
Edition VIII, Volume II, 2024-25
Mechanical Engineering E-Magazine (LBRCE)
NBA
NATIONAL BOARD OF ACCREDITATION
(TIER-I)
Skill AP
APSSDC
ANSYS
MECH PULSE
(OCT-DEC 2024)
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 II. 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.

GRANTS RECEIVED

- Dr.P.Vijay Kumar received a grant of Rs.1,00,000/- from AICTE for conducting of Online Faculty Development Programme under ATAL scheme on "EMERGING GREEN HYDROGEN ENERGY TECHNOLOGIES FOR SOCIETAL SUSTAINABILITY AND CLIMATE CHANGE MITIGATION from 16.12.2024 to 21.12.2024.

PUBLICATIONS BY FACULTY

- Jayashri N Nair, **V. Dhana Raju,** T. Nagadurga, "Solar Ddryers for Food Preservation: An In-Depth Review of Design, Fabrication and Barriers" published in Food Engineering Reviews in Nov 2024 with 1866-7929. https://doi.org/10.1007/s12393-024-09389-z.
- **Dhanunjay Kumar Ammisetti**, Bharat Kumar Chigilipalli, Baburao Gaddala, Ravi Kumar Kottala, Radhamanohar Aepuru, T. Srinivasa Rao, Seepana Praveen kumar, Ravinder Kumar**,** **"**Experimental Investigation and Machine Learning Modeling of Tribological Characteristics of AZ31/B4C/GNPs Hybrid Composites" published in Crystals in Nov 2024, with ISSN 2073-4352. https://doi.org/10.3390/cryst14121007.
- Lakshmi Kanth Ch**, P. Ravindra Kumar**, Bypaneni Krishna Chaitanya, N. Venkata Sairam Kumar, Naga Sai Rama Krishna Thati, N. Satya Vijay Kumar, B. Ravi, **Annamdasu Nagesawara Rao**, "Prediction of Mechanical and Tensile Properties of Self-Compacting Concrete Incorporating Fly Ash and Waste Copper Slag by Artificial Neural Network-ANN" published in Annales de Chimie - Science des Matériaux in Oct 2024 with ISSN 0151-9107. https://doi.org/10.18280/acsm.480506.
- Ravi Prakash Babu Kocharla, **Siva Sankara Babu Ch, Murahari Kolli**, Satyanarayana Kosaraju, Oleg Igorevich Rozhdestvenskiy, Ankita Joshi, Muntather Almusawi, "Evaluation of mechanical and thermal characteristics of e-glass/epoxy composites with the inclusion of graphene nanoparticles" published in Cogent Engineering in Nov 2024 with ISSN 2331-1916. https://doi.org/10.1080/23311916.2024.2419429.

- Harikrishna Chirala, Varun Chandra C, **Murahari Kolli,** Srinivasaraju Pericherla, N Malleswararao Battina, Srinivasarao Gajula, "Some aspects of friction and anisotropic ratios on the work hardening behaviour in the upsetting tests" published in Proceedings Engineering Sciences in Dec 2024 with ISSN 2620-2832. doi:10.24874/PES.SI.24.03.020.

- P. Venkataramana, **P Vijaya Kumar**, B. Balakrishna, Numerical Investigation of a Pulsating Heat Pipe Using Different Nanofluids for Electronic Cooling, published in Journal of The Institution of Engineers (India): Series C in Dec 2024 with ISSN 2250-0545. Doi https://link.springer.com/article/10.1007/s40032-024-01133-0.

- B Nikhil Chakravarthy, **P Vijay Kumar**, **V Dhana Raju, K Appa Rao,** Ramalingam Senthil, Evaluation of performance, emissions and combustion attributes of diesel engines powered by Palmyra biodiesel blends with distinct injection pressures and EGR rates, published in International Journal of Ambient Energy in Oct 2024 with ISSN 0143-0750, doi https://doi.org/10.1080/01430750.2024.2388167.

