S.R.K.R. ENGINEERING COLLEGE(AUTONOMOUS)
DEPARTMENT OF MECHANICAL ENGINEERING
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RECOGNISED AS SCIENTIFIC & INDUSTRIAL RESEARCH ORGANISATION
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Sri.Ch. Rama Bhadri Raju
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B.Harish Kamal & M. Ramya

STUDENT TECHNICAL MAGAZINE

COLLEGE VISION & MISSION

VISION

Sagi Rama Krishnam Raju Engineering College will be offering Engineering and Technology Programs of choice, where parents want to send their children, where students want to learn, where employers seek Quality Engineers and Technologists, where Industry and Government find Technological Innovations.

MISSION

The Mission of the College is "Eminence in Technical Education through the quality of Programs teaching and research with social relevance".

MECHANICAL ENGINEERING DEPARTMENT VISION & MISSION

VISION

Mechanical Engineering Department strives to be recognized globally for quality education, training and research leading to well-qualified engineers, who are innovative, entrepreneurial and successful in solving problems of society.

MISSION

- Impart quality education to students to enhance their skills and make them globally competitive.
- Maintain a vital and state-of-the-art research to provide its students and faculty with opportunities to create, interpret, apply and disseminate knowledge.
- Prepare its graduates to pursue higher studies, serve the profession and meet intellectual, ethical and career challenges.

Program Educational Objectives (PEOs)

PEO1 : To Educate the graduate of the program to build a successful technical or professional career in Mechanical Engineering.

PEO2 : To envisage graduate engineer to achieve the goal in terms of pursuing higher education and Research and Development activities.

PEO3 : To help graduates become a moral & ethically responsible citizen in nation building.

Program Outcomes (POs)

Engineering Graduates will be able to:

PO1: Engineering knowledge:- Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: 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.

PO3: 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.

PO4: 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.

PO5: Modern tool usage:- Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: 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.

PO7: 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.

PO8: Ethics:- Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work:- Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: 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.

PO11: 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.

PO12: 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 : Apply mechanical engineering fundamentals to design mechanical engineering systems and thermal systems.

PSO2 : Identify and select appropriate manufacturing processes and apply quality control methods for production of various components.

SANKETA'17

A National Level Technical Symposium

8th - 9th February, 2017

DEPARTMENT OF MECHANICAL ENGINEEING

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SANKETA'17

SRI. S. PRASADA RAJU,
Chief Patron, SANKETA'17,
President,
S.R.K.R. E.C. Management Association.

MESSAGE

I wish to congratulate the department of Mechanical Engineering for organizing a National Level Technical Symposium SANKETA'17 on 8th and 9th of February, 2017. I firmly believe that the symposium helps participants from various engineering colleges across the country to show their talents and to enhance their skills in several aspects. S.R.K.R. Engineering College always strives to improve the all-round improvement and growth of the upcoming engineers and strives for their careers to establish themselves in various parts of the world.

I send my warmest good wishes for its continued growth in future.

S.PRASADA RAJU.

SANKETA'17

SRI. G. RANGA RAJU(MURALI),
Chief Patron, SANKETA'17,
Chairman,
S. R. K. R. E. C. Management Association.

It is a great privilege to know that SANKETA'17 is being organized by the Department of Mechanical Engineering on 8th and 9th February, 2017. This event is enriched with knowledge and communication skills which help the students in several aspects of their technical career. S.R.K.R. Engineering College is always a step forward in its encouragement to students for their better future.

I wish all the good luck to the program.

G. RangaRaju (Murali).

SANKETA'17

SRI. S. V. RANGA RAJU,
Chief Patron, SANKETA'17,
Honorary Director,
S. R. K. R. Engineering College.

MESSAGE

Firstly I am proud to be a part of the college, because S.R.K.R. Engineering College is the only one which enhances the student's inbuilt talents. I am greatly delighted to know that Mechanical Department is conducting SANKETA'17, a National Level Technical Symposium. This is a great event which is extremely beneficial for students to build up their career. I wish you a great success in your event.

Hope your innovative ideas and diligences surely help you to succeed.

S. V. RANGA RAJU

SANKETA'17

Dr.G.P.Saradhi Varma

Patron, SANKETA'17,

Principal,

S.R.K.R. Engineering College.

MESSAGE

It gives me immense pleasure to know that the students of Mechanical Engineering Department are organizing SANKETA'17, a National Level Technical Symposium on 8th and 9th February,2017 in our college.

I am sure that the budding technocrats will acquire a lot of knowledge during this technical symposium and reveal their dedication in nation building activity in our country.

I would like to thank all the sponsors of this event for their support and encouragement. I place on record my appreciation for excellent efforts to the staff members and students of Mechanical Engineering Department in organizing this event.

