Proceeding Book of

International Conference on Emerging Trends in Engineering and Technology

ICETET-2020

28th & 29th May 2020 Nashik

ICETET – 2020

INTERNATIONAL CONFERENCE ON EMERGING TRENDS IN ENGINEERING AND TECHNOLOGY

SIEM, Nashik

28th – 29th May, 2020

Organized by:

Department of Mechanical Engineering

Sandip Institute of Engineering and Management,Nashik

and

Institute For Engineering Research and Publication

Rudra Bhanu Satpathy.,

Chief Executive Officer,

Institute For Engineering Research and Publication.

On behalf of *Institute For Engineering Research and Publications (IFERP)* and in Association with Department of Mechanical Engineering Sandip Institute of Engineering and Management, Nashik. I am delighted to welcome all the delegates and participants around the globe to *Sandip Institute of Engineering and Management, Nashik* for the *"International Conference on Emerging Trends in Engineering and Technology (ICETET-2020)"* Which will take place from *28th – 29thMay '2020*

Transforming the importance of Engineering, the theme of this conference is *"International Conference on Emerging Trends in Engineering and Technology (ICETET-2020)"*

It will be a great pleasure to join with Engineers, Research Scholars, academicians and students all around the globe. You are invited to be stimulated and enriched by the latest in engineering research and development while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the reviewing committee, coordinator **(IFERP & SIEM)** and all the people involved for their efforts in organizing the event and successfully conducting the International Conference and wish all the delegates and participants a very pleasant stay at *Nashik.*

Sincerely,

RudraBhanuSatpathy

Dr. Sandip Kumar Jha
Chairman
Sandip Foundation's

I am pleased to welcome you to the International Conference on Emerging Trends in Engineering and Technology-2020 (ICETET-2020) organized by Department of Mechanical Engineering , Sandip Institute of Engineering and Management, Nashik in association with Institute For Engineering Research and Publication (IFERP), Chennai, to be held on 28th - 29th May, 2020.

The aim of any conference isn't just to talk about energetic and rising issues of a specific space yet in addition spread of the mindfulness among other educated people. Throughout the years, sensational upgrades have been made in the field of Engineering Technologies and applications. I trust ICETET-2020 will turn out to be without a doubt the most significant International conference committed to bring out most recent patterns in Engineering and Technology.

So as to give a remarkable specialized level to the introductions at the gathering, we have welcomed recognized specialists to take an interest in the Technical Program Committee. I hope ICETET-2020 will make you aware of state-of-the art systems and provide a platform to discuss various design issues and challenges

Dr. Sandip Kumar Jha

Prof. (Dr.) Dipak P. Patil
Principal,
Sandip Institute of Engineering & Management (SIEM)

On behalf of the Local Organizing Committee and the Department of Mechanical Engineering of SIEM, the hosting department and IFERP, it is my great pleasure to welcome you to International Conference on Emerging Trends in Engineering and Technology-2020 (ICETET-2020)to be held on 28th- 29th May, 2020 at Sandip Institute of Engineering and Management, Nashik in association with Institute For Engineering Research and Publication (IFERP), Chennai. The idea to host the ICETET-2020 in SIEM at Nashik is to bring together Researchers, Scientists, Engineers, Scholars and Students in the areas of Engineering.

The ICETET-2020 Conference will cultivate conversations and would like to move members from a wide cluster of topics to start Research and Development and joint efforts inside and across disciplines for the headway of Technology. I feel it is critical to repeat the need to make an interpretation of Engineering and Technology into information to help defeat cultural difficulties.

The different topical sessions will exhibit significant mechanical advances and feature their hugeness and difficulties in a universe of quick changes. I invite every one of you to go to the entire sessions and oral introductions and welcome you to associate with the meeting members.

The Local Organizing and Conference Committees will put forth any conceivable attempt to ensure that your support will be in fact fulfilling and a pleasurable encounter of our Nashik City.

