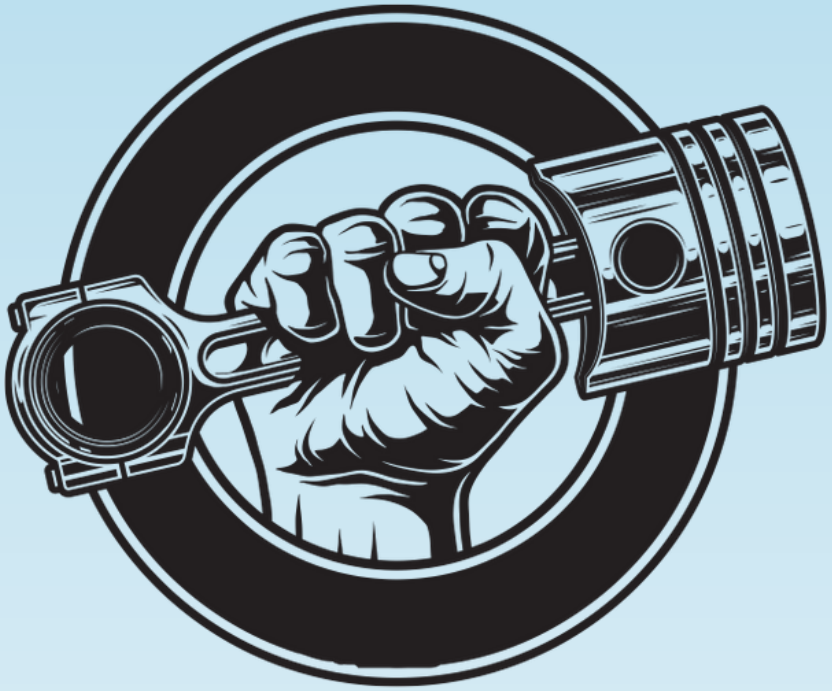
SIR C.R.REDDY COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

NEWS LETTER

VOLUME-10



APRIL-2018

PRINCIPAL'S MESSAGE

I am glad to know that the "Department of Mechanical Engineering" of "Sir C.R.Reddy College of engineering" for bringing this News Letter. The college is proud of the achievements of students and staff have made their endeavor and prominent by becoming very accountable citizens and professionals doing service to the society. I wish all success for the newsletter and hope they carry forward the vigor and dedication for bringing out the future volumes of Newsletter.

-- G.SAMBASIVA RAO

VISION OF THE COLLEGE

To emerge as a premier institution in the field of technical education and research in the state and as a home for holistic development of the students and contribute to the advancement of society and the region**.**

MISSION OF THE COLLEGE

M1: To provide high quality technical education through a creative balance of academic and industry-oriented learning.

M2: To create an inspiring environment of scholarship and research.

M3: To instill high levels of academic and professional discipline.

M4: To establishes standards that inculcate ethical and moral values which contribute to growth in career and development of society.

FROM H.O.D'S DESK

The department has a rich tradition of pursuing academic excellence and providing congenial environment for the overall development of our students. This newsletter provides a panoramic view of the academic, research, co-curricular activities and achievements of the faculty and students of our development. I congratulate the editorial team for their sincere effort to bring out this news letter in time.

--DR.VENKATESWARA RAO

VISION OF THE DEPARTMENT

To be a center of excellence in the field of Mechanical Engineering in this region where the best of teaching, learning and research synergize with a broader sense of social responsibility.

MISSION OF THE DEPARTMENT

To become a nerve center for academic excellence in Mechanical Engineering for all-round development of students by

M1 Creating an environment conducive for high quality teaching and learning.

M2 Enabling the students to meet the challenges of the industry through research oriented education and entrepreneurial activities.