- Santhosh Goudm, Hiral D. Trivedi, Javedkhan Mohammad Firozkhan, Pathan, **J Subba Reddy**, Renuka Viswanathan, Subhasmita Pattnaik, The Role of Mosquito Behavior in the Transmission of Vector-Borne Diseases, published in African Journal of Biomedical Research in Dec 2024, with ISSN 1119-5096. https://doi.org/10.53555/AJBR.v27i4S. 6041.

- Chinmaya Choudhury, Debasmita Biswal Deepa, V.H. Amruta Pasarkar, **J Subba Reddy**, Sagar Salunkhe, Evaluating the Effectiveness of Mobile Health (mHealth) Interventions in Managing Type 2 Diabetes, published in African Journal of Biomedical Research in Dec 2024 with ISSN 1119-5096. https://doi.org/10.53555/AJBR.v27i3.5654.

BOOK & BOOK CHAPTER

- Dr.M.Srinivasa Rao, **Dr.Siva Sankara Babu Chinka,** M Sujan Kumar, Banothu Devender, Mechanics of Solids by pzRK Publications with ISBN 978-93-48655-68-4 published in Dec 2024.
- Bharat Kumar Chigilipalli, Shirisha Bhadrakali Ainapurapu, Borra N Dhanunjayarao, Arunakumari Mavuri, **Dhanunjay Kumar Ammisetti,** Tribo-Behaviors of Biomaterials and their Applications/Metal-Based Additive-Manufactured Wear-Resistant Bioimplants published in CRC Press in Nov 2024 with ISBN 978-100-338-484-7.

EVENTS ORGANIZED BY THE DEPARTMENT

FACULTY DEVELOPMENT PROGRAM

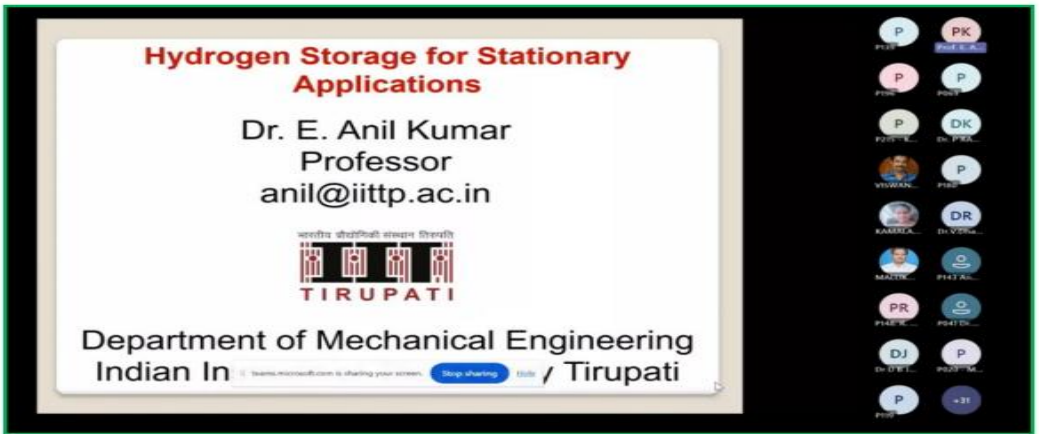
- The Department of Mechanical Engineering organized an ATAL online faculty development program on "EMERGING GREEN HYDROGEN ENERGY TECHNOLOGIES FOR

SOCIETAL SUSTAINABILITY AND CLIMATE CHANGE MITIGATION" from 16.12.2024 to 21.12.2024. Dr.P.Vijay Kumar, Professor & Dr.V.Dhana Raju, Assoc. Professor coordinated the event.