Dr. Dipak P. Patil

Prof. (Dr.) A. S. Dube
H.O.D
Department of Mechanical Engineering, SIEM

It gives me immense pleasure to welcome all the students of Under-graduate and Post-graduate courses and Research streams to International Conference of Emerging Trends on Engineering and Technology (ICETET-2020). Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Accredited by the National Assessment & Accreditation Council. Mechanical Engineering Department, SIEM is nurturing self-reliant and self-dependent human being to cope with the challenging world of tomorrow. We impart education to empower youth to create a space in the society. Department of Mechanical Engineering, SIEM inculcates the highest values of service to the poor and marginalized in the society.

The harmonious mix of the legacy of knowledge and spiritual ambience of our Department inspire young minds to be empowered and morally upright. We enjoyed a reputation of excellence in academic scholarship and try to keep abreast of the fast moving developments in today's scenario. Beckoning new challenges and opportunities, we are marching forward to enhance the quality of this Institution of Excellence.

Keeping in see, the exchange of the hour of trans-mainland trade of ideas and philosophies in the ongoing years, we have been attempting to accord significance to high tech showing techniques and to situate our energies, assets and infrastructural offices to present courses which are the need of great importance. We understand the need to give both scholarly thoroughness and useful application to understudy learning.

I am proud to be part of an institution with a spectacle of fine blend of tradition and modernity.

Dr.A. S. Dube

ICETET -2020

International Conference on Emerging Trends in Engineering and Technology

28th – 29th May 2020 @ SIEM, Nashik

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CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

ICETET -2020

Proceeding Book of

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SIEM, Nashik

28th - 29th May, 2020

Abstract

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Nashik, 28ᵗʰ – 29ᵗʰMay 2020

A Numerical Study for Electricity Generation by applying potential head of waste water flowing down through vertical drainpipes of High Rise Building by Using systems of very small Turbines

A.G. Chaudhari, Assistant Professor, Guru Gobind Singh College of Engineering & Research Center, Nashik.

Dr. V. M. Natraj, Associate Professor at Guru Gobind Singh College of Engineering & Research Center, Nashik.

Abstract:--
       The demand on energy is continuously increasing. Small or large strategies either to save or generate energy are being continuously developed. This paper reports the numerical results to generate electricity by use of wastewater from high rise building while falling down through vertical drain-pipe. The three alternate arrangements have been arbitrarily selected for the study. Wastewater collected from bath rooms, basin and kitchen sink are collected in the storage tanks. These tanks may be located at selected floor level of building and connected by the pipe systems along-with pico (small) turbines, to generate power. The results of three different cases shows variations in electricity generation as the amount of the waste water varies with the quantity of waste water and potential head. The test results also revealed that there is an opportunity for electricity generation by utilizing waste water of High rise buildings and may be used as an alternative source for electricity generation.

Index Terms
  Energy, wastewater, high rise building, Electricity generation, Pico Turbine.

A Comparative Study of Various Key-point Detector-Descriptor Algorithms for Augmented Reality Applications

Dr. Jayshree R. Pansare, Department of Computer Engineering, Modern Education Society's College of Engineering, Pune.
Kanad Naleshwarkar, Department of Computer Engineering, Modern Education Society's College of Engineering, Pune.
Nitish Prajapati, Department of Computer Engineering, Modern Education Society's College of Engineering, Pune.
Aditya Muley, Department of Computer Engineering, Modern Education Society's College of Engineering, Pune.

Abstract:--
This study aims to compare various feature detector-descriptor algorithms. The algorithms compared are ORB, SIFT, SURF, BRISK, KAZE and AKAZE. The methodology used in this analysis segregates fetching of the frames (from video input) from the actual processing so that time consuming I/O operation does not affect time taken by each algorithm to process the input. This analysis shows that ORB is faster than remaining algorithms with frame processing rate of 23.9 Frames per Second (FPS), while SIFT is more accurate than others for feature detection and description. The results of this analysis can then be used for Augmented Reality applications implementing one of these algorithms.

Keyterms:--
Augmented Reality, Feature Detection, Feature Description, ORB, SIFT, SURF.