M3 Inculcating ethical values and responsibility towards environment and society with leadership qualities

GLIMPSE OF MECHANICAL

- Students achievements
- Placements
- Student participation
- Staff achievements
- Works shops
- guest lectures
- Sports and games
- Cultural activities
- Research publications
- Departmental library

TESTIMONY

I (Dr. K.LalitNarayan) currently working as professor in the Department of Mechanical Engineering at Sir C.R.Reddy college of Engineering ,Eluru. I completed my M.Tech Production Engineering from J.N.T.U College of Engineering, Hyderabad , and my Ph.D. in Mechanical Engineering from JNTUK, Kakinada. My research areas include Welding Automation, Additive Manufacturing, Design for Manufacturing and Composite Materials. I have an Industrial experience of 5 years at SAMKRG Pistons Pvt Ltd as a Quality Assurance Engineer and 23 years in the field of teaching. During my tenure I Published a book on Computer aided design and Manufacturing which has been acknowledged by various Universities and has good number of Google Scholar Citations. I have received Uttam Acharya award given by Indian Servers Pvt Ltd, IT association of AP and Telangana in the year 2020 as part of contribution towards teaching, research and imparting quality education to the student community.

It is a privilege to be a part of SIR CRRCOE fraternity. This institute is not only rich with highly qualified and experienced faculty, but also with the state-of-art infrastructure facilities such as skill development centers creating conducive atmosphere for the enormous growth of enhancing talent of his or her personality in various aspects such as academic,innovative research, cultural, sports, ethical, and social responsibility. The excellent performance our students are exhibiting by winning best prizes in various competitions such as technical paper presentation innovative design, and the good placements record in various MNC'S is the testimony for the outcome based education system of the instituteion.

I am really bestowed with pride and honor to give a testimony myself.

Finally, I appreciate the dynamic Management, ever hardworking principal and the department HODs, who are striving continuously to provide continuous quality education on par with university standards.

Dr K.Lalit Narayan
Professor,
Dept. of Mechanical Engineering.

ACCOMPLISHMENTS

1. Bali Rama Krishna with registered no. 3141771200134 has got 3rd prize in the Paper presentation contest at the event of FEMFLARE'17 held on 29 Jan 2018 .

RENEWABLE ENERGY

ABSTRACT:

Solar energy is most important non-conventional sources of energy .The objectives of this work is to Design and fabricate a solar cooking box. The performance of solar cooking box is evaluated. From the experiment works the rate of increase in temperature and the time to reach maximum temperature are computed.

Keys words: Solar energy cooking box, rate of increase in temperature, time to reach maximum temperature

2. Kanaka.Venkata Siva Sairam with registered **no. 314177120059** has got 1st prize in the paper presentation contest at the event of FEMFLARE'17 held on 29 Jan 2018.

SHAPE MEMORY ALLOYS

Abstract:
In more recent years the driving force for technological change has shifted towards information technology, however the IT age not left engineering materials untouched and the fusion between designer materials and power of information storage and processing has led to a new family of engineered materials and structures. Most of the engineering materials that we use now have been dumb. Even advanced composites such as glass and carbon reinforced plastics can be tailored to a single combination of properties. This leads the way to new type of advanced materials, by quantum leap in material science and metallurgy in the smart materials.

The term shape memory alloy is applied to that group of metallic materials, by quantum leap in material science and metallurgy is the smart materials .

The term shape memory alloy is applied to that group of metallic materials that demonstrate the ability to return to some previously defined shape or size when subjected to appropriate thermal procedure generally, these materials can be plastically deformed at some relatively low temperature and upon exposure to some higher temperature will return to their shape prior to the deformation .Shape memory effect, the unique property is made possible through solid state phase change that is a molecular rearrangement, which occurs in the shape memory alloys.

The complexity of compositional control, the huge expense associated with (nickel titanium)NITI and the difficulties encounters while machining the micro membrane made of tin necessities an alternative material for fabricating the micro actuators. Attaining the proper composition is especially challenging for thin films and more importantly a low cost, reliable and micro electro mechanical systems compatible deposition methods with precise control of film composition and quality is required. Precise etching and patterning of NITI film compatible with memes process demands the use of focused ion Beam machining which is very complex, low thermal sensitivity, low operation speed> all the problems finally led to the alternative material copper zinc aluminum and less complex process by electron beam evaporation.

