title of the Project	Funding Agency	Amount Sanctioned	Sanctioned Year
1.	Dr.N.Sunil Naik	Evaluation of engine parameters affecting the performance of enzymatic transesterification process using test fuel blends	DST/SERB/EEQ	22,81,000	2019

GRANTS RECEIVED

S.No.	Name of the Faculty	Title of the Project	Funding Agency	Amount Sanctioned	Sanctioned Year
1.	J.Subba Reddy	Robotics & Artificial Intelligence	AICTE ATAL	93,000	2022

PUBLICATIONS BY FACULTY

A: Conferences Attended

- **A.Pratyush, "**Experimental assessment of liquid suction heat exchanger using with vapour compression refrigeration sysytem by the application of twisted strip inserted condenser"in International conference on advances in energy research from 7 - 9 july 2022 at IIT Bombay.

- **Jonnala Subba Reddy**, Experimental investigation on electro-discharge machining with morphological studies for optimizing processing parameters of aerospace materials, Second International Conference on Advances in Engineering & Technology (ICAET - 2022) (Online), RSP Conference Hub, Tamilnadu29th to 30th September 2022.

B: Journal Publications

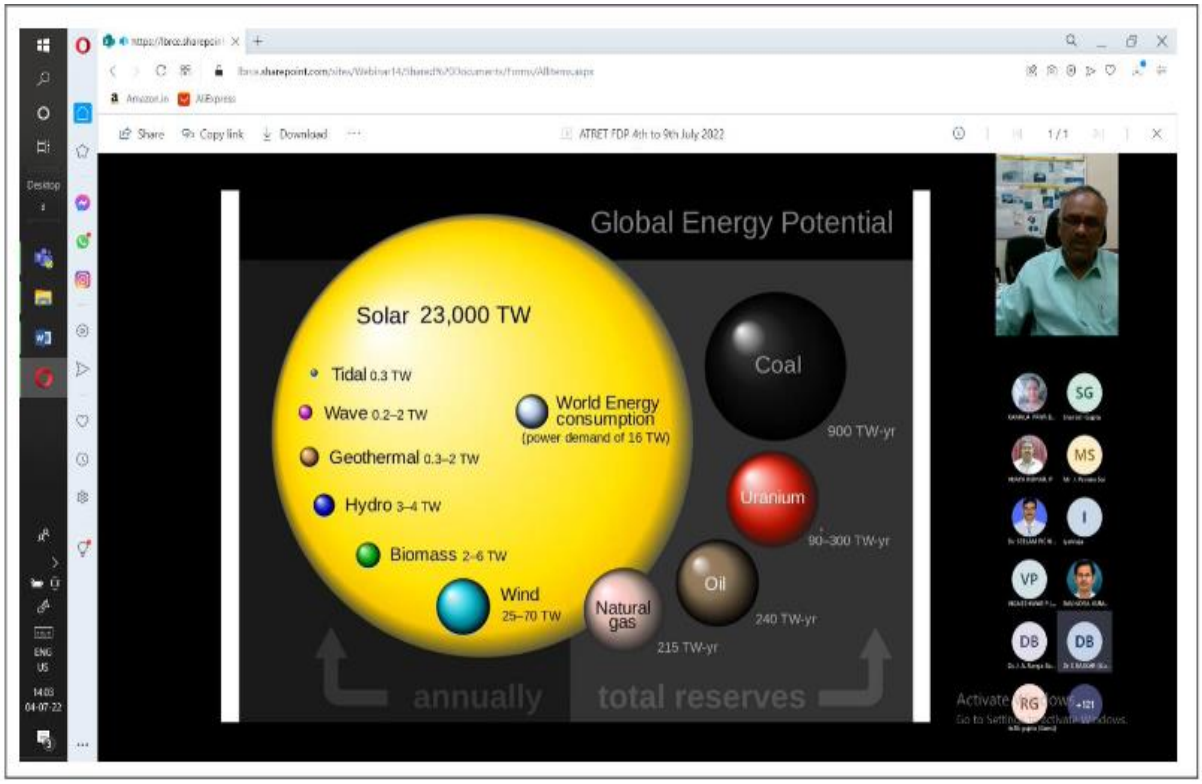
- P.Venkataramana, Dr.P.Vijaya Kumar, Dr.B.Balakrishna, Experimental Investigation of Aluminum oxide Nanofluid on Closed loop Pulsating Heat Pipe Performance Journal of Applied Fluid Mechanics 1735-3572/1735-3645 30th July 2022.
- B.Nikhil Chakravarthy, Dr.P.Vijaya Kumar, Dr.V.Dhana Raju, Dr. R.Senthil, Dr.K.Appa Rao Evaluation of performance, emissions and combustion attributes of diesel engine powered by Palmyra biodiesel blends with distinct injection pressures and EGR ratesInternational Journal of Ambient Energy (Taylor & Francis), 0143-0750, 28-08-2022.
- Jonnala Subba Reddy**,** Machine Learning approaches to for Improving the Automatic Solar Light Tracking System for Energy Efficiency, 202241050110, Indian Patent Office09th Sept 2022.

