





**S.R.K.R. ENGINEERING COLLEGE(AUTONOMOUS)**

DEPARTMENT OF MECHANICAL ENGINEERING

RECOGNISED BY AICTE, AFFILIATED TO JNTUK, NAAC'A GRADE

RECOGNISED AS SCIENTIFIC & INDUSTRIAL RESEARCH ORGANISATION

81<sup>ST</sup> ALL INDIA RANK BY NIRF, MHRD GOVT OF INDIA



**SANKETA  
2K19**

SOVEREIGN SINCE DECADE

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***STUDENT***  
***TECHNICAL***  
***MAGAZINE***

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## **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'19

## A National Level Technical Symposium

29<sup>th</sup> - 30<sup>th</sup> January, 2019



## DEPARTMENT OF MECHANICAL ENGINEERING

**S. R. K. R. ENGINEERING COLLEGE (AUTONOMOUS)**

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NA

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## **SANKETA'19**



**SRI. S. PRASADA RAJU,**

**Chief Patron, SANKETA'19,**

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 '19 on 29<sup>th</sup> and 30<sup>th</sup> of January, 2019. 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'19**



**SRI. S. V. RANGA RAJU,**  
**Chief Patron, SANKETA'19,**  
Secretary cum Correspondent,  
S. R. K. R. Engineering College.

### **MESSAGE**

*It is a great privilege to know that SANKETA'19 is being organized by the Department of Mechanical Engineering on 29<sup>th</sup> and 30<sup>th</sup> January, 2019. 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.*

**SRI. S. V. RANGA RAJU.**

## **SANKETA'19**



**S.R.K. NISHANTH VARMA,**

**Chief Patron, SANKETA'19,**

**C.E.O,**

**S. R. K. R. E. C. Management Association.**

### **MESSAGE**

*I am greatly delighted to know that Mechanical Department is conducting SANKETA'19, a National Level Technical Symposium. This is a great event which is extremely beneficial for students to build up their career. The aim of this symposium is to provide fruitful interaction and emerging technologies in Mechanical Engineering. I wish you a great success in your event.*

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

**S.R.K. NISHANTH VARMA.**

## **SANKETA'19**



**Dr.G.P.SARADHI VARMA**

**Patron, SANKETA'19,**

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'19, a National Level Technical Symposium on 29<sup>th</sup> and 30<sup>th</sup> January, 2019 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 endeavour*

**Dr. G.P.SARADHI VARMA.**

## **SANKETA'19**



**Dr. K. Brahma Raju,**  
**President, SANKETA'19,**  
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'19**



**Dr.K.SURESH BABU,**  
**Convener, SANKETA'19,**  
Professor,  
Department of Mechanical Engineering,  
S.R.K.R. Engineering College

### **MESSAGE**

*I am glad to be a part of SANKETA'19, a National Level Technical Symposium which is going to be organized by Mechanical Engineering Department on 29<sup>th</sup> and 30<sup>th</sup> of January 2019. 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.*

**Dr.K.SURESH BABU.**

# OUR SPONSORS



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### Technical and Eco Papers

1	KUNDA CHAITANYA	AGRICULTURE ROBOT	SRKREC
2	PAVAN KUMAR TEELLA	FIRE FIGHTER ROBOT	SRKREC
3	PENMETS SA SIVA	RF CONTROLLED ROBOTIC VEHICLE	PRAGATHI ENGINEERING COLLEGE
4	KUNALA AJAY	RF CONTROLLED ROBOTIC VEHICLE WITH METAL DETECTION PROJECT	SRKREC
5	BHARATH GADI RAJU	OBSTACLE AVOIDER ROBOTIC VEHICLE	DNR COLLEGE OF ENGINEERING AND TECHNOLOGY
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***WITH BEST COMPLIMENTS FROM***