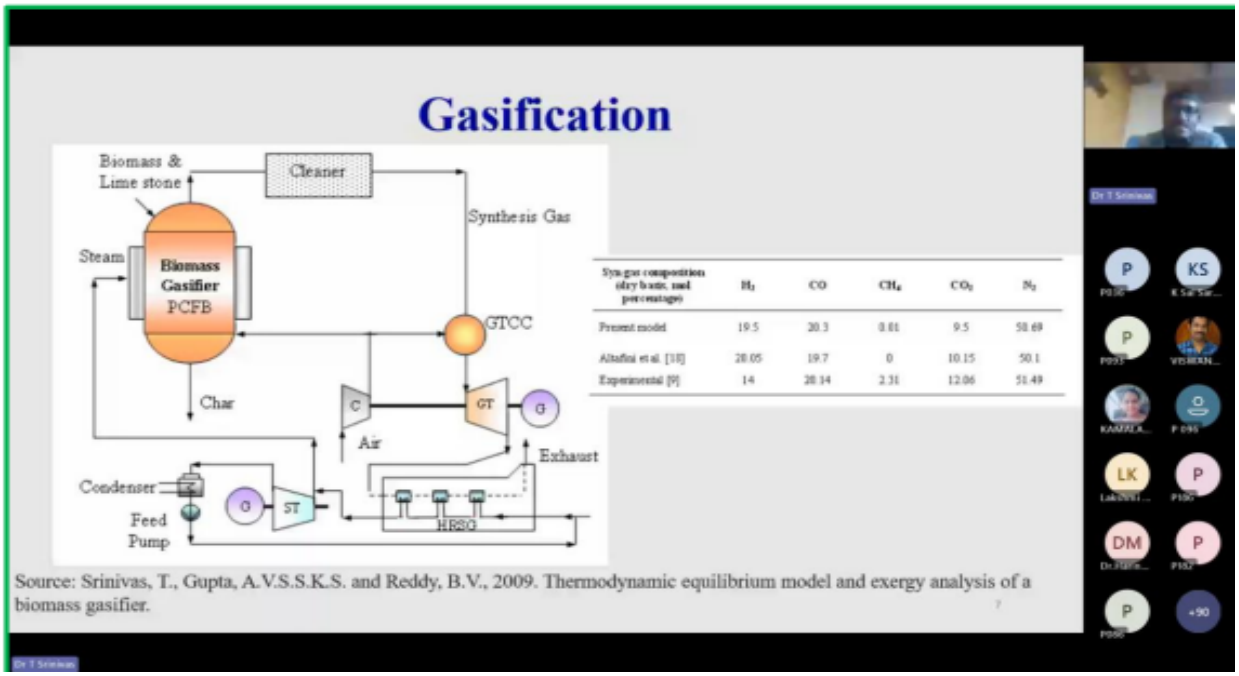
Day-5: (20.12.2024) Friday 6:00 PM - 7.30 PM Session 9

Topic: Solid state hydrogen storage for sustainable energy conversion and storage

Speaker:
Dr. E.Anil Kumar
Professor,
Department of Mechanical Engineering
IIT, Tirupati.



Presentation by Dr.E.Anil Kumar, IIT Tirupati on Hydrogen Storage applications



Presentation by Dr.T.Srinivas, NIT Jalandhar on Gasification

INDUSTRIAL VISITS

- The Department of Mechanical Engineering organized an Industrial visit to "APSRTC Zonal Workshop, Vijayawada" for VII semester students on 04.10.2024. Mr.S.Rami Reddy, Sr. Asst. Professor & Mrs.B.Kamala Priya, Asst. Professor coordinated the event.

Students at the engine maintenance in the industry

Group photo in front of APSRTC Zonal Workshop

- The Department of Mechanical Engineering organized an Industrial visit to "Kusalava International Limited, Adavinekkalam" for IV semester students on 26.12.2024. Mr.K.Lakshmi Prasad, Sr. Asst. Professor and Mr.V.Sankararao, Sr. Asst. Professor coordinated the event.