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29thMay 2020

Blockchain for Healthcare

Prof.Piyush Ramesh Kulkarni, Computer Engineering, Sandip Institute of Engineering and Management Nashik
Piyush Suresh Shende,. Computer Engineering, Sandip Institute of Engineering and Management Nashik
Sakshi Rajendra Desale, Computer Engineering, Sandip Institute of Engineering and Management Nashik
Shivani Gangadhar Ugale, Computer Engineering, Sandip Institute of Engineering and Management Nashik

Abstract:--
      Healthcare is a data intensive domain where a huge amount of data is created, which is access and stored daily. Data captured in the paper format is hard to capture in system as well expensive to archive, and being available when required. These challenges may lead to health decisions not made with absolute information, due to missing information there is need for repeated tests or data being stored in a different hospital at a different state or country. This highlights the need of a secured system. The proposed system has the potential to use the Blockchain technology to protect healthcare data hosted within the cloud. Electronic Medical Records (EMRs) contain medical and clinical data related to a given patient and stored by the responsible healthcare provider by using the proposed system. The individual or hospital authority facilitates the retrieval and analysis of healthcare data. The proposed system is a web-based application where user can register and get their unique key.With the help of unique key patient can itself upload patient's data on cloud as well by giving permission to hospital authority they can also view patient's data. By connecting two or more hospital, hospitals can share their patient's data for further treatment. They can share patient's data only if patient has given the right when he/she wants to transfer their medical history to other doctor. Change in data will be reflected to all hospitals in network. For this web-based interface user only has to make use of their Aadhar card number for registration and login purpose, no need of having hospital membership.

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Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Advancement in Intrusion Detection System Using Intelligent techniques

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Abstract:--
Injection attacks are considered as a big issue in web application security. In an injection attack, attacker inserts malicious inputs into a program. These untrusted inputs get handled by an interpreter in the form of a query or command, which perform alteration in the execution of that program. SQL and XSS is a type of injection attacks and are ranked at the top in worldwide according to records (e.g. MITRE and OWASP). This type of injection attacks is very dangerous and widespread, mainly in legacy application. Therefore, it is hard to detect such attacks. in this paper authors have proposed a method for monitoring normal and abnormal behavior of web application. Developed model is based on information acquire from HTTP request stored in a form of log files in the server. CSIC2010 HTTP Data set have been used for the evaluation of methodology to get accurate results..

Index Terms—
Deep neural network, intrusion detection system, web attack, anomalous detection.

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Nashik, 28ᵗʰ – 29ᵗʰ May 2020

Alcohol Sensing Alert with Engine Locking

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Priya Sharma, Department of E&TC,SIEM, Sandip Foundation, Nashik, India

Amit Mishra, Department of E&TC,SIEM, Sandip Foundation, Nashik, India

Abstract:--
Alcohol driving is the leading cause of road accidents. Drunken driver are not in stable condition so the driving is also inconvenience for other users and it also a question to damage of property as well as life of drunken drivers and for others too. In this project, we are developing a system which will lock the engine when the driver is drunk. The input for the system in the form of detection of alcohol in vehicle, the alcohol sensor is attached to the controller. The alcohol sensor will be near the driver from where it can detect the presence of alcohol by analyzing the breath of the driver. If any trace of alcohol is found above the set limit, the system displays alcohol detection note on LCD screen and gives an emergency siren and also stops the engine and also permits an alert to the owner on his mobile phone in form of SMS as well as it will share location of the vehicle. The system requires push button to start the engine. If alcohol is detected by the sensor at the time of starting the engine, the system will block the engine and it will fails to start, and if alcohol is detected after starting of the engine then also the system will lock the engine and the vehicle stops. Thereby minimizing the chances of any mishaps that can happen, this project presents a way to avoid drunken drive accidents.

Index Title –
Alcohol detection, Arduino Uno, MQ3 Sensor, GPS, GSM, Engine Locking

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Automatic Infant Monitoring System

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Sayali Deshmukh, E&TC dept. Sandip Foundation's SIEM Nashik
Prof. Dr. D.P. Patil, E&TC dept. Sandip Foundation's SIEM Nashik
Prof. M.K. Sangole, E&TC dept. Sandip Foundation's SIEM Nashik

Abstract:--
This project presents a baby monitoring system for hardworking parents so that they can ensure the proper care and safety of their babies. This baby monitoring system is efficient of detecting motion and crying condition of the baby automatically. The Arduino Uno is used to make the total control system of the hardware, condenser MIC is used to detect baby's crying, PIR motion sensor is incorporated to detect baby's movement. Finally, the developed hardware is verified to analysis the capability of detecting the motion and crying sound of baby . This proposed system can provide an easier and convenient way for busy parents in terms of taking care of their babies.