*“Friendships for life time”*

**SRKREC  
ALUMNI ASSOCIATION**

## **AGRICULTURE ROBOT**

**KUNDA CHAITANYA**

This paper strives to develop a robot capable of performing operations like automatic ploughing, seed dispensing, fruit picking and pesticide spraying. It also provides manual control when required and keeps tabs on the humidity with the help of humidity sensors. The main component here is the AVR at mega microcontroller that supervises the entire process. Initially the robot tills the entire field and proceeds to ploughing, simultaneously dispensing seeds side by side. The device used for navigation is an ultrasonic sensor which continuously sends data to the microcontroller. On the field the robot operates on automated mode, but outside the field is strictly operated in manual mode. For manual control the robot uses the Bluetooth pairing app as control device and helps in the navigation of the robot outside the field. The field is fitted with humidity sensors placed at various spots that continuously monitor the environment for humidity levels. It checks these levels with the set point for humidity and alerts the farmer. The alerting mechanism is GSM module that sends a text message to the farmer informing him about the breach in set point. The farmer then responds via SMS to either switch on the water sprinklers or ignore the alert. The water sprinklers, if on, bring down the humidity level thus providing an ideal growing environment to crop. The concept of fruit picking and pesticide spraying is described under the process domain. Farmers today spend a lot of money on machines that help them decrease labor and increase yield of crops but the profit and efficiency are very less. Hence automation is the ideal solution to overcome all the shortcomings by creating machines that perform one operations and automating it to increase yield on a large scale.

## **FIRE FIGHTER ROBOT**

**PAVAN KUMAR TEELLA**

Fire fighting is an important job but it is very dangerous occupation. Due to that, Robots are designed to find a fire, before it rages out of control. It could be used to work with fire fighters to reduce the risk of injury to victims. This paper presents the Fire Fighting Robot competition that purposely to simulate the real-world operation of an autonomous robot to rescue 10 victims (table tennis balls) and stop 5 fires (emergency candles) in a house within three minutes. The robot development is consisting of three elements which is the hardware, electronic, and programming. The robot has three DC motor, two for driving system and another single DC motor for ball suction subsystem and the fire blowing subsystem. Various sensors are also interfaced with PIC16F877A as a feedback to the robot such as photoelectric sensors, fiber optic sensor and RGB color sensors.

LCD display also gives the graphical information of the robot status to the user. For the programming part, C language is used to determine the robot action gain from the sensors input.

The main purpose of the project is to control a robotic vehicle. This can be achieved by using RF technology for remote operation. It uses 8051 series of microcontroller to achieve its desired operation. This system uses push buttons at the transmitting end. With the help of these push buttons, the receiver is able to receive commands. These commands that are sent are used to control the movement of the robot which gives instructions for either to move the robot forward, backward, left or right etc. The movement of the vehicle is done with the help of two motors that are interfaced to the microcontroller. The RF transmitter acts as a RF remote control. This RF remote control has the advantage of adequate range that is up to 200 meters if provided with proper antenna. The

receiver is responsible for decoding and feeding it to some other microcontroller to drive DC motors via Motor driver IC to perform the necessary work.

Further enhancement can be done by integrating DTMF technology with the help of which the robot can be controlled using cell phone as it provides a long communication range as compared to the RF technology

## **RF CONTROLLED ROBOTIC VEHICLE METAL DETECTION**

**KUNALA AJAY**

Our project proposes a Metal detection robotic vehicle operated using Rf remote control wirelessly. The project demonstrates real life robotic vehicles used to detect land mines or other metal based objects on its path.

The vehicle is fitted with a metal detection system that senses metals and then alarms the user about it through a buzzing sound of land mine possibility. The system works in conjunction with an 8051 series microcontroller to achieve this operation.

The push buttons are used to send commands to move the vehicle forward, backward, left and right. Two motors at receiving end operate the vehicle as per the commands received. As soon as a command is sent it gets transmitted through rf transmitter. At receiving end an RF receiver reads the command and passes it to an 8051 microcontroller for processing. The microcontroller then operates the motors to move the vehicle through a motor driver IC.

The metal detection system attached to the system detects any metal underneath it. On detection it automatically sends on a small buzzing alarm to notify user about it. Thus the metal detection system coupled with a robotic vehicle allows for operating the robotic vehicle on a 200 meter radius remotely through RF technology

## **OBSTACLE AVOIDER ROBOTIC VEHICLE**

**BHARATH GADI RAJU**

Our proposed project puts forward an obstacle avoider robotic vehicle that uses ultrasonic sensors for this purpose. The system uses an 8051 family microprocessor to achieve this functionality.

The robotic vehicle is designed to first track and avoid any kind of obstacles that comes it's way. The vehicle achieves this smart functionality with the help of ultrasonic sensors coupled with an 8051 microprocessor and motors. The entire system combined gives the vehicle an intelligent object detection and obstacle avoidance scheme.

This system allows the vehicle to guide itself in case it encounters any obstacle. The obstacle detection is done using the ultrasonic sensor. This is detected and a signal is passed on to the 8051 microcontroller.