EVENTS ORGANIZED BY THE DEPARTMENT

ONLINE FACULTY DEVELOPMENT PROGRAM

ADVANCEMENTS IN THERMAL AND RENEWABLE ENERGY TECHNOLOGIES (ATRET-2022)

- The Department of Mechanical Engineering, organized a online faculty development program on **"Advancements in Mechanical Engineering"** through online from 04-07-2022 to 09-07-2022 by various faculty from reputed institutions Dr.K.Srinivas Reddy, Dr.P.Karthik, Dr.R.Parameshwaran, Dr.T.Srinivas, Dr.S.Kalaiselvam, Dr.P.Thirumal, Dr.Rajesh Baby, Dr.R.Senthil coordinated the event

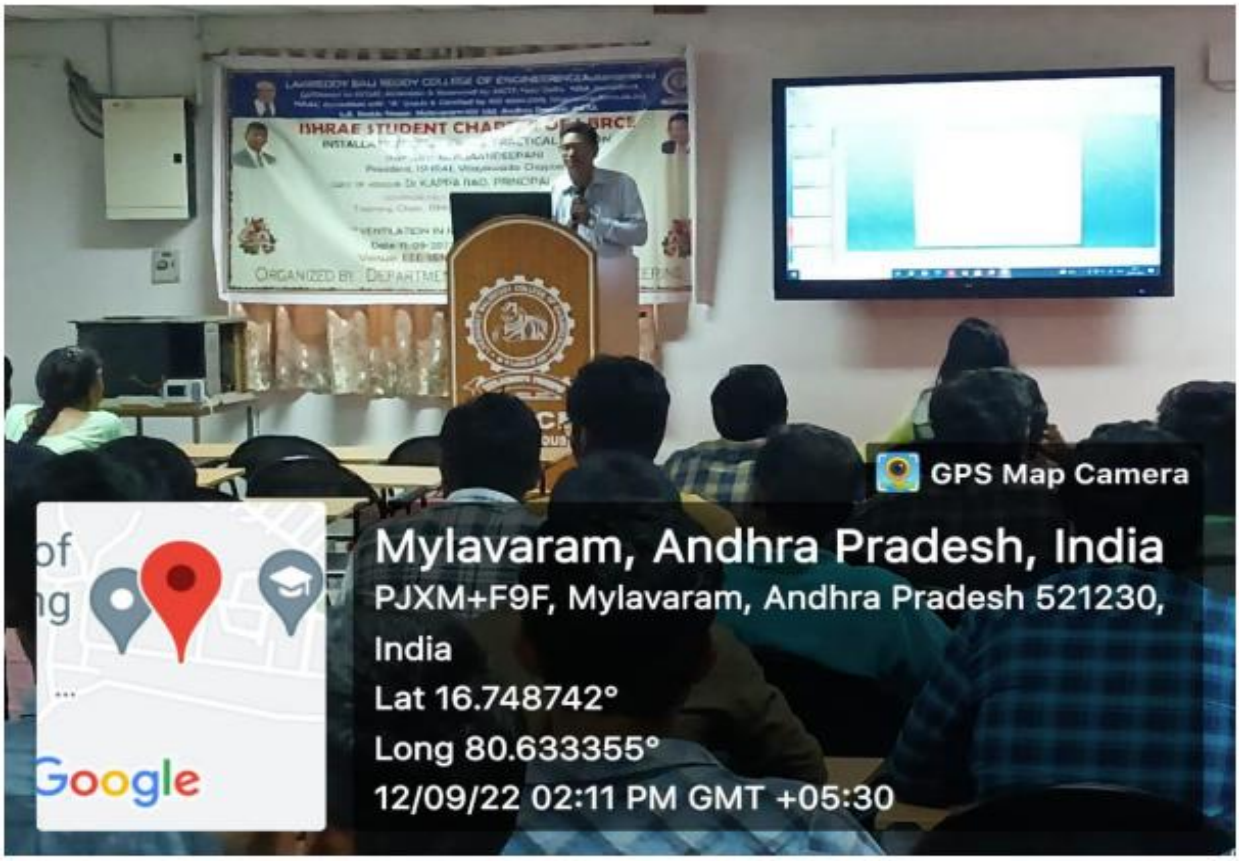


Presentation on global energy potential by Dr.P.Thirumal

Online lecture by Dr.R.Parameshwaran on Nano fluids

GUEST LECTURES

- The Department of Mechanical Engineering organized a online guest lecture on "**ISHRAE Guest Lecture on Ventilation system for residential buildings and Fundamentals of Air conditioning and Refrigeration**" on 12.09.2022 by Mr.K.R.T.Prasad and Ms.Saandeepani Vajje, President, ISHARE Vijayawada Chapter.



Presentation by Mr.K.R.T.Prasad, Technical chair, ISHRAE Vijayawada Chapter

Oath taking ceremony done by Ms.V.Saandeepani, President, ISHRAE Vijayawada Chapter

STUDENT TRAINING PROGRAMS

- The Department of Mechanical Engineering organized One Week skill oriented training program on "Python Programming" on 18-07-22 to 21-07 & 27-07-22 to 28-07-22 (One week) by Mr.B.Anand**,** Mrs. Kamatham Veera Vanitha, Trainer and Developer & Mrs. M.Ruthumma, Trainer and Developer, APSSDC, Vijayawada.

V Semester Students during training program

Students practicing on python programming

SKILL ADVANCED COURSE