Wishing all success in their future endeavors.

Dr.G.P.SARADHI VARMA.

SANKETA'17

Dr. K. Brahma Raju,
President, SANKETA'17,
Professor & Head,
Department of Mechanical Engineering,
S.R.K.R. Engineering College.

MESSAGE

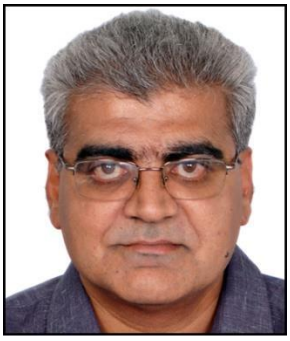
I feel honoured to be a part of this National Level Technical Symposium organized under the aegis of Mechanical Engineering Department. We have always strived to cherish the students with innovative thoughts. We provide a platform for the young techies to have an opportunity to present their ideology.

My best wishes to the faculty and students for being a part of this event and special thanks to all the sponsors of this event for their support and encouragement

Wishing all to have a great experience and acquire knowledge in this event.

Dr. K. Brahma Raju.

SANKETA'17



Prof.N.V.Subba Raju

Convener, SANKETA'17,

Professor,

Department of Mechanical Engineering,

S.R.K.R. Engineering College

MESSAGE

I am glad to be a part of SANKETA'17, a National Level Technical Symposium which is going to be organized by Mechanical Engineering Department on 8th and 9th of February 2017. The aim of this symposium is to inculcate awareness among the students to provide a fruitful interaction on the new emerging technologies in the field of Mechanical Engineering. This symposium helps for the better articulation of future researches.

I congratulate the students for organizing such a great event and special thanks to all the sponsors for their support and encouragement.

I wish all the participants a nice time in this Symposium.

Prof. N.V.SUBBA RAJU

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- **V.Venkatesh**

Technical and Eco+ papers

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20.	S.PAVAN KUMAR	BASIC AERODYNAMICS AND THE THEORY OF FLIGHT	---
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23.	GORLE.SIRISHA,VEMULA SNEHA SAI	BIOMECHATRONIC HAND	S.R.K.R. ENGINEERING COLLEGE
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26.	SEERAM JAHNAVI,VUTA HARSHITHA	AIR BAGS	S.R.K.R. ENGG. COLLEGE

27.	G.AJAY KUMAR,G,RAJESH CHOWDARY	SIX STROKE ENGINE	B.V.C.INSTITUTION OF TECHNOLOGY
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35.	HARIKA KANDUKURI	NEXT GENERATION IS 2 – STORKE ENGINES WIHTOUT SPARK PLUGS!	SASI INSTITUTE OF TECHNOLOGYAND ENGINERRING


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DUAL FUEL SIX STROKE ENGINE WITH EGR TECHNOLOGY

G.Sandeep **B.H.Sohith varma**

The Present scenario of Fuel Consumption is well known to everyone. Everyday technical people talk about the depleting Fuel sources and Exhaust hazards. Particularly about the Diesel engines find their importance more than the Petrol engines due to their operating cost and Fuel consumption But Diesel engines have their demerits in the area of Exhaust and Power loss. Necessary steps have to be taken in order effectively use the Fuel available. We have brought the UTILIZATION OF SIX STROKE ENGINES which runs on DUAL FUEL to your view. The Six Stroke Engine‘s Principle resembles the Double Stage Compressor. By this way effective Compression is done and the need for Turbocharger is completely neglected. We have also considered Cylinder‘s position in Six Stroke engine. Also the Pollution (NOx) emitted by the Diesel Engines is also taken into account. We found the solution in the form of Dual fuel and Exhaust Gas Recirculation system. The Combusting Temperature is above 2000 F and this is the prime reason for NOx Emission. So an Alternative Fuel which can be combusted below the level of Diesel should be used. Moreover the availability and production cost must be taken into consideration. We found Ethanol as a better alternative for Diesel. The Cold Starting of the Engine is made easier using GLOW PLUG which is used to preheat the Charge coming inside the Combustion Chamber.

NANO BOTS

K.Sai Rama Sekhar **M.Girish**

Nano bots are robots of size 0.0000000001 metres, which is hundred thousand times smaller than our hair. _If we live for another 20 years, it is going to add 50 more years to our life. It is not any fantasy but the achievement of this technology..

Reasons for developing this technology: Cancer is the main target of this technology. To identify the cancer in initial stage. To increase the average life span of humans.Nano bots and their working: These are injected into our blood streams and they travel all the body and keeps progressing about each and every part of our body. And we can see all the parts of our body and their functioning and can send updates to our phones. Not only study but also fight against the disease causing viruses.