On receiving the signal it guides the vehicle in another direction by actuating the motors through the motor driver IC

**WITH BEST COMPLIMENTS FROM**



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## **VOICE CONTROLLED ROBOTIC VEHICLE**

**VENKATESH MARPINA**

This project Voice Controlled Robotic Vehicle helps to control robot through voice commands received via android application. The integration of control unit with Bluetooth device is done to capture and read the voice commands. The robotic vehicle then operates as per the command received via android application. For this 8051 microcontroller is integrated in the system which makes it possible to operate the vehicle via android application. The controlling device may be any android based Smartphone/tab etc., having an android OS. The android controlling system provides a good interactive GUI that makes it easy for the user to control the vehicle. The transmitter uses an android application required for transmitting the data. The receiver end reads these commands and interprets them into controlling the robotic vehicle. The android device sends commands to move the vehicle in forward, backward, right and left directions. After receiving the commands, the microcontroller then operates the motors in order to move the vehicle in four directions. The communication between android device and receiver is sent as serial communication data. The microcontroller program is designed to move the motor through a motor driver IC as per the commands sent by android device

## **COIN BASED WATER DISPENSER SYSTEM**

**CHELAMURI MURALI**

Here we put forward a fully automated coin based water dispenser system using microcontroller and sensor. The system is capable of fully automated water/cola dispensing using motors and sensors. The system also senses if glass is placed at the counter to avoid water spoilage if there is no glass placed at the counter panel. The system uses IR sensors to detect presence of glass and then the sensors send a signal to the microcontroller. The microcontroller now processes the information sent by the sensors to determine if glass is present. The system also has a coin detector that is used to sense particular coins and send information to microcontroller about valid coins. On detecting a valid coin the system now sends a signal to the controller who checks if glass is present and then it starts the motor to pour water in glass using motor as long the glass is present. If glass is removed during the process, system stops the water supply until glass is encountered. Thus we here put forward a smart water dispenser system with water saving feature.

## **DRILL PRESS**

**SALADI SESA SAI**

Here we put forward a fully automated coin based water dispenser system using microcontroller and sensor. The system is capable of fully automated water/cola dispensing using motors and sensors. The system also senses if glass is placed at the counter to avoid water spoilage if there is no glass placed at the counter panel. The system uses IR sensors to detect presence of glass and then the sensors send a signal to the microcontroller. The microcontroller now processes the information sent by the sensors to determine if glass is present. The system also has a coin detector that is used to sense particular coins and send information to microcontroller about valid coins. On detecting a valid coin the system now sends a signal to the controller who checks if glass is present and then it starts the motor to pour water in glass using motor as long the glass is present. If glass is removed during the process, system stops the water supply until glass is encountered. Thus we here put forward a smart water dispenser system with water saving feature.

## **BOX TRANSPORT MECHANISM**

**NIMMALA JITHENDRA KUMAR**

Box Transfer Mechanism relates to improvements in transfer and conveying devices. It relates particularly to devices for transferring set-up cardboard boxes from a box folding or forming machine to the operator of a semi-automatic box. In this Project, we will make the box transferring mechanism by Four Bar Kinematic Chain Mechanism. This system transfers and includes shifting of boxes by using simple and basic mechanical principles. The main advantage is that it can transfer box with much more efficiency than the conveyer belt system in all aspects. Unlike conveyer belt system it only focuses on shifting of boxes. Also we make 7 or 8 transfer boxes in it. We can reduce the human load and increase the work efficiency by implementing this system.