Presentation on Introduction to Kusalava Industry

IV Sem students in front of Kusalava Industry

ISHRAE CHAPTER ACTIVITY

- The Department of Mechanical Engineering organized a Guest Lecture through ISHRAE student chapter on "**Artificial Intelligence influence on Heating Ventilation Air-conditioning & Refrigeration systems**" on 05.11.2024 by Dr.P.Anusha, Secretary ISHARE Vijayawada Chapter and Dr.Saandeepani Vajje, Past President, ISHARE Vijayawada. Dr. P.Vijay Kumar, Professor, Mr.K.Lakshmi Prasad, Sr. Asst. Professor, coordinated the event.

Presentation by Dr.P.Anusha, Secretary ISHARE Vijayawada Chapter

Group photo with dignitaries along with new ISHRAE CWC 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.	S.Srinivasa Reddy	Development of A Hand Motion – Controlled 360° Rotating Pick And Place Robo	05.10.2024
2.	J.Subba Reddy	Fabrication of Low-Frequency Vibration Isolation Using a Bio-Inspired Cobwed-Zero Stiffness System	24.10.2024
3.	Dr.K.Murahari	Enhancing The Lifespan And Performance Of Agriculture Tillage Tools	13.11.2024
4.	Dr.V.Dhana Raju	Experimental Investigation Of Diesel Engine Performance And Emissions Using Juliflora Biodiesel Blends	27.11.2024
5.	Dr.Ch.Siva Sankara Babu	Vibration Based Crack Detection In Aluminium Beams Using Rao-1 Algorithm	10.12.2024
6.	Dr.B.Sudheer Kumar	Sleep Detection With Anti Collision System For Automobiles	19.12.2024

PATENTS GRANTED

Name of the Inventors	Patent Number	Title of the Patent	Agency	Date of Published
Dr. Battula Sudheer Kumar, Poosapadi, Dhivakar, Gaddala , Dr. Babu Rao, L.R, Gouri, Kumar R, Arun, Sekhar, K Ch	1227850	Nano structured Phase Change Materials for Improved Heat Tranfer	IPR Canada	02.11.2024

Ammisetti Dhanunjay Kumar Aryasomyajula Venkata Satya Lakshmi Sai Bharadwaj Chinnam Sampath Doddamani Dadapeer Gaddala Baburao Konanki Sreenath Kottala Ravi Kumar Kumma Nagarjuna Namdeti Rakesh Veeraiah Goriparthi	202024105759	System for the synthesis of a phase change composite based on activated hydrocarbon	IPR Germany	12.12.2024

FACULTY ACHIEVEMENTS

- **Dr. Murahari Kolli,** Associate Professor guided successfully his Ph.D scholor Sunnapu Chendrasekar Reddy on 23.11.2024 in KLEF, Vaddeswaram.
- **Dr.S.Rami Reddy,** Sr. Assistant Professor awarded Ph.D degree from NIT Patna on 28.12.2024.
- Yedla Lakshmi Narayana enrolled Ph.D in KLEF, Vaddeswaram under the guidance of **Dr. Murahari Kolli,** Associate Professor in Oct 2024.
- K.Sai Babu enrolled Ph.D in JNTUK, Kakinada under the guidance of **Dr. P.Vijay Kumar,** Professor in Oct 2024.
- The following faculty are received "Best Teacher Award" for A.Y. 2023-24 on 05.09.2024.

S.No.	Name of the Faculty	Designation
1.	Dr.V.Dhana Raju	Associate Professor
2.	Mr.S.Srinivasa Reddy	Associate Professor
3.	Dr.K.Murahari	Associate Professor
4.	Dr.B.Sudheer Kumar	Sr. Assistant Professor
5.	Mr.K.Sai Babu	Assistant Professor

- The following are the list of faculty successfully completed NPTEL certifications during June – Nov 2024.