Keywords:
      baby monitoring, Safety, Motion Detection Cry Detection.

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Emerging Trends in Engineering and Technology
Nashik, 28th – 29thMay 2020

Iris Database Analysis Using Classification and Regression Algorithm

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Prof. Yogesh R. Risodkar, E&Tc Dept., SIEM
Manish R . Patil, E&Tc Dept., SIEM
Arti S . Kothule, E&Tc Dept., SIEM

Abstract:--
Dataset is harder to handle, predict and classify. So using machine learning algorithm we can easily predict and classify the data. we use the kNN algorithm for the classification purpose and linear regression for prediction purpose. This are the type of supervised learning by using this algorithm we can analyze the data. We use K Nearest Neighbor (KNN) for classification because it is simple for implementation and give significant classification performance. So using this algorithm we can classify the test datapoint into several classes and also we visualized all the data points using various plot. We have taken the IRIS dataset of flower with three unique types of Iris flower that is Setosa, Versicolor and Virginica with four features of flower and we can predict the type of the test flower using linear regression and K Nearest Neighbor algorithm. we evaluating and applying the kNN algorithm and linear regression on Irisdataset.

Index Terms—
K-Nearest Neighbors (KNN), Iris Data, Linear Regression.

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29thMay 2020

Pick and Place Robot Using Hand Gestur

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Abstract:--
Now a days, Robots are playing a chief role in automation across all the areas like construction, military, medical, manufacturing, etc. Some basic robots like line follower robot, computer-controlled robot, Bluetooth-controlled robot etc. have so many drawbacks. To remove this drawback, we have established accelerometer-based gesture-controlled robot by using Arduino Uno. In this we have offered a model to control robotic arm over human gestures using accelerometer. A three-axis accelerometer is placed on human hand to perform the movements of robotic arm according to the movements of human hand. The arm is also furnished with a gripper to simplify the pick and drop facility. The whole plan is placed on a mobile platform with wheels to facilitate movement from one place to another which can be measured using a wireless remote control. The chief intention is to control the robotic arm using human gestures wirelessly with smooth movement over a range.

Keywords –
Accelerometer, Arduino-Uno, Hand Gesture, Microcontroller, Robot.

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Smart Classroom with Intelligent Projector

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Amit Mishra, Department of E&TC,SIEM, Sandip Foundation's, Nashik, India

Abstract:--
 The Internet has become a daily necessity to utmost of the effective participants in which we interact and communicate among ourselves by switching data and information sensed about the environment and atmosphere. In this project we use IoT for energy efficient Environmental Conditions recognizing and supervising in our Classroom with smart projector. This project will help the teacher present in the Classroom to allow them to control the classroom and Projector using android application in the Android smart phone. The overall system design is mainly based on ATmega328p. The appliances are to be controlled by the Android Application namely blynk software. We can supervise the state of sensors connected in the ATmega328p board and we can control the modules by simply enabling some options in the android application.

Keywords:
 IoT, Classroom automation, Blynk, Automation of projector, ATmega328p.

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29thMay 2020

Review on application and functions of Geosynthetics in development of Roadway

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Shwetank Potale, UG Student, Department of Civil Engineering, Sandip Institute of Engineering and Management, Nashik
Prof. Dr. Sarjerao P. Ahirrao, Department of Civil Engineering, Sandip Institute of Engineering and Management, Nashik

Abstract:--
"Geosynthetic is defined as a planar product manufactured from a polymeric material that's used with soil, rock, or other geotechnical-related material as an integral part of an engineering project, structure, or system". Geosynthetics are successfully want to fulfil variety of functions that contribute significantly to the great performance of roadways. They include the functions of separation, filtration, reinforcement, stiffening, drainage, barrier, and protection. One or more of those multiple functions are utilized in a minimum of six important roadway applications. The applications include the migration of reflective cracking in asphalt overlays, separation, stabilization of road bases, stabilization of road soft subgrades, and lateral drainage. This paper reviews study of varies road engineering methods using technical textiles like geo textiles in rural areas, the kinds, basic characteristics, function and properties of Geo-synthetics Consequently. The review states whether and under what conditions geosynthetics (geogrids and geotextiles) increase the structural capacity of pavements and under what conditions geosynthetics increase the service lifetime of pavements and various cost-effective advantages of geosynthetic use.