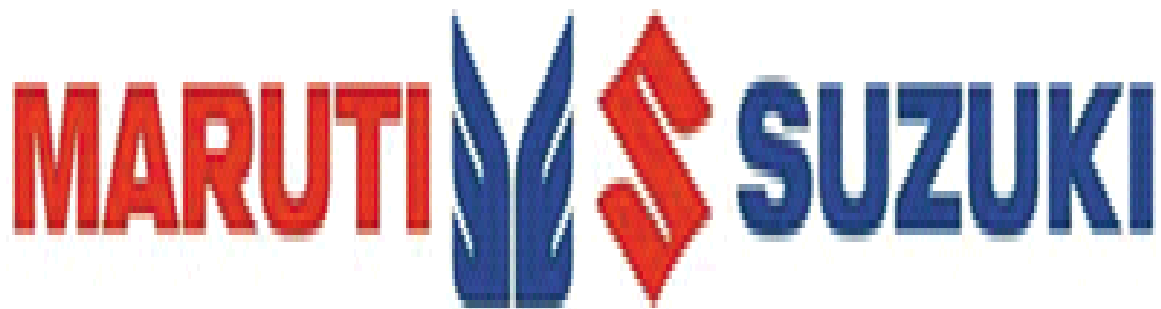
**SOLENOID ENGINE****PAVAN GANABOINA**

Vehicles are the electric motor. Electric motor works on principles of the electromagnetic induction by converting electrical energy to kinetic energy. This energy conversion is the main purpose of an electric motor and this actuator are highly popularized in most EV's designs. So a solenoid will be used to replace the electric motor as a prime mover. For this a prototype of a solenoid is designed, built, and tested. The solenoid will be used as kicking device. As earlier studies have investigated a solenoid as shooting mechanism. In one study the solenoid is investigated as most suitable kicking device. The other study designed and optimized a solenoid. In this study a prototype solenoid is designed and tested.

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## AIR POWERED CAR

NARASIMHA RAO NARAKULA

Have you been to the gas station this week? Considering that we live in a very mobile society, it's probably safe to assume that you have. While pumping gas, you've undoubtedly noticed how much the price of gas has soared in recent years. Gasoline which has been the main source of fuel for the history of cars, is becoming more and more expensive and impractical (especially from an environmental standpoint).

These factors are leading car manufacturers to develop cars fueled by alternative energies. Two hybrid cars took to the road in 2000, and in three or four years fuel-cell-powered cars will roll onto the world's highways.

While gasoline prices in the United States have not yet reached their highest point (\$2.66/gallon in 1980), they have climbed steeply in the past two years. In 1999, prices rose by 30 percent, and from December 1999 to October 2000, prices rose an additional 20 percent, according to the U.S. Bureau of Labor Statistics. In Europe, prices are even higher, costing more than \$4 in countries like England and the Netherlands. But cost is not the only problem with using gasoline as our primary fuel. It is also damaging to the environment, and since it is not a renewable resource, it will eventually run out. One possible alternative is the air-powered car.

Air powered cars runs on compressed air instead of gasoline. This car is powered by a two cylinder compressed engine. This engine can run either on compressed air alone or act as an IC engine. Compressed air is stored in glass or fiber tanks at a pressure of 4351 psi.

Within the next two years, you could see the first air-powered vehicle motoring through your town. Most likely, it will be the evolution car that is being built by Zero Pollution Motors. The cars have generated a lot of interest in recent years, and the Mexican government has already signed a deal to buy 40,000 evolutions to replace gasoline- and diesel-powered taxis in the heavily polluted Mexico City.

## **POWER SEED SPARAYER MACHINE**

**MANAPALLI VENKAT**

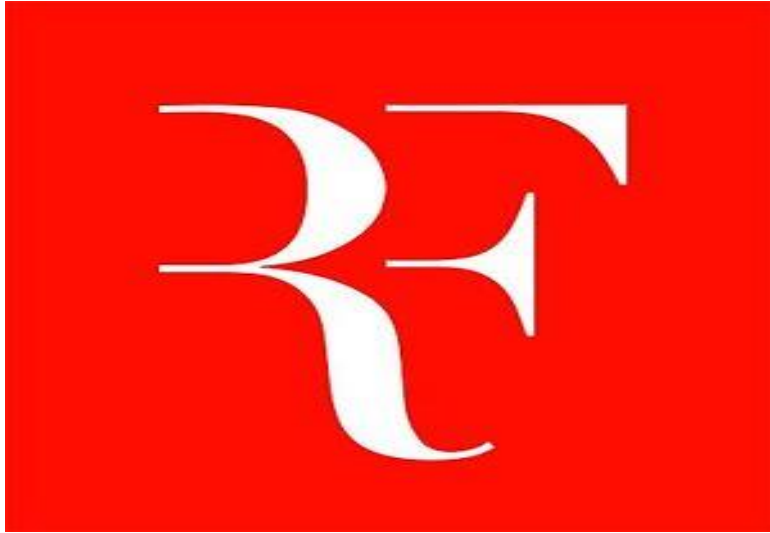
In today's era all sectors are moving towards the rapid growth using many advanced technologies. Of all these sectors, agriculture is also one of them. In order to meet the increasing demand of food, farmers have to implement advanced techniques so that the soil texture is not affected and the overall food production is increased. Hence, in this project we aim at designing and fabricating a solar operated seed sprayer machine. Seed sowing process is usually carried out by humans using manual power. In this solar seed sprayer machine project, seed in a hopper gets sprayed by means of fan or blower directly to the land without any manual effort. Using this process the seeds are fed in the land during the time of plough. The main advantage of using this technique is that, it reduces the time of seed to land and reduces human efforts. In this solar agriculture sprayer solar panel is used as power source which is used to run the fan, and thus does not require any additional power supply. This innovative mechanical project of seed sowing equipment can save more time for sowing process and also it reduces a lot of labor cost. This solar agro sprayer project is very helpful for small scale farmers.