Elite + Gold	Elite + Silver	Elite	Successfully Completed	Topper	Total
02	06	05	04	02	24

S. No	Name of the Faculty	Name of the Course	% of Marks	Grade	Toppers
1.	Seelam Pichi Reddy	Engineering Metrology	**76**	Elite+Silver	
2.	Dr.P Ravindra Kumar	Basic Environmental Engineering and Pollution Abatement	87	Elite+Silver	**Top 5%**
3.	Mr.J.Subba Reddy	Educational Leadership	93	Elite+Gold	
4.		Entrepreneurship	85	Elite+Silver	
5.		Introduction to Machine Learning	75	Elite+Silver	
6.		Research Methodology	72	Elite	
7.		Health Research Fundamentals	70	Elite	
8.		Intellectual Property Portfolio Management	66	Elite	
9.		Learnings Analytics Toos	65	Elite	
10.		Organization Development and Change in 21st Century	62	Elite	
11.		Patent Law for Engineers and Scientists	55	Successfully Completed	
12.		Deep Learning	53	Successfully Completed	
13.		Fundamentals of Artificial Intelligence	50	Successfully Completed	
14.	Dr.K.Murahari	Metallurgical and Electronic Waste Recycling	79	Elite+Silver	
15.	Dr. Vallapudi Dhana Raju	Physics of Renewable Energy Systems	60	Elite	
16.	Dr. Siva Sankara Babu Chinka	Robotics	56	Successfully Completed	
17.	Dr. SUDHEER KUMAR BATTULA	Metallurgical and Electronic Waste Recycling	67	Elite	
18.	A Nageswara Rao	Introduction to Interaction Design	66	Elite	
19.	K Lakshmi Prasad	Metallurgical and Electronic Waste Recycling	90	Elite+Gold	
20.	Mr Sankararao Vinjavarapu	Metallurgical and Electronic Waste Recycling	58	Successfully Completed	
21.	Mr.D.Mallikarjunarao	Energy conversion Technologies (Biomass and Coal)	58	Successfully Completed	

22.	Mr Dhanunjay Kumar Ammisetti	Introduction To Machine Learning	90	Elite +Gold	**Top 5%**
23.	Mr.K.Venkateswara Reddy	Advances in Welding and Joining Technologies	56	Successfully Completed	
24.	Mr.K.Sai Babu	Metal Additive Manufacturing	76	Elite+Silver	

STUDENT ACHIEVEMENTS

- The following are the list of students successfully completed NPTEL certifications during June – Nov 2024.

Elite + Silver	Elite	Successfully Completed	Total
07	30	21	58

S. No	Name of the Student	Name of the Course	Marks	Grade
1.	Atmuri S V S R Pavan Krishna	Introduction To Internet Of Things	85	Elite + Silver
2.	Anagani Pujith Charan	Introduction To Internet Of Things	82	Elite + Silver
3.	Jayamangala Sasidhar	Introduction To Internet Of Things	80	Elite + Silver
4.	Pala Sandhya	Introduction To Internet Of Things	79	Elite + Silver
5.	Vajja Durga Prasad	Introduction To Internet Of Things	79	Elite + Silver
6.	Marni Sri Rama Sai Vivekananda	Introduction To Internet Of Things	76	Elite + Silver
7.	Mudunuri Siva Sai Yaswanth	Introduction To Internet Of Things	75	Elite + Silver
8.	Chandra Hanu Raghava	Introduction To Internet Of Things	70	Elite
9.	Oggu L K M K Pavan Kumar Reddy	Data Science For Engineers	61	Elite
10.	Atmuri S V S R Pavan Krishna	Data Science For Engineers	60	Elite
11.	Pothureddypalli Padma	Introduction To Internet Of Things	60	Elite
12.	Avula Surya Prasad	Introduction To Internet Of Things	69	Elite
13.	Avuti Supriya	Introduction To Internet Of Things	63	Elite
14.	Katari Trinadh	Introduction To Internet Of Things	69	Elite