LAZZA
R
ICE CREAMS

CARBON CAPTURE AND STORAGE

M.V.V.S.M.Akhil

Climate change is one of the serious obstacles to sustain our environment along with rapidly economic development. Numerous projects on mitigation of climate change have been carried out world widely. Some apply Carbon Capture and Storage (CCS) technologies on industrial processes and power plants to alleviate the situation by capturing the CO2 emissions from the fossil fuel and storing CO2 in environment friendly manners.Human-caused global warming occurs mostly because of greenhouse gases, such as carbon dioxide and methane, that get poured into the air by humans burning fossil fuels for energy and other processes. These gases trap heat before it can escape out into space. Carbon dioxide is the biggest factor in this warming, scientists have said, because billions of tons of the gas are released every year and it stays in atmosphere for long period of time.Ordinarily, this gas is drawn out of the atmosphere by plans which is used for photosynthesis, and a chemical process called weathering rocks.this process happens when co2 and other gases that dissolve in water form weak acids that then chemically react with minerals to form other solids, like clays. CO2 captured is normally condensed into liquid to reduce its volume (417 times smaller under atmospheric conditions) for easy transportation and storage. Whereas the volume of the solidified CO2 with the proposed method is 667 times less than that of CO2 gas under the atmospheric conditions

AUGUMENTED REALITY

PREM KUMAR KAGANI

Augmented reality (**AR**) is a live direct or indirect view of a physical, real-world environment whose elements are *augmented* (or supplemented) by computer-generated sensory input such as sound, video, graphics or GPS data. It is related to a more general concept called mediated reality, in which a view of reality is modified (possibly even diminished rather than augmented) by a computer. As a result, the technology functions by enhancing one‘s current perception of reality. By contrast, virtual reality replaces the real world with a simulated one. Augmentation is conventionally in real-time and in semantic context with environmental elements, such as sports scores on TV during a match. With the help of advanced AR technology (e.g. adding computer vision and object recognition) the information about the surrounding real world of the user becomes interactive and digitally manipulable. Information about the environment and its objects is overlaid on the real world. This information can be virtual or real, e.g. seeing other real sensed or measured information such as electromagnetic radio waves overlaid in exact alignment with where they actually are in space.

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DNA ORIGAMI STRUCTURES

S.Veda Narayan Parasar

DNA origami enables the precise fabrication of Nano scale geometries. The mechanical behavior of flexible DNA origami rotational and linear joints that integrate stiff double-stranded DNA components and flexible single-stranded DNA components to constrain motion along a single degree of freedom are first designed, fabricated and characterized. Multiple joints with simple 1D motion were then integrated into higher order mechanisms. One mechanism is a crank–slider that couples rotational and linear motion, and the other is a Bennett linkage that moves between a compacted bundle and an expanded frame configuration with a constrained 3D motion path. Finally, distributed actuation of the linkage using DNA input strands to achieve reversible conformational changes of the entire structure on ~minute timescales are achieved.

THE FIFTH MODE OF TRANSPORTATION HYPERLOOP

N. Hari Durga Srinivas

Present there are four types of transporting systems are in existence. They are water, air, rail ways and roads. These modes of transportation are either slow are expensive. HYPERLOOP is a modern way of transportation that seeks to change the paradigm by both fast and inexpensive for people and also goods. Hyper loop is a unique design concept .The Hyper loop is the future of transportation .A network of tubes, sealed off from outside pressure contains pods that can propel passengers or cargo up to speeds of 750 mph. Hyper loop consists of lower pressure tube with capsules that are transported low and high speeds throughout the length of the tube. The capsules are supported on a cushion of air featuring pressurized air and aerodynamic lift. The capsules are accelerated via a magnetic linear accelerator affixed at various stations on lower pressure tube with rotors contained in each capsule. Passengers may enter and exit hyper loop located at end of the tube or branches along the tube length.


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JET ENGINE

K.S.S. Mani Deep

Turn your eyes to the sky and it's likely you'll see more than a few vapor trails—the wispy white lines that jet planes scribble on the great blue canvas stretched above our heads. A jet engine is a machine that converts energy-rich, liquid fuel into a powerful pushing force called thrust. The thrust from one or more engines pushes a plane forward, forcing air past its scientifically shaped wings to create an upward force called lift that powers it into the sky. That, in short, is how planes work—but how do jet engines work? One way to understand modern jet engines is to compare them with the piston engines used in early airplanes, which are very similar to the ones still used in cars. A piston engine (also called a reciprocating engine, because the pistons move back and forth or "reciprocate") makes its power in strong steel "cooking pots" called cylinders. Fuel is squirted into the cylinders with air from the atmosphere. The piston in each cylinder compresses the mixture, raising its temperature so it either ignites spontaneously (in a diesel engine) or with help from a sparking plug (in a gas engine). When we talk about jet engines, we to tend think of rocket-like tubes that fire exhaust gas backward. Another basic bit of physics, Newton's third law of motion, tells us that as a jet engine's exhaust gas shoots back, the plane itself must move forward.