## **POWER GENERATOR PULLEY ROWING MACHINE**

**KOPPARTHI CHARAN**

We spend a lot of effort pulling weights in the gym. But what if our efforts could generate energy along with building our muscles. We here use a pulley rowing machine to generate electricity using integrating a generator with it. The rowing machine makes use of an energy harvester system which is responsive to movement of a motion control arrangement of an exercise machine for converting kinetic energy of the exercise equipment into electrical power. The here presented system aims to delivers an enhanced exercise equipment for strength training using one or more rotating parts in machine to independently power an electrical system that is part of the equipment. An objective of the this system is to provide an exercise rowing machine with power generation, which combines exercises with power generation, and makes full use of human kinetic energy while providing resistance to gain muscles.

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## **POWER GENERATION USING ELECTROMAGNETIC SUSPENSION**

**CHALLA RAJESH**

The power generator electromagnetic suspension system is a system that converts vehicle bump generated linear motion & vibration, into electricity to be used in battery charging. General vehicle shock absorbers are used to simply absorb this energy without converting it to electricity. So here we put forth a way to use this free energy and store it for further needs such as vehicle lights, cooling, indicator lights etc. To achieve this we here use the principles of electromagnetism in order to generate electricity from this motion. Our shock absorber is made up of a metal shaft, spring, magnet, coils, base with screws and joints. It uses a coil wound around in particular turning arrangement over the inner beam of the part. We use cylindrical supports in order to minimize friction and ensure smooth generation. The head of the absorber consists of magnets attached to outer core which are aligned with inner core to ensure smooth motion while ensuring efficient generation. This arrangement is fitted with springs in a precise manner so as to achieve the desired motion and magnet coil overlapping which allows for generation of electricity through electromagnetism principle. Thus our system puts forward a smart power generation system using electromagnetic suspension system.

## **FOOTSTEP POWER GENERATOR**

**ACHANTA SAI TEJA**

The system generates voltage using footstep force. The system serves as a medium to generate electricity using non conventional sources (force) and /store/use it. The project is designed to be useful at public places like railway stations where a lot of people keep walking through all day. At such places these systems are to be placed at any entry points where people travel through entrance or exits and they have to step on this device to get through. These devices may then generate a voltage on every footstep and when mounted in series they will produce a sizeable amount of electricity. For this purpose we here use piezoelectric sensors that use piezoelectric effect in order to measure acceleration, force, and pressure bits conversion into electric signals. We here attach a voltmeter in order to measure its output and small led lights for demonstration.

## **360 DEGREE ROTATING VEHICLE**

**SHAIK MOHAMMED ALI**

This project is about 360-degree rotating vehicle. This vehicle moves in all directions and this design provides better comfort and also saves the time, most of the people uses this vehicle to carry goods, emergency patients etc. The normal wheel vehicles face lot of problems like parking, U turn and much more which consumes more time. So, we have designed a 360-degree wheel rotating vehicle to reduce and eliminate problems in the industry as well as common life of people. The vehicle can take a turn without moving the vehicle. No extra space is required to turn the vehicle. In this system, each of the 4 wheels has given drive with DC motors, so it can rotate 360 degree. 360-degree rotating wheel is controlled by RF remote. Consequently, we can utilize this 360-degree rotating vehicle from various perspectives like to transport things overwhelming bags and furthermore in vehicles, which will help in decreasing rush hour gridlock and spare time.

***WITH BEST COMPLIMENTS FROM***



**Narasimhapuram, Bhimavaram-534 206**

## **ELECTROMAGNETIC BRAKING SYSTEM**

**GUNJA DURGA KUMAR**

Electromagnetic braking means applying brakes using electronic and magnetic power. Here we use the principle of electromagnetism to achieve friction less braking. This tends to increase the life span and reliability of brakes since no friction leads to less wearing out of brakes. Also it requires less maintenance and oiling. This is an upcoming technological replacement for traditional braking systems. The main purpose behind the proposed use of these brakes in vehicles is that it is frictionless. This leads to a sizably less maintenance cost due to no friction and no oiling. Also traditional braking systems are prone to slipping while this one is guaranteed to apply brakes to the vehicle. So without friction or need of lubrication this technology is a preferred replacement for traditional braking. Also it is quite smaller in size compared to the traditional braking systems.