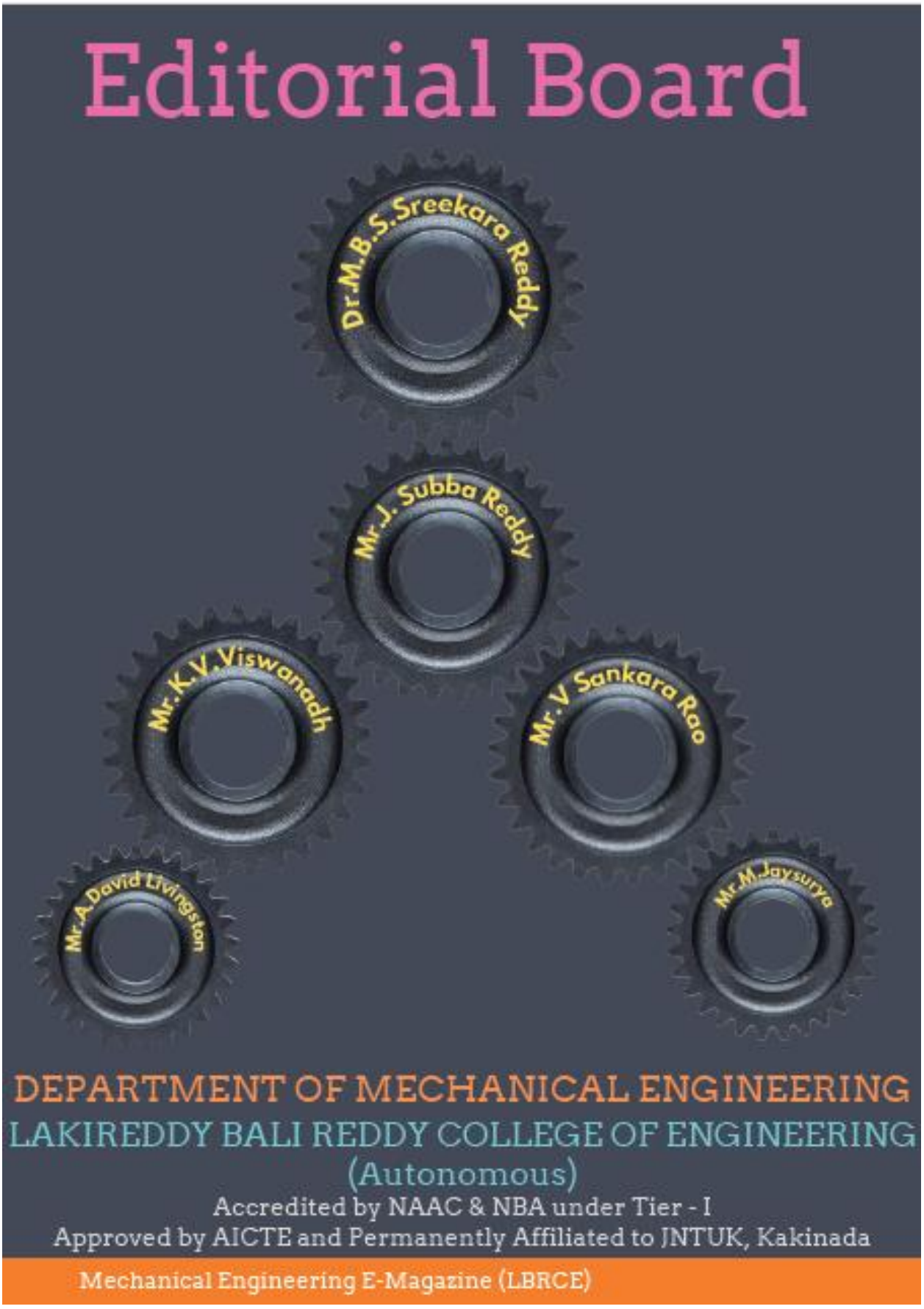
15.	Komaragiri Ramanjaneyulu	Introduction To Internet Of Things	73	Elite
16.	Lakku Abhilashreddy	Introduction To Internet Of Things	69	Elite
17.	Matsa Hemanth Kumar	Introduction To Internet Of Things	62	Elite
18.	Pinniboina Nagarjuna	Introduction To Internet Of Things	61	Elite
19.	Shaik Galisheed Munna	Introduction To Internet Of Things	73	Elite
20.	Shaik Hameed	Introduction To Internet Of Things	60	Elite
21.	Ulichi Abhinav	Introduction To Internet Of Things	71	Elite
22.	Arasavilli Kotinagu	Introduction To Internet Of Things	67	Elite
23.	Badigantla Mohan Kumar	Introduction To Internet Of Things	67	Elite
24.	Badigantla Mohan Kumar	Data Science For Engineers	60	Elite
25.	Gangu Shanmukha Rao	Data Science For Engineers	60	Elite
26.	Kakumanu Prasad	Introduction To Internet Of Things	71	Elite
27.	Mangam Kiran Kumar	Introduction To Internet Of Things	60	Elite
28.	Mohammad Sadiq	Introduction To Internet Of Things	61	Elite
29.	Maripi Jaya Gokul Manikantha	Data Science For Engineers	73	Elite
30.	Naredla Dileep Kumar Reddy	Introduction To Internet Of Things	65	Elite
31.	Paidimarla Charan Sai Harshavardhan Reddy	Introduction To Internet Of Things	65	Elite
32.	Peddireddy Lakshmana Kumar	Introduction To Internet Of Things	60	Elite
33.	Paidimarla Charan Sai Harshavardhan Reddy	Data Science For Engineers	64	Elite
34.	Rudrapati Pramod	Introduction To Internet Of Things	71	Elite