ELECTRICITY GENERATION THROUGH VEHICLES ON HIGHWAYS USING WIND TURBINE

B.S.S.Veeresh Babu **Jasti Sai**

The main objective of the project and presentation is to design and modify a wind turbine to recapture wind energy (waste energy as input) from vehicles on the highway and covert into useful electrical. Wind energy is considered the fastest growing clean energy source. However, it is limited by variable natural wind. Highways can provide a considerable amount of wind to drive a turbine due to high vehicle traffic. This energy is unused. Extensive research on wind patterns is required to determine the average velocity of the wind created by oncoming vehicles. The wind turbines will be placed on the medians therefore fluid (air) flow from both sides of the highway will be considered in the design to rotate turbine and. using all of the collected data, existing streetlights on the medians can be fitted with these wind turbines. Additionally, since the wind source will fluctuate, a storage system for the power generated will be designed to distribute and maintain a constant source of power. Ideally, the turbine can be used globally as an unlimited power source for streetlights and other public amenities. Considering India the source being collected will be enough to store efficient.


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MAGNETIC REFRIGERATION

A.MAHEEDHAR **B.RAJA NARAHARI**

Magnetic refrigeration is an emerging, environment-friendly technology based on a magnetic solid that acts as a refrigerant by magneto-caloric effect (MCE). In the case of ferromagnetic materials MCE is a warming as the magnetic moments of the atom are aligned by the application of a magnetic field, and the corresponding cooling upon removal of the magnetic field. There are two types of magnetic phase changes that may occur at the Curie point: first order magnetic transition (FOMT) and second order magnetic transition (SOMT). The reference cycle for magnetic refrigeration is AMR (Active Magnetic Regenerative cycle) where the magnetic material matrix works both as a refrigerating medium and as a heat regenerating medium, while the fluid flowing in the porous matrix works as a heat transfer medium. Regeneration can be accomplished by blowing a heat transfer fluid in a reciprocating fashion through the regenerator made of magneto caloric material that is alternately magnetized and demagnetized. In this paper, attention is directed towards the near room-temperature range. We compare the energetic performance of a commercial R134a refrigeration plant to that of a magnetic refrigerator working with an AMR cycle. Attention is devoted to the evaluation of the environmental impact in terms of a greenhouse effect. The comparison is performed in term of TEWI index (Total Equivalent Warming Impact) that takes into account both direct and indirect contributions to global warming. In this paper the AMR cycle works with different magnetic refrigerants: pure gadolinium, second order phase magnetic transition ($Pr_{0.45}Sr_{0.35}MnO_3$) and first order phase magnetic transition alloys ($Gd_5Si_2Ge_2$, $LaFe_{11.3}84Mn_{0.3}56Si_{1.26}H_{1.52}$, $LaFe_{1105}Co_{0.94}Si_{110}$ and $MnFeP_{0.45}As_{0.55}$). The comparison, carried out by means of a mathematical model, clearly shows that $GdSi_2Ge_2$ and $LaFe_{11.384}Mn_{0.356}Si_{1.26}H_{1.52}$ has a TEWI index always lower than that of a vapor compression plant. Furthermore, the TEWI of the AMR

CONTINUOUS CASTING

G.Naveen kumar **Ch.Gopala Raju**

Earlier 1950s steel was poured into stationary moulds to form _ingots' since then ―continuous casting‖ has evolved to achieve improved yield, quality, and productivity & cost efficiency. Continuous casting, also called strand casting, is the process whereby molten metal is solidified into a semi-finished billet, bloom, or slab for subsequent rolling in the finishing mills. The continuous casting has several configurations to produce the steel as vertical, vertical with bending and curved type. Continuous casting transforms molten metal in to solid on a continuous basis and includes a variety of commercial processes. These processes are the most efficient to solidify large volumes of metal in to simple shapes for subsequent processing. The present paper describes about the Visakhapatnam steel plant (VSP), which is the first coastal based steel plant of India is located, 16 km south west of city of destiny i.e. Visakhapatnam. The VSP has an installed capacity of 3 million tons per annum of liquid steel and 2.656 million tons of saleable steel.