To make electromagnetic brakes work, a magnetic flux when passed in a direction perpendicular to the rotating direction of the wheel, we see eddy current flowing in a direction opposite to the rotation of the wheel. This creates an opposing force to the wheel rotation and in turn slows down the wheel. Thus we achieve electromagnetic braking as a better braking system for future automobiles.

## **ANDROID CONTROLLED ROBOTIC ARM**

**TAMMU DAYA KUMAR**

This system allows controlling a robotic arm by an android device. The android device is used to send Bluetooth commands. These commands are then sent to the Bluetooth receiver which is in the receiver circuit. This Bluetooth receiver is interfaced to the 8051 microcontroller which is processed by it. The 8051 microcontroller controls the motor to move the robotic arm as per the commands received. Thus this system uses an android application to move the robotic arm in upward or downward direction, or can send commands like grip open or close. Thus this Android controlled robotic arm project can be used to pick any object, move it, and place it anywhere as per the need. The receiver circuit instructs the motors to move the arm as per the commands received by the android application.

This system uses RF remote controlled vehicle which has a camera that will be needed for spying purposes. The system proves to be very beneficial in places where humans cannot be sent for spying purposes such as military places as there can be some risk involved. The vehicle in this system has a night vision enabled camera. This vehicle can be operated wirelessly using RF remote. Here the camera send signals to the receiver used and the place that will be captured by the camera can be displayed remotely on a PC and can be recorded for further reference. In this system we use 8051 microcontroller in order to control the system which will be interfaced to the receiver. In this both the RF remote and the vehicle is battery powered. As the user sends commands through RF remote using the push buttons on the remote, these commands are then sent to the receiver. The receiver then sends these commands to microcontroller which processes these commands which determines in which direction the vehicle moves. The RF remote has 4 push buttons for forward, backward, left and right which will make the vehicle move in the direction specified.


***WITH BEST COMPLIMENTS FROM***



Jakkaram,J.P.Road,Bhimavaram





## **V.V.S Enterprises, Bhimavaram**

### **CONTROLLED SPY ROBOT WITH NIGHT VISION CAMERA**

**GANTASALA MANOJ**

Our project aims to provide a robotic vehicle equipped with a wireless camera having night vision capability for remote monitoring/spying purposes. The night vision camera allows for transmitting real time night vision video even in dark environments. Whatever is recorded by the camera can be viewed in PC for reference.

This system is to be useful in war, terrorism and sensitive areas. It can also be used to operate in jungles and other environments humans cannot possibly enter during the night. The vehicle can be controlled remotely by an android device for easy operation. It uses android application commands to move in front, back and left right directions. The vehicle consists of receivers interfaced to an 8051 microcontroller. On receiving command from the receiver. The 8051 microcontroller now operates the movement motor through a driver IC.

The robotic vehicle can be easily operated from any android device. It provides a good user interface for handling the vehicle. The android device can operate the vehicle at a good Bluetooth communication range. The Bluetooth receiver at the vehicle is used to transmit control movement data from app to vehicle.

The night vision camera mounted on robot allows for efficient spying even in darkest areas using infrared lighting.

### **FLOOR DUST CLEANING MACHINE**

**NARAKULA LALIT**

Cleaning is the main basic need for all human beings and it is necessary for daily routine process. The conventional road and floor cleaning machine is most widely used in many applications such as example roads, railway stations, airports, hospitals, Bus stands, in multi buildings, colleges etc. also this machine uses human energy for its working operation. It is a user friendly as well as eco-friendly. In our project we are aimed to use easily available materials with low cost and it can be easily fabricated and easy to use and control. It is the better alternative for conventional machine. The manually operated eco-friendly road and floor cleaner can work very efficiently with respect to covering area, time and cost of road cleaning process compared with the existing machineries. Also it is economical to use.



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**About Our Team**

**RAJESH K**

- 8 Years of experience
- Studied and Worked in Europe (Germany / Italy / France)
- Overseas education specialist

**KRISHNA VATSAVAYI**

- 15 Years of experience
- Worked in USA and CANADA

**M.S.S SARMA (Mentor)**

- 30 Years of Overseas education consulting
- Career counselling specialist

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