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Mechanical Engineering E-Magazine (LBRCE)

(TIER-I)

MECH PULSE

(JAN-MAR 2025)

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 VIII and volume III. 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 60 students and M.Tech – Thermal Power Engineering with an intake of 6 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 **Dassult 3D Experience centre** (in association with APSSDC) is available. The department has 27 faculty members with 14 Doctoral degrees. Eleven 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.

RESEARCH PROJECT SANCTIONED

Name of the Investigator	Title of the Project	Funding Agency	Reference ID	Total Cost (Rs)	Sanctioned Date
Dr.K.Appa Rao Dr.B.Rambabu Dr.Murahari Kolli	IDEA Lab	AICTE	1-7002877028	90,00,000	12.02.2025

PUBLICATIONS BY FACULTY

- Harish Venu, Manzoore Elahi M Soudagar, Tiong Sieh Kiong, NM Razali, Hua-Rong Wei, Armin Rajabi, **V Dhana Raju,** TM Yunus Khan, Naif Almakayeel, Erdem Cuce, Huseyin Seker, Nanotechnology and LSTM machine learning algorithms in advanced fuel spray dynamics in CI engines with different bowl geometries,Scientific Reports, 15,983, Jan 2025, https://doi.org/10.1038/s41598-024-83211-y ,ISSN:2045-2322, (Q1).
- Jayashri N. Nair, T. Nagadurga, **V.Dhana Raju,** Harish Venu, Sameer Algburi, Sarfaraz Kamangar, Amir Ibrahim Ali Arabi, Abdul Razak, Narasimha Marakala, Impact of fuel additives on the performance, combustion and emission characteristics of diesel engine charged by waste plastic bio-diesel, Case Studies in Thermal Engineering, March 2025, ISSN:2214-157X, https://doi.org/10.1016/j.csite.2025.105755, (Q1)-I.F 6.4.
- T. Nagadurga, **V. Dhana Raju**, Abdulwasa Bakr Barnawi, Javed Khan Bhutto, Abdul Razak, Anteneh WogassoWodajo, Global MPPT optimization for partially shaded photovoltaic systems, March 2025, https://doi.org/10.1038/s41598-025-89694-7, ISSN:2045-2322, (Q1)-I.F 3.4.

- K. Yamini, P. S. Kishore, **V. Dhana raju,** Effect of diethyl ether and isobutanol as fuel additives on the diesel engine attributes fueled with subabul seed biodiesel, Journal of Thermal Engineering, Jan 2025, ISSN: 2148-7847, 10.14744/thermal.0000914 (Q3).
- **Seelam Pichi Reddy,** Yellapragada Naga Venkata Sairam, Mohammad Hasheer ShaikPalavalasa Rohini Kumar, Tamminana Yamini, Medikonduru Maithili Saisree, Nethala Raju, Preparation and Experimental Investigation of Lanthanum Hexa-Aluminate Calcinated Powders, Annales de Chimie - Science des Matériaux, 49 (1), 63-70, Feb 2025, https://doi.org/10.18280/acsm.490109, ISSN: 0151-9107 / 1958-5934.
- **Murahari Kolli,** Chendrasekhar Sunnapu, Nageswara Rao Medikondu, Multi-response optimization of friction stir welding process parameter of AA 5083 with Taguchi-VIKOR approach, Journal of Engineering and Applied Science, Jan 2025, ISSN: 2536-9512/1110-1903, https://doi.org/10.1186/s44147-024-00572-x, (Q3)-I.F 0.5.
- Satish Kumar, A. N. Basavaraju and **V. Dhana Raju,** Effect of Injection Timing and EGR on the Diverse Attributes of Diesel Engine Powered with Juliflora Methyl Ester Blend, Journal of Environmental Research Article Nanotechnology, Jan 2025, 13(4), 2279-0748/ 2319-5541,. https://doi.org/10.13074/jent.2024.12.2441048.

BOOKS AUTHORED

- Dr.S.Mathu Kumar, Dr.S.Iyyappan, Chandrasekara Raja, **Jonnala Subba Reddy** authored a book titled **"**Manufacturing & Material Science" published by REST Publishers in Feb 2025 with ISBN 978-81-985519-8-6.