Keywords:
Geosynthetics, Unpavedroads, Pavement analysis, Subgrade.

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Design and Manufacturing of Pneumatic Conveyor Using Double Acting Cylinders for Machine Shop.

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Abstract:--
　　The materials can be transported conveniently to various destinations by means of a different material handling devices. Products are moved through various conveyer structure versatility. Basically Pneumatic conveying is routinely used to move material within process plants. On account of the compressibility of the conveying air, the pneumatic conveying of solids is quite different from the pumping of liquids or slurries The selection of many of the components that comprise a conveying system such as rotary valves, feed chutes, conveying pipe, and air movers is examined, especially as it relates to reliable operation of a conveying system. Energy is also required to move material through a pneumatic conveying system, but in this case the energy is supplied by pressure differential and airflow continuously. But in this pneumatic conveying system work in combination of gravity trolley, the air pressure in the conveying line is changed by the system's air mover, which generates pressure in cylinder which creates slope from one side which transfer or move the trolley from one station to another station. Where the air mover is cylinder in the system determines whether it to move for material transfer. By controlling the pressure and airflow inside the cylinder system we can successfully transfer materials by using gravity trolley movement within the shop floor.

Keywords:
　　gravity trolley, shop floor, pneumatic, conveying, material.

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Comparative Experimental Analysis of Radiant Cooling and Conventional All Air System for Building Air Conditioning

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Sarthak A. Pawar., Student Department Of Mechanical Engineering, Sandip Institute of Engineering and Management,Nashik

Abstract:--
       Radiant cooling is the use of cooled surfaces to remove sensible heat primarily by thermal radiation and only secondarily by other methods like convection. Increased demand for cooling leads to consumption of a significant amount of energy by heating, ventilation, and air-conditioning systems in buildings. The radiant cooling system is one of the alternatives for achieving annual energy savings. This paper presents comparative experimental analysis of radiant cooling and conventional all air system for building air conditioning. For thermal storage and to get thermal comfort, Radiant cooling systems use the building structure, for saving power in buildings.

Key Words:
       Radiant cooling system, energy savings, air conditioning, conventional all air system.

A Review on Parametric optimization in wire electro discharge machining process for OHNS Steel and its experimental validation

Sambhaji V. Sagare, Sarvepalli Radhakrishanan University,Bhopal (M.P.)
Dr.S.S.pawar, Sarvepalli Radhakrishanan University,Bhopal (M.P.)

Abstract:--
Wire-electro discharge machining (WEDM) has become an important non-traditional machining process, as it provides an effective solution for producing components made of difficult-to-machine materials like titanium, zirconium,OHNS steel etc., and intricate shapes, which are not possible by conventional machining methods. Due to large number of process parameters and responses lots of researchers have attempted to model this process. This paper reviews the research trends in WEDM on relation between different process parameters, include pulse on time, pulse off time, servo voltage, peak current, dielectric flow rate, wire speed, wire tension on different process responses include material removal rate (MRR), surface roughness (Ra), sparking gap (Kerf width), wire lag (LAG) and wire wear ration (WWR) and surface integrity factors. Optimization of process parameters is necessary to reduce cost and time of manufacturing. Various optimization and relation finding methods are shown here which are frequently used by researchers. Few conclusions based on existing literature have been extracted from existing literature on optimization of WEDM process parameters.