- The Department of Mechanical Engineering organized two week skill Advanced course on "Electric & Solar Vehicle-Design & Development" for V semester students by Mr.Rahul Ranjan, Senior Automotive Engineer, AMZ Automotive, Jaipur. Mr.Vinay Pathak,Chief Information officer, I Prime Skills, Jaipur from 22-08-2022 to 27-08-2022(Online) & 05-09-2022 to 10-09-2022(Offline). Mr. S.Rami Reddy, Sr.Assistant Professor, Mr.K.Venkateswara Reddy, Assistant Professor, Mr.A.Pratyush, Assistant Professor coordinated the event.

Online presentation on Introduction to electric & solar vehicle design

V semester students practice session during skill advanced course

COLLABORATIONS / LINKAGES

Name of the Faculty	Name of the Researcher	Name of the Institute	Duration
Dr.K.Murahari	Dr. K. Krishna Kishore	SVNIT Surat	4 Years (upto June 2025)

SUMMARY OF COLLOQUIMS ORGANIZED

S. No	Name of The Faculty	Name of the Topic	Date
1.	Dr.S.Pichi Reddy	Charecterization of Hybrid Fiber Reinforced Composites	11.07.2022
2.	Dr.P.V.Chandra Sekhar Rao	enhancing the performance of automobile radiator by using Al_2O_3 & c_uo Nano fluid as coolant	22.07.2022
3.	Dr.P.Vijay Kumar	Experimental investigation on cylindrical lithium-ion battery Pack thermal management system using TIO_2 Nano fluid coolant	09.08.2022
4.	Dr.P.Ravindra Kumar	Fabrication of solar driven thermoelectric refrigerator using Peltier Effect	25.08.2022
5.	Dr.K.Dilip Kumar	Experimental analysis and performance enhancement of VCR system Running with R134a and R404a by using sub cooling	06.09.2022
6.	S.Srinivasa Reddy	Characterisation of al6082 and cast-iron slag metal matrix composition	21.09.2022

FDP's/STTP's/STC's/WORKSHOP's ATTENDED BY FACULTY

1. Dr.P.Vijay Kumar, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
2. Dr.P.Ravindra Kumar, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.