Sun
BROADBAND

THE OCEAN CLEAN UP ORGANISATION

K.v.v.s Tejaswani

The oceanic cleanup organization is that which develops new technologies to get rid of oceanic wastes. Strolling through the average supermarket find literally hundreds of items to make their life comfortable, such as wrapped snack cakes, plastic bags etc. For man these may be the items of comfort but for the marine animals they can be floating minefield.the organization was found in 2013 by a Dutch Inventor. This organization aimed at reducing the oceanic waste and garbage there by increasing the marine life. It was estimated by a research organization that if the required measures were not taken with a specified time then by 2050 the plastic content in oceans would exceed more than the fishes in the oceans The Dutch inventor who started the organization was neither a P.HD nor possesses a degree. The inventor proposed the usage of natural ocean currents and winds to passively transport ocean currents and winds to an anchored collection platform. A prototype type was created and tested in smaller water bodies but many did not believe that his invention would succeed because the conditions in oceans change drastically due to high ocean currents and wind speeds. But to every one‘s surprise this came out to be a success. ocean clean up array is an anchored network of floating booms and processing platform will span the radius of the gyre.one of the most significant advantages of using the booms instead of net is that the marine life cannot be caught in them. The inventor was awarded for his work in the field of environmental protection .some of them are the champion of the earth 2014,index award 2015 etc.so although a cleanup will have a profound effect it is just the part of the solution. We also need to close the tap, to prevent anymore plastic from reaching the ocean in the first place.

UNMANNED AERIAL VEHICLE

U.Sai Jyoshna **M.Tarun Teja.**

Unmanned Aerial Vehicles (UAVs) are aircrafts that fly without any humans being onboard. They are either remotely piloted, or piloted by an onboard computer. This kind of aircrafts can be used in different military missions such as surveillance, reconnaissance, battle damage assessment, communications relay, minesweeping, hazardous substances detection and radar jamming. However they can be used in other than military missions like detection of hazardous objects on train rails and investigation of infected areas. Aircrafts that are able of hovering and vertical flying can also be used for indoor missions like counter terrorist operations. Noah sent a dove out of the ark to investigate if the flood ended instead of risking his lifi bygoinghimself.


Coca-Cola

HYBRID TECHNOLOGY AND IMPLEMENTATION

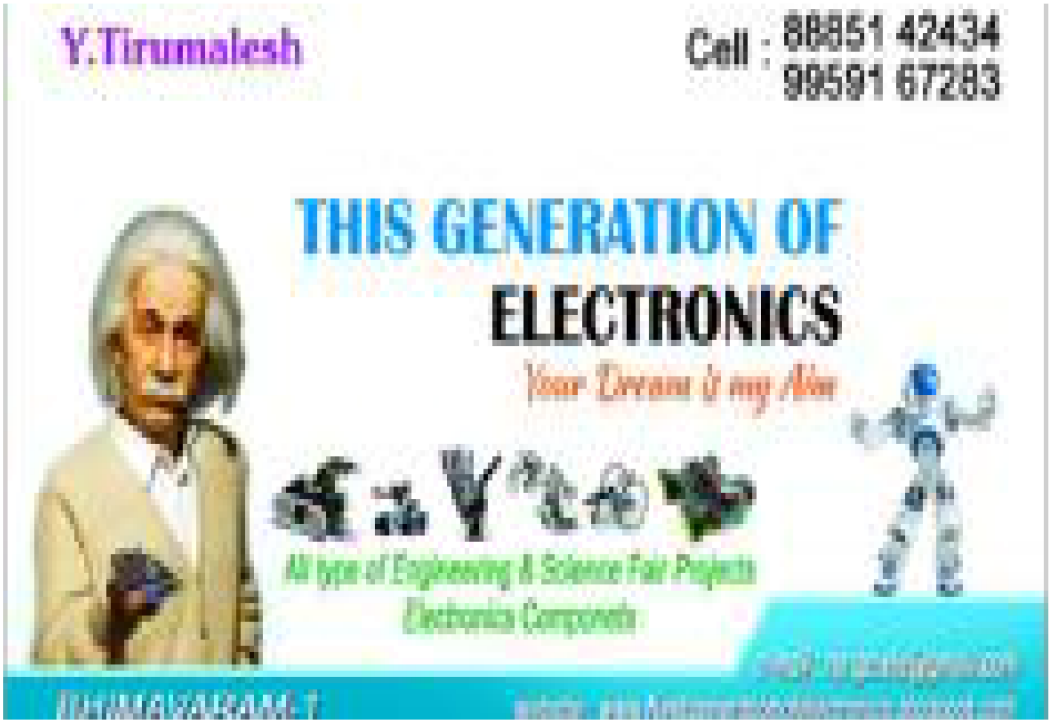
B.Sai Srinivas

Hybrid vehicles are the vehicles which can run on two power sources, i.e. simultaneously empowered with both engine and motor .Any mechanical device like engine cannot be 100% efficient because of several losses. But, if we take reasonable measures, we could decrease these losses. In this context, when our vehicle runs on engine, it obtains some mechanical energy which is stored by motor acting as generator in batteries provided. This stored energy runs the motor which powers the vehicle to run scope for engineers fossil fuels reserves being limited will soon get exhausted on one day or the other. From that day onwards solar energy is the major energy is the major thing which comes into our mind for replacement. Human cannot adapt to this change quickly. In this context, our hybrid vehicle concept raised.