Proceeding Book of International Conference on
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Frictionless Energy Generation Using Flywheel

Prof. Kunal U. Shinde, Assistant Professor, Department of Mechanical Engineering Sandip Institute of Engineering and Management, Nashik

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Sanjay Ramkishan Verma, Under Graduate Students, Department of Mechanical Engineering Sandip Institute of Engineering and Management, Nashik

Tushar Chandrakanth Mahale, Under Graduate Students, Department of Mechanical Engineering Sandip Institute of Engineering and Management, Nashik

Abstract:--

The production and use of energy are vital to the economies of all countries and it is needed for many activities such as lighting and phone charging and driving the bike and lot of other stuff, Energy is usually produced by non-renewable sources such as petrol, Kerosene and nuclear which unfortunately create pollution, this is the main reason the idea of producing energy using a bike or Cycle Tyre. Since there are cycling competition that are conducted throughout the year we could Generates sufficient energy to charge small and large devices. But The problem is lots of other existing energy generation mechanism or generators generates energy by taking some physical contact with Tyre but we are developing This idea that could generates electricity without any friction with flywheel.

Key words:

Power Generation, Frictionless, Flywheel

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Design and Construction of Solar and Wind Hybrid Power Generation System

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Vaibhav B. Dhongade, UG Students, Dept. of Mech. Engg., Sandip Institute of Engineering and Management, Nashik
PushpakK. Deshmukh, UG Students, Dept. of Mech. Engg., Sandip Institute of Engineering and Management, Nashik

Abstract:--
In today's technology driven world electricity is one of the foremost thing for our day to day life activities. As we all are oblivious of the fact that the renewable sources of energy are depleting at a lightning fast rate. So it's time for us to shift the focus from conventional to non-conventional sources of energy to produce electricity. The output of the electricity produced by non-conventional sources is less than their counter parts. Renewable sources do not have any detrimental effect on the environment. Solar-wind hybrid system is basically an integration of solar plant and a wind energy plant. It will help in providing the uninterrupted power supply. A microcontroller ensures the optimum utilization of resources and it also increases the efficiency of the combined system as compared to the individual mode of generation. It helps in decreasing the dependence on one single source and makes the system more reliable. The hybrid system can be used for both industrial and domestic application Wind and solar energy have being popular ones owing to abundant ease of availability and convertibility to the electric energy. This work covers realization of hybrid energy system for multiple applications, which runs under a designed circuitry to utilize the solar and wind power. The designed circuitry for more efficient results, and inverters to convert the electrical energy as per demand.

Keywords—
Solar panel, Wind turbine, Microcontroller.

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Page | 15

An Investigation of Knowledge Flow Barriers with in Supply Chain

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Abstract:--
　　Organizations are being aware that knowledge utilization is necessary to sustain enhanced competitive market, therefore most organizations wish to understand how different supply chain knowledge flow barriers (SCKFBs) which affect its progress.The purpose of this paper is to identify and prioritize the SCKFBs as per their level of importance using fuzzy based analytic hierarchy process (Fuzzy AHP). This paper identifies 26 SCKFBs, prioritizing them as per their importance. The result indicates that out of these twenty sixSCKFBs, top SCKFBs are lack of management control systems (SB3),a win-lose negotiation strategy (SB4) and lack of strategic planning (SB1).The result enhance the effectiveness of the organizational knowledge flow implementation within a case study similar of this research.These SCKFBs will contribute a valuable guideline to SC executives who wish to apply successful knowledge flow to improve SC performance. The paper provides a methodology to thepractitioners for analyzing SCKFBs with an objective of better implementation of knowledge flow activity.

Keywords:
　　Fuzzy AHP, Knowledge flow, Supply chain

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Review on Hybrid Refrigeration System for Air Conditioning System

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Abstract:--

The most concern thing in the world in current decade is the reliable source of Energy. As the matter of time it is now time to approach non-conventional source of energy. The major energy among non-conventional energy is generated by solar energy. In this review paper we discussed on the part where we generate energy thorough solar system and after that we utilize that energy to overcome the part load on Hybrid air conditioning. This is done to run the system on partly on solar and rest on electricity. In this whole process the challenge is to maintain the refrigerating effect with simultaneously minimization of electricity consumption. The role of coefficient of performance of system is very critical because as the time passed Coefficient of performance is first decrease and then increase so the challenge is to maintain it. This review paper also elaborate the work done in this field of Refrigeration and Air conditioning

Keywords—

Refrigeration and Air conditioning, solar system, Hybrid air conditioning, Non-conventional Energy consumption.