3. Dr.M.B.S.Sreekara Reddy, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
4. S.Srinivasa Reddy, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
5. Jonnala Subba Reddy, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
6. Dr.Ch.Siva Sankara Babu, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
7. S.Rami Reddy,has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
8. B.Udaya Lakshmi, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
9. S.Uma Maheswara Reddy, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
10. A.Pratyush, has participated in a faculty development program on "Advancements in Thermal and Renewable Energy Technologies (ATRET-2022)" organized by LBRCE, Mylavaram from 04/07/2022 to 09/07/2022.
11. Dr.Murahari Kolli, has participated in a faculty development program on "Design, Fabrication and Applications of Microsystems and Microfluidics" organized by NITK, Suratkal, Karnataka from 12-8-22 to16-8-22.
12. Jonnala Subba Reddy, has participated in a faculty development program on "Futuristic Research in Mechanical Engineering" organized by SRM Institute of Science and Technology, Chennai from 08th to 13th Aug 2022.

13. Dr.Ch.Siva Sankara Babu, has participated in a faculty development program on "Research, Publication and Patent in Humanities and Sciences" organized by SRM Institute of Science and Technology, Chennai from 22-30 Aug 2022.
14. S.Rami Reddy, has participated in a faculty development program on "Design, Fabrication and Applications of Microsystems and Microfluidics" organized by NITK, Suratkal, Karnataka from 12-8-22 to16-8-22.
15. Dr.P.Vijay Kumar, has participated in a faculty development program on "Good management practices of passive cooling designs for thermal comfort and energy savings in construction industry" organized by CIDC, New Delhi on 26.08.2022
16. Jonala Subba Reddy, has participated in a faculty development program on "Welding Application Technology" organized by IIT Madras, Chennai from July to Sep 2022
17. Jonala Subba Reddy, has participated in a faculty development program on "Project Management" organized by IIT Madras, Chennai from July to Sep 2022
18. V.Sankararao, has participated in a faculty development program on "Energy Harvesting & Storage Materials & Devices" organized by NITTTR, Chandigarh, Punjab from 12/09/2022 to 16/09/2022

PATENTS PUBLISHED

Patent Title	Applicants/ Inventors	Patent No.	Published Date	Agency
Machine Learning based prediction of recommended song selections based on the people mindset using the dataset of age and emotional words using deep learning algorithm	Dr.L.Bharathi Dr. Govindraj B. Chittapur AmoghBabu K A V. Senthil Kumar Dr. P. BanuPriya Dr. Subhabrata Banerjee **Mr. Jonnala Subba Reddy** B.Tapasvi	202241038948	22/07/2022	IPR India
A Smart and Handy Cleanser for Fabrics	Dr. V. Anantha Lakshmi Dr. Sridhar S Dr. Gangadhar N B. Amarnath Naidu VemulaVenkatakondaiah **Jonnala Subba Reddy**	202241042605	29/07/2022	IPR India

Hygiene Robotic-based Agricultural Practices to Maintain the Crops from inferring their growth with Unwanted plants and weeds by avoiding Nutrition Sharing	Dr. Mahesh Mallampati Sharada K A Dr.S.M.Ramesh DrRajbhoj Balaji Govindrao Dr.VinothKumar.V Pradip Kumar Saini PreetiAvasthi **Jonnala Subba Reddy**	202241042295	29/07/2022	IPR India
IoT, Big Data science & Analytics, Cloud Computing and Mobile App based Hybrid Model for Healthcare Management System	Dr. T. S. Sasikala Archana V Nair S Dr.S.Raju Mrs. Anjana S DrAnuradha Sarkar Rejini K Dr. S. Srinivasan Dr. Naresh Kumar U **Jonnala Subba Reddy**	202241043737	12/08/2022	IPR India
Designing an Artificial Intelligence module for analyzing Six Sigma-based Approaches to Business Practices in Manufacturing, Services, and Production	Dr N Priyadharshini DipeshDaddelalUike Dr.K.Kalaivani Kalpanadevi D Bhola Khan R. Veerappan Prof. Surendra Ramesh Sawardekar Dr.A.Sumithra **Jonnala Subba Reddy** Dr.A.Sasi Kumar Dr. Animesh Kumar Sharma Mr. Shyamal Mandal	202241045393	19/08/2022	IPR India
Artificial Intelligence and Machine Learning based approach to Predict the preferences of target customers for various Marketing Strategies	A. Priyadharshini Suman Devi Dr. Syed AsadullahHussaini Dr. VikasTripathi Dr. Mohammed Azam Dr. Urmilla Sarkar Dr. GurumeetWadhawa **Jonnala Subba Reddy** Dr. G. Sudhagar Prof (Dr). Nitin Girdharwal Prof. JitendraCharan Dr. A. Sasi Kumar	202241045453	19/08/2022	IPR India