EVENTS ORGANIZED BY THE DEPARTMENT

INDUSTRIAL VISITS

- The Department of Mechanical Engineering organized an Industrial visit to "Kusalava International Limited, Adavinekkalam" for VI semester students on 24.01.2025. Dr.S.Rami Reddy, Sr. Asst. Professor coordinated the event.

Grinding Machines in Kusalava International Ltd.

VI Sem students in front of Kusalava Industry

LAKSHYA 2025

- The Department of Mechanical Engineering organized a National level technical symposium Lakshya 2025 on 25.01.2025. Dr.A.Nageswara Rao coordinated the event.

Lakshya 2025 A National Level Technical Symposium poster

Students participating in Srujana (Paper presentation) competition

Students participating in Pragna (Poster presentation) competition

Students participating in Medha (Quiz) competition

Students participating in special event OJAS (yantrora) competition

STUDENT CERTIFICATION PROGRAM

- The Department of Mechanical Engineering organized a "Three days workshop on Hands on Ansys" from 27.01.2025 to 29.01.2025 by Md.Asjad Raza, PMRF Scholar, NIT Tirichirappalli. Dr. S. Rami Reddy, Sr. Assistant Professor coordinated the event.

Md. Asjad Raza delivering lecture on Ansys

Student interaction with resource person and HoD

INAUGURATION OF ASME STUDENT CHAPTER

- The Department of Mechanical Engineering organized a Inauguration of ASME student chapter and Guest Lecture on "Essential Skills for Mechanical Engineering Graduates to be Industry Ready". Dr.S.Rami Reddy, Sr. Asst. Professor, coordinated the event.

Principal Dr.K.Appa Rao addressing the gathering

Group photo with dignitaries along with ASME student members

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.A.Nageswara Rao	Harvesting Energy From Footstep Using Pizeoelectric Sensors	05.01.2025
2.	Dr.A.Dhanunjay Kumar	Cyber-Physical System for Crop Health Monitoring And Treatment Advisory	24.01.2025
3.	Dr.S.Rami Reddy	Fabrication of solar aided power generation using speed breakers	11.02.2025
4.	S.Srinivasa Reddy	Fabrication of Self-Sustaining Electricity Generation System by Using Flywheel for Electric Vehicle	23.02.2025
5.	K.V.Viswanadh	Fabrication of Garbage Collection Rover	07.03.2025
6.	K.Lakshmi Prasad	Fabrication of Electric Unicycle	26.03.2025