3.Beesetty.Naga Sai Maneesh with registered **no. 314177120129** has got 2nd prize in the paper presentation contest at the event of YOUR FEST on 20th Feb 2018 in Usha Rama College of Engineering.

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ECONOMICS AND PERFORMANCE OF DIESEL ENGINE USING VEGETABLE OILS

Abstract:

In the world and particularly in India , the diesel Engine dominates the field of commercial transportation and agricultural machinery on account of its superior fuel efficiency. The increasing cost of petrol and the uncertainties in its superior fuel efficiency . the increasing cost of petrol and the uncertainties in its supply have accelerated the tendency to depend heavily on the diesel engines. The consumption of diesel oil in India is several times higher than petrol consumption. Due to shortage of diesel fuel and its increasing cost, an alternative source of fuel for diesel is very much needed. it has been found that vegetable oils hold special promise in this regard. Since they can be produced from the plants grown in rural areas and India being an agricultural based country, it will not be a big problem to produce vegetable oils.

Pongamia oil having calorific value 35800kj\kg and specific gravity in 0.93 can be used as a diesel substitute. pongania oil has some excellent properties , which are very similar to that of diesel. Objective of the present work aims to find out suitably of pongania oil and its blends with diesel oil. Different blends of pongania oil and diesel in steps of 10% blend from 0% to 50% were tested.

4.Upputholla. Manikanta Vasu with registered **no. 314177120109** has got first prize I the paper presentation contest at the event of YOUR FEST on 20th Feb 2018 in Usha Rama College of Engineering

COMPUTER-AIDED JIG DESIGN AND ANALYSIS SYSTEM.

Abstract :

In the modern manufacturing industry jig plays an important role for mass\batch production of similar components. The design of jig is a knowledge intensive process and it involves much of the expertise. in the design process discrete parameters associated with both the cutting condition and the work piece characteristics need to be considered . despite the systematic design procedure being used in jig design followed by working conditions. The consequence by virtue of such problems in real time conditions thus a systematic approach is required to ascertain safe use of jigs nevertheless existing CAD software like NX and other platforms deliver a comprehensive design simulation and validation environment for some of systems and sub systems if, such a support for design of jigs is explicitly incorporated with the available platforms like NX, then it will lead to waste reduction, quality improvement and shorter lead times. Hence development of a framework for simpler design and manufacturing of jig is essential.

The present paper attempts to develop an algorithm with categorization of issues associated with design automation for flexibility in manufacturing of jigs through

This paper, design and analysis simplicity and decision support are explained for use of jigs and its efficacy..

PROJECTS

Fabrication of vertical axis highway wind turbine
Guide: Sri.E.Venkateswara Rao

Fabrication of thermoelectric refrigirator
Guide: Dr.M.Sri Rama Murthy

Fabrication of solar electric powered rickshaw
Guide: Dr.G.Samba Siva Rao

Design and fabrication of universal flexible drilling Machine model
Guide: Sri.L.N.V.Narasimha Rao

Fabrication of motor vehicle brake pad using local material
Guide: Sri S.V.Gopala Krishna

TECHNICAL MANPOWER

The department has adequate technical manpower, technicians 9 members and lab helpers 6 members. All technicians and lab helpers are highly dedicated, committed to their duties during lab hours. They have more than 15 years of experience and well qualified and experienced in the academic laboratories. During project work of final year students, technicians are very cooperative with the students to do students projects. Students are exploiting the services of technicians such as welding, wood working, machining and material testing etc..The following is the list of technicians and lab helpers,

1.N. Satyanarayana
2.N.T.V. Satyanarayana
3.K. Anil Kumar
4.K. Durga Prasad
5.Ch. Srinivasa Rao
6.V. Maruthi Prasad
7.R. Gerata Raju
8.Shaik Hussain Saheb
9.B.N. Vishnu Kumar (lab helper)
10.R. Mahesh Babu (lab helper)
11.G. Gandhi(lab helper)
12.Ch. Satish(lab helper)
13.Yesub(lab helper)
14.Lurdhuraju
15.M. Siva Rama Krishna (lab helper)

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----------THE END----------