Artificial Intelligence based system along with IoT Alert Mechanism to Predict the Occurrence of Earthquake and Safeguard the Buildings from its Disastrous Effects	Dr. R. Vijay Kumar Dr. Deepak NathujiKakade Dr. Droupti Yadav Ruthra R SuvarnaDevidasKamble Dr. Shweta Rani NyathaniMaramu Dr. Ravindra D Nalawade Dr.P.Arulprakash Prof.S.Pranavan Dr.A.Sasi Kumar **Jonnala Subba Reddy**	202241046666	26/08/2022	IPR India
A smart robot to manage and Monitor the Covid 19 patients along with treating them by reducing the burden on medical practitioner	Ajith V S Swati Trivedi Akriti Pal Dr. Droupti Yadav YadvendraDutt Shukla Neha Srivastava Ankur Srivastava **Jonnala Subba Reddy** MohdEsa Banupriya V Dr. NagsenSamadhanBansod Umesh Chandra Pandey	202241046505	26/08/2022	IPR India
Robotic application based Smart and Self analysisof Electric VehiclesFault Identification and Rectification	Dr.GudipudiNageswara Rao Dr. YogendraRathore Dr.ManishShrimali S.Sakthi AnandGoswami Vivek Dubey RashiGoswami Malini T DrAnnalEzhilSelvi S **Jonnala Subba Reddy** Samraat Sharma Prabhdeep Singh	202241048681	02/09/2022	IPR India
Systematic approach to analyse the impact of utilising the aspects of green building in construction technology	Dr. S. M. Subash Dr. Deepak Kakade Dr.M.Chittaranjan Ravindra Kumar Goliya Pavan Kumar Thimmaraju Dr. Ravindra D	202241048680	02/09/2022	IPR India

	Nalawade Dr.Rashmi Trivedi Dr. Droupti Yadav Prof. S.Pranavan **Jonnala Subba Reddy** Digambar Balasaheb Patil Mr. Nishant Anantrao Upadhye			
Machine Learning approaches to for Improving the Automatic Solar Light Tracking System for Energy Efficiency	SudeshnaSurabhi Dr. T. Jeya Shree R. Kiranmayi Md Ahsan AnjumAyyaj Patel Ekta Menghani Rashi Goswami **Jonnala Subba Reddy** Dr. K. Boopathy Dr. SubhashChander DrSumit Kumar Gupta Samraat Sharma	202241050110	09/09/2022	IPR India

NPTEL ONLINE CERTIFICATIONS

- The following are the details of faculty completed the NPTEL online courses during July-Sep 2022.

S.No.	Name of the Faculty	Title of the course	Duration	Awarding Institute	Grade
1.	Dr.P.Ravindra Kumar	Technologies for clean and renewable energy systems.	July to Sept 2022 (8 Weeks)	IIT Roorkee	Top 5% (Elite + Silver)
2.	Jonnala Subba Reddy	Welding Application Technology	July to Sept 2022 (8 Weeks)	IIT Guwahati	Elite
		Project Management	July to Sept 2022 (8 Weeks)	IIT Kanpur	Successfully Completed