LIFI TECHNOLOGY

L. Seshu Ganesh

Li-Fi stands for Light-Fidelity. Li-Fi technology, proposed by the German physicistHaraldHaas, provides transmission of data through illumination by sending data through an LED light bulb that varies in intensity faster than the human eye can follow. This paper focuses on developing a LiFibasedandanalyzesitsperformancewithrespecttoexisting technology. Wi-Fi is great for general wireless coveragewithin buildings, whereas Li-Fi is ideal for high density wireless data coverage in confined area and for relieving radio interference issues. Li-Fi provides better bandwidth, efficiency, availability and security than Wi-Fi and has already achieved blisteringly high speed in the lab. By leveraging the low-cost nature of LEDs and lighting units there are many opportunities to exploit this medium, from public internet access through streetlamps to auto-piloted cars that communicate through their headlights. Haas envisions a future where data for laptops, smartphones, and tablets will be transmitted through the light in room.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All type of Engineering & Science Fair Projects
Electronics Components

A FUTURE OF HUMANOID ROBOT

Abhishek Kumar

ASIMO is a humanoid robot created by the car company (Honda). It is 130 centimetres tall (4 feet 3 inches) and it weighs 54 kilograms. ASIMO looks like a small astronaut. It can stand walk run and climb steps on two feet like a human. ASIMO was created at Honda's Research & Development *Wako Fundamental Technical Research Centre* in Japan. It is the current model in a line of eleven that began in 1986. The Honda Motor Company developed ASIMO, which stands for **Advanced Step in Innovative Mobility**, and is the most advanced humanoid robot in the world. According to the ASIMO Web site, ASIMO is the first humanoid robot in the world that can **walk independently** and **climb stairs**

ENGINEERING MATERIALS AND HEAT TREATMENT PROCESS

CH. RAVI SHANKAR **G.RADHA KRISHNA**

The presentation of this article gives broad idea about Engineering Materials and also enlightens the necessity of heat treatment processes for steel. Now a day to meet the industrial requirements, strength is inevitable. This also helps to give an outlook about why measuring instruments are hardened and to give the applications of Engineering Materials .We found that ,after heat treatment process done on an object, the internal stresses are relieved, machinability is improved, tensile strength improved. Moreover the toughness of materials by tempering

FLEXURAL CREEP STUDIES ON NATURAL COMPOSITES

A.S.S.D.SAI KUMAR **T.MOUNICA**

Work has been carried out on natural composites with pure Banana and pure Pineapple fibers in epoxy matrix. Experiments are conducted in order to estimate the ―Flexural Creep‖ behavior of natural composites. All the samples are tested at a constant load of 5kgs.The deflections obtained during regular time intervals are reported. For comparison purpose Glass fibered composites (Artificial) are also tested. Results show that the pure Pineapple composites exhibit poor results as compared to pure Banana composites.

FREEZE DRYING

CH.MOUNICA **CH.SUNANDA**

We all know that food is a basic need for our living and now a day we often hear and observe famine all around the world. The word famine in the above sentence means low production of hygienically produced food and vitamin foods. We all know that it is useful to build and maintain our body and provide them useful vitamin and carbohydrates, etc.

ROBOTICS

K.HARSHA VARDHAN

. A HUMANOID ROBOT is a robot with its shape built to resemble that of the human body. A humanoid design might be for functional purposes, such as the study of bipedal locomotion, or for other purposes.

Actually humanoid robots are especially useful for many purposes as many as possible conditions like man cannot go deeper the earth or water in such conditions ―robots‖ will be useful.

BASIC AERODYNAMICS AND THE THEORY OF FLIGHT

S.PAVAN KUMAR

Aerodynamics is the branch of dynamics concerned with studying the motion of air, particularly when it interacts with the moving object like an aircraft. It mainly deals with the axes of movement air foil design, angle of attack, angle of incidence, aspect ratio, stability, control system of flight and it mainly works on the relation of newton‘s laws and Bernoulli‘s principle with the theory of flight

The forces that affect the flight of an aero plane are namely trust, drag, weight and lift. The aerodynamic force mainly depends on relative wind acting on the aero plane produces a certain amount of force which is called the total dynamic force.