PATENTS PUBLISHED

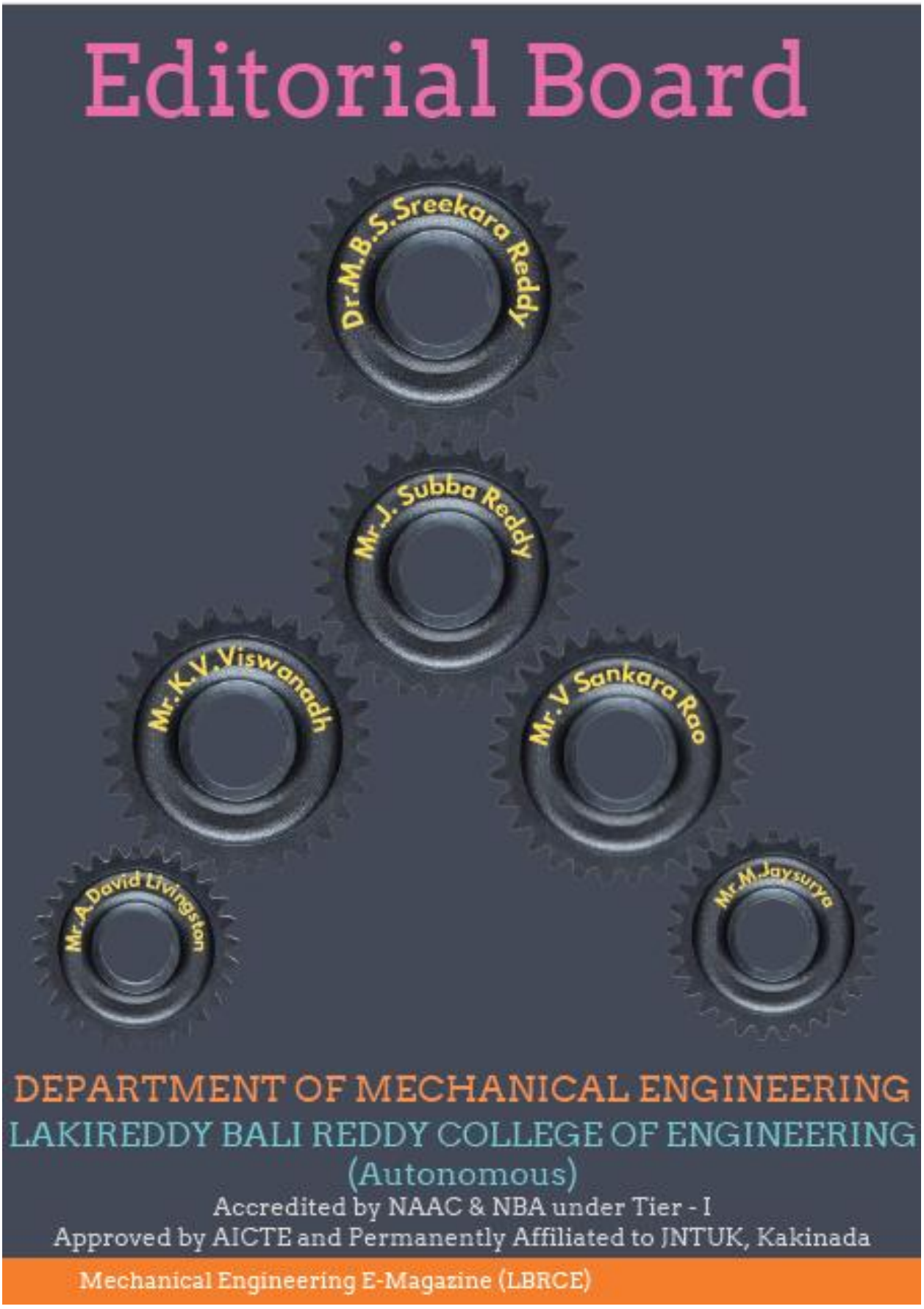
Name of the Inventors	Patent Number	Title of the Patent	Agency	Date of Published
Dr.Subhash Chouhan Dr.Satish Kumar Patel Krrit Rasiklal Rathod Dr. SmrutiGantayat Dr. KshanPrabhaSahoo **Mr. JonnalaSubba Reddy** Miss Nirmala Patel	440623-001	AI-Powered Carbon Sequestration Device	IPR-India	07.02.2025
Er.Bint UI Huda Mrs.Pallave Amol Patil **Mr. Jonnala Subba Reddy** Dr.Vhavani Shankar Ravindra	438209-001	Smart Cane For Blind Users	IPR-India	07.02.2025
Dr.PranoyDebnath Mr.Pankaj Prakash Bhirud Dr.NirmalaWarke Mr.Omesh Kumar Chandrakar **Mr. Jonnala Subba Reddy**	440051-001	Vibration Damping Analyzer Posite Beam	IPR-India	07.02.2025
Mr.Varun Yadav Mr.Swaroop Mallik Dr.Basanth Kumar Bhuyan **Mr. Jonnala Subba Reddy**	437654-001	Off-Grid Power Management Device	IPR-India	07.02.2025
Dr.Jayashri N Nair Dr.Sachin Lotan Boarse Dr.Abilash Suryam Axay patel **Dr.V.Dhanaraju** Vishv Axay Patel Hemantkumar Jayanthibhai Patel Hirenkumar Rashmikany patel Urvasiben Hirenkumar Parel **Dr.M.B.S Srekara Reddy**	202541001885A	Solar Radiation Based Commodities drying device	IPR-India	24.01.2025

FACULTY ACHIEVEMENTS

- **Dr.P.V.Chandra Sekhara Rao,** Professor guided successfully his Ph.D scholor Ch.Sumalatha on 26.03.2025 in JNTUK Kakinada.
- **Ms.P.Mounika**, Asst. Professor enrolled Ph.D in IIITDM Kurnool under the guidance of Dr.Akhtar Khan on 17.01.2025.
- **Mrs.B.Kamala Priya**, Asst. Professor enrolled Ph.D in Anna University, Chennai under the guidance of Dr.P.Maniarasan on 15.02.2025.

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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