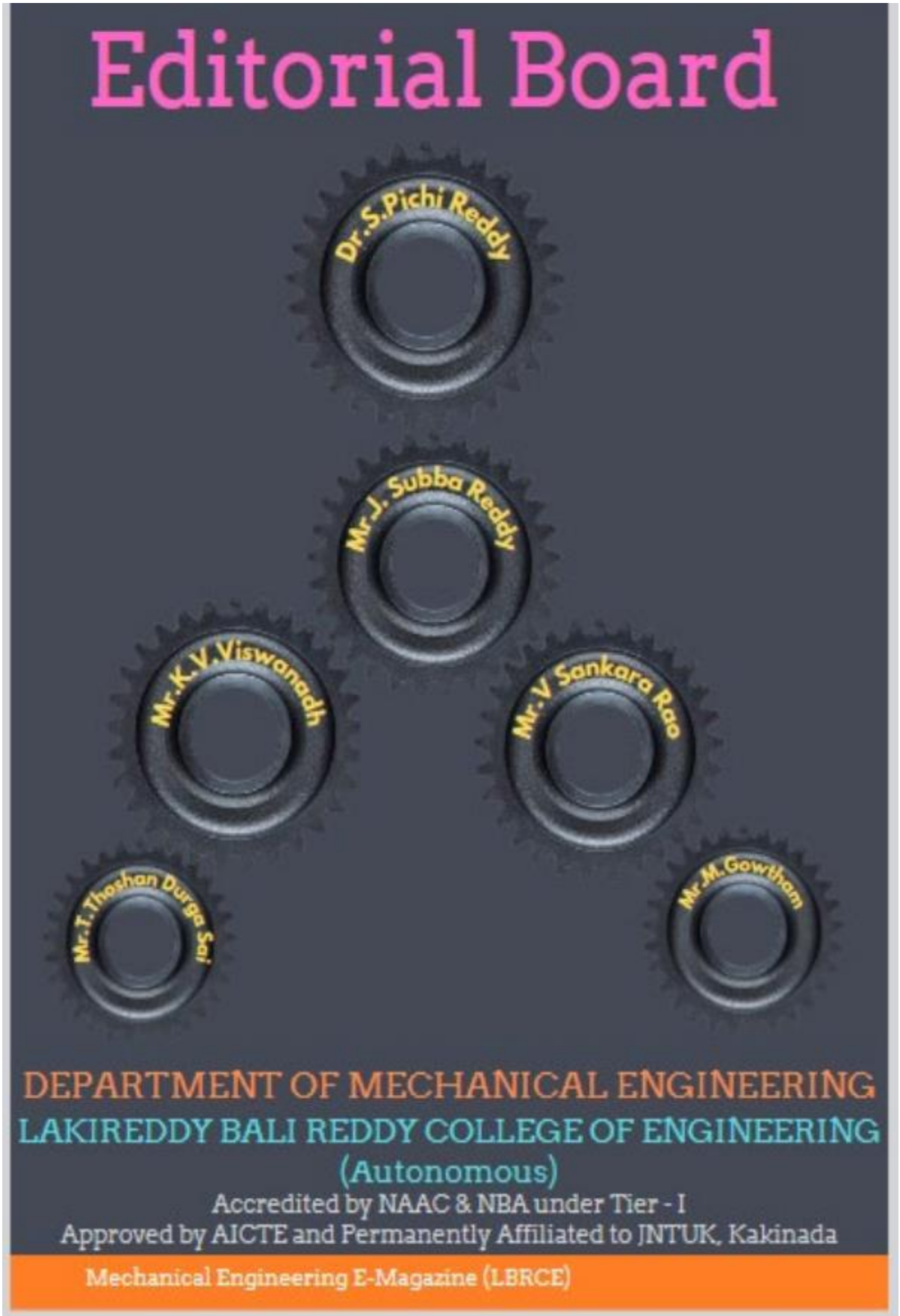
NSS

- The following are the list of students participated as volunteers for Vaccination Drive on 20/07/2022.

S.No.	Student Name	Roll No.	Duration	Place
1	Chamarthi Venkata Sai Anjaneya Mohanesh	21761A0305	20/07/2022	Mylavaram
2	Doppala Srinivas	21761A0310	20/07/2022	Mylavaram
3	Gurram L V D Phani Kumar	2176140314	20/07/2022	Mylavaram
4	Gopisetti Hari Venkat	21761A0339	20/07/2022	Mylavaram
5	Gowrisetti Chaitanya Naveen	2176140341	20/07/2022	Mylavaram

ACKNOWLEDGEMENTS

The department expresses sincere thanks to all faculty, technical staff and students for contribution towards the technical magazine- mech pulse.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