NANO ROBOTICS IN HEART SURGERY

N.V.V.S.K. Ratnamala **P.D.B. Madhuri**

In future NANO robotics in heart surgery places a main role. It produces our own DNA artificially and it uses for no need of open surgery facy deposition on the walls of blood vessels and leads to block the blood flow. It mainly constructed with various Nano mechanical devices, molecular sorting rotors, propeller, fins and sensors. This process mainly uses to locate a blood.

ROBOTIC SOLAR-PANEL SUN TRACKING TECHNOLOGY

D.SAISREE

Robots are controlling everything. Now Robotic Solar-Panel Sun Tracking project is about the tracking and controlling the solar panels using travelling robot technology. Solar Robots help to increase the efficiency of the solar power system. For a photovoltaic solar panel, following the sun‘s path across the sky raises efficiency by 30-50%. This robotic sun tracker is the latest advancement to the existing dual-axis solar tracking technology that use a costly DC motor with each of the solar panel.

BIOMECHATRONIC HAND

GORLE SIRISHA **VEMULA SNEHA SAI**

This paper describes the design and fabrication of a novel prosthetic hand based on bio mechatronic and cybernetic approach .The development of an upper limb prosthesis that can be felt as a part of the body by the amputee and that can substitute the amputated limb by closely replicating its sensory motor capabilities, is far to become reality. The prosthetic devices such as multi-functional hand designs are far from providing the manipulation capabilities of the human hand. The way to overcome all these problems is to develop a cybernetic prosthesis following a bio mechatronic approach. The main requirements to be considered since the very beginning of the prosthetic hand design are cosmetics, controllability, noiselessness, lightness and low energy consumption. The approach of fulfilling the above requirements by implementing an

integrated design is called bio mechatronic design. The bio mechatronic hand will be equipped with actuator systems to provide a tripod grasping. They are two identical finger actuator systems and one thumb actuator systems .This work has been supported by a research project entitled ‖Design and development of innovative components for sensorized prosthetic systems‖ currently ongoing at the ‖Applied Research Centre On Rehabilitation Engineering‖.

UNDERWATER WELDING

K. S. L.SOUJANYA **G. THANMAI**

The fact that electric arc could operate was known for over a 100 years. The first ever underwater welding was carried out by British Admiralty –Dockyard for sealing leaking ship rivets below the water line. Underwater welding is an important tool for underwater fabrication works.

In recent years the number of offshore structures including oil drilling rigs, pipelines, platforms are being installed significantly. Some of these structures will experience failures of its elements during normal usage and during unpredicted occurrences like storms, collisions. Any repair method will require the use of underwater welding. The power source should be a direct current machine rated at 300 or 400 amperes. Motor generator welding machines are most often used for underwater welding in the wet.

ANTI-LOCK BREAKING

K.SHIVA KUMAR

Anti-lock breaking system is an automobile safety system that allows the wheels on a motor vehicle to maintain tractive contact with the road surface The anti-lock braking system is now a days a part of almost every vehicle. This system increases safety of the people sitting in the vehicle at the moment of stopping on a slippery or unstable road surface It is an automated system that uses the principles of threshold braking and cadence breaking. It does this much faster rate and with better control than a driver could manage. Since initial wide spread use in

production of cars,anti-locking breaking system have been improved considerably. recent version not only prevent wheel lock under breaking, but also electronically control the front-to-rear brake bias this function depending on its specific capabilities and implementation, is known as electronic stability control. The anti-lock brake controller is also known as the CAB (Controller Anti-lock Brake).

AIR BAGS

SREERAM JAHNAVI **VUTA HARSHITHA**

Air bags serve in a main purpose which is saving the driver‘s life. They are generated immediately when the vehicle meets an accident. This paper deals about their working and making.

SIX STROKE ENGINE

G.AJAY KUMAR **G.RAMESH CHOWDRY**

A six stroke engine is a type of IC Engine based on 4-stroke engine but with an additional complexity intended to make it more affective and reduce emissions. Two types of six stroke engines have been developed since 1890.

COMPRESSED AIR VEHICLE

Bh. SAI PRASANTH **B.S.V.S.S.VIJAY**

One cannot accurately claim that compressed air as energy and locomotion vector is recent technology. At the end of the 19th century, the first approximations to what could one day become a compressed air driven vehicle already existed, with the arrival of the first pneumatic locomotives.

We know that world is facing fuel crisis now. All kinds of conventional fuel sources of fuel are on the verge of exhaustion. Gasoline which has been the main source of fuel for the history of cars is becoming more and more expensive and impractical. These factors are leading car manufacturers to develop car fuelled by alternative energy.