35.	Sunnampudi Tejasai	Introduction To Internet Of Things	60	Elite
36.	Vajja Durga Prasad	Data Science For Engineers	60	Elite
37.	Vurothula Abhinav	Introduction To Internet Of Things	60	Elite
38.	Katta Eswar Kumar	Introduction To Internet Of Things	57	Successfully Completed
39.	Kokkirigadda Sameera	Introduction To Internet Of Things	56	Successfully Completed
40.	Tadepu Venkata Gopi	Introduction To Operating Systems	51	Successfully Completed
41.	Amballa Chandu	Introduction To Operating Systems	51	Successfully Completed
42.	Avula Surya Prasad	Data Science For Engineers	57	Successfully Completed
43.	Chinthakunta Durga Prasanth	Introduction To Operating Systems	54	Successfully Completed
44.	Rangala Lokesh	Introduction To Operating Systems	54	Successfully Completed
45.	Shaik Zaheer Hussain	Introduction To Internet Of Things	56	Successfully Completed
46.	Boppadala Hemanth Nagendra	Data Science For Engineers	53	Successfully Completed
47.	Kaila Chandra Sekhar	Data Science For Engineers	51	Successfully Completed
48.	Madala Venkata Durga Prasad	Data Science For Engineers	53	Successfully Completed
49.	Marni Sri Rama Sai Vivekananda	Data Science For Engineers	54	Successfully Completed
50.	Seelam Bala Krishna Reddy	Introduction To Internet Of Things	55	Successfully Completed
51.	Seelam Bala Krishna Reddy	Data Science For Engineers	56	Successfully Completed
52.	Sunnampudi Tejasai	Data Science For Engineers	53	Successfully Completed
53.	Vallabhaneni Hemanth Kumar	Data Science For Engineers	56	Successfully Completed

54.	Asapu Manikanta	Introduction To Operating Systems	54	Successfully Completed
55.	Parupally Rajesh Manikanta Kumara Swamy	Data Science For Engineers	54	Successfully Completed
56.	Gunji Ravi Teja	Introduction To Operating Systems	54	Successfully Completed
57.	Gunji Ravi Teja	Data Science For Engineers	53	Successfully Completed
58.	Kurcheti Soma Sekhara Manikanta	Data Science For Engineers	51	Successfully Completed

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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