VALVOTRONIC ENGINE TECHNOLOGY

K.PRUDVIRAJ **Y.SURESH**

BMW VALVETRONIC technology is able to maintain the most important measures to reduce emissions. The further optimized charge movement created by VALVETRONIC stabilizes the combustion in the catalyst heating mode with extremely retarded ignition timing. When the engine is warm the high residual gas tolerance ensures very low Engine-Out NOx emissions and at the same time a low level of hydrocarbons. The atomization of fuel droplets due to high flow velocity in the valve gap area leads to improved mixture formation and reduced wall wetting. Engine-Out HC emissions in a cold engine are therefore reduced. Combined, the emission measures achieve robust and efficient emission control. In combination with additional after-treatment like secondary air system and catalysts using high cell density VALVETRONIC engines form an excellent base for SULEV emission regulations without neglecting the typical BMW claim of efficient dynamics.

DRIVE BY WIRE

MD.FAIROJ **A.APARNA KUMAR**

Many has changed in the automobile sector in the last decade that had added tremendous comfort and ease to the driver. With the growth of electronics day by day much more changes can be done in how the mechanisms inside an automobile can be triggered and activated. Conventional cars mainly use hydraulic and mechanical technology to conduct basic vehicle operations, and although the systems are powerful, they can be overly complex, inefficient and

conducive to wear and tear over the years. Though proven effective, these need constant maintenance that actually make the driver less cozy. With the integration of electronic circuits and modules the main mechanisms such as throttle, braking and steering can be brought up very effectively and with less further maintenance. Technology called as ―X by wire‖ or ―Drive by wire‖ enables us to replace the existing mechanical linkages with electronic elements such as sensors.

EXHAUST GAS RECIRCULATION SYSTEM

Y.RAMESH **G.NAGENDRA.**

In internal combustion engines, **exhaust gas recirculation** (**EGR**) is a nitrogen oxide ([[NO_x]]) emissions reduction technique used in petrol/gasoline and diesel engines. EGR works by recirculating a portion of an engine's exhaust gas back to the engine cylinders. Exhaust gas is routed back into the combustion chamber because the exhausted air is much hotter than the intake air. EGR works by diluting the N2 and providing gases inert to combustion (CO2 primarily) to act as an absorbent of combustion heat to reduce peak in cylinder temperatures. NOx is produced in a narrow band of high cylinder temperatures and pressures

GASOLINE DIRECT INJECTION (GDI)

Maddisetti. Durga Prasad **Kotinadhuni.Bharath Kumar**

This paper mainly focuses on the advantages and drawbacks in employing gasoline direct injection method in ic engines and how it satisfies our needs

In formal IC engines, the carburetors and single-point fuel injection systems did their relatively imprecise air and fuel mixing in or even before the intake manifold, adding about the right amount of fuel for entire bank of cylinders? In change from carburetion to SPFI to MPFI,

the point at which fuel is added to the intake charge has moved from before the throttle to the intake manifold and onward to the individual intake runners -- closer and closer to the combustion chambers.MPFI (or just MPI) systems can be sequential, in which injection is timed to coincide with each cylinder's intake stroke; batched, in which fuel is injected to the cylinders in groups, without precise synchronization to any particular cylinder's intake stroke; or simultaneous, in which fuel is injected at the same time to all the cylinders.

HONDA R18 IVTEC ENGINE

K.SAI TEJA **M.SYAM**

Honda R18 series engine is operated on SOHC - IVTEC principle. It is specially designed for getting more efficiency in both low speeds and higher speeds.It overcomes the problems in the present engines. VTEC will never open on the R18A. Thus it is a completely different idea from the VTEC implementations of old where VTEC will always open after a certain rpm, regardless of the driving conditions. This is also the reason why Honda feels it is justified to call this new implementation an ***i***-VTEC implementation.

LASER IGNITION SYSTEM

SHANMUKHA SAI ADDAGARLA

Economic as well as environmental constraints demand a further reduction in the fuel consumption and the exhaust emissions of motor vehicles. At the moment, direct Injected fuel engines show the highest potential in reducing fuel consumption and exhaust emissions. Unfortunately, conventional spark plug ignition shows a major disadvantage with modern spray-guided combustion processes since the ignition location cannot be chosen optimally.

NEXT GENERATION IS 2 – STORKE ENGINES WIHTOUT SPARK PLUGS!

HARIKA KANDUKURI

Are two stroke motorbikes poised for a comeback? With new development, they can compete with four stroke in emission cleanliness, full economy & ride ability while retaining power, size & weight advantages. Now days this is the age of four-stroke engme. Because of its various advantageous like mileage, power and one of the greatest advantage is that it's emission. And therefore it is certify that it is cleanliness and made very low pollution. Because of this the two stroke engine is left out from the market.