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Design And Development of Power Tiller by using Scooter Engine

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Abstract:--
  Power tillers have been introduced in the country from the 1960s .Most models of the power tiller being manufactured in India is provided with a front or rear mounted powered rotary unit for forward movement as well as for tillage operation. Earlier farmers were using Traditional farming method which is time consuming, hardworking and costly, hence we introduce new technology. Generally, the machines are used for the farming purpose in India which is of higher level. All machines were used in farms are costlier and not affordable to farmers, hence to overcome this problem we were make this model. This working model of mini power tiller, we were done their trial on the small farms and results are being successful and achieve our main aim to make this model. In this paper we can directly discuss about the working machinery which would be work in one and half hector for tilling purpose. This modern technology we were introduce, plough will be getting moves in forward and base wheel moves rotating with blades having traction effect. The power tillers are being used for seedbed preparation and inter culture operation for wide spaced row crops like sugarcane, cotton etc. This paper presents about working of a power tiller and their different attachments.

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Real Time Face Recognation to Dentify Criminals and Missing Peoples

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Abstract:--
Since, there Is extremely less information and utilization of Facial Recognition System for security observation in India. This system proposes a framework which utilizes Facial Recognition to track or look through an objective individual from a continuous video feed, similar to a images from a reconnaissance framework. Right off the bat, the system is furnished with a Live Video film of the zone that must be examined. At that point it is given an information, informational collection of pictures of a focused on individual for instance, a missing individual, criminal, and so on. When the info is given the system will remove a predefined set of facial attributes from the Input Dataset and make a preparation module which will help in looking through the individual from the ongoing video film. In the event that a match is discovered, the system will distinguish and check the individual.
Likewise one of the principle goals of this undertaking is to build up the previously mentioned framework related to the current Surveillance framework for example to make it good with the as of now introduced reconnaissance cameras in order keep the expenses and bother of running it at least. The utilizations of this proposed system can be in Government Organizations like Police, Military, Municipal Corporations, Large Companies, and so on for following individuals.

Key-words:
Face Detection, Face Recognition, frontal face classifier, LBPHRecognition, OpenCV, Python,C# visual Studio.

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Design and Favrication of Major Losses test Rig

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Abstract:--
     Major Loss is friction loss in flow through a pipe of circular or noncircular cross section. These losses are effect of viscosity, fluid flow type and flow against wall of pipe/Duct. In case of duct or pipe fluid flow, friction losses are loss of pressure or head due to fluid viscosity effect near pipe or duct surface. In this work, major losses test rig is designed and fabricated with pipes of different diameter (29 mm, 2 in numbers and 22 mm, 1 in number) and different material (PVC and GI) are used. Testing of test rig will include determination of friction factor and major loss through each pipe by using Darcy-Weisbach equation. Also ultrasonic sensors are used for accurate measurement of actual discharge.

Keywords
     Major losses, Viscocity, Darcy-Weisbach friction factor, Darcy-Weisbach Equation, Ultrasonic Sensor.

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Design and Manufacturing of Balanced Stretcher

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Abstract:--

      In India, Hospital equipment like stretcher, walker and crutches are useful for patients for moving and for walking especially in indoor and outdoor environment. Moving a patient on wheel stretcher on an inclined surface is often a big task for the attendant. Adopting various sorts of research method helped to gets information of accidents that happened while moving patients on inclined surface with conventional stretcher. This work aims to develop a balanced stretcher with level adjusting mechanism; rack and pinion arrangement along with gear motor is used to maintain the horizontal position of patient on an inclined stretcher. An ADXL sensor is used to detect position of stretcher. This prevents the occurrence of adverse events and safeguards the patient from accidents. It also helps in increasing level of comfort for patient and ease operation as well.

Index Terms:

      stretcher, rack, gear motor, ADXL sensor.

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Design and Manufacturing of Logistic Robotic Arm

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Abstract:--

This paper describes the basic idea of Design and Manufacturing of Logistic Robotic Arm using flowcharts, components required and its usage.we will discuss the construction and working of robotic arm in general manner. We used DC servo motors for joint rotations involved in the robotic arm. These motors are interfaced with microcontroller through custom build PCB circuits. We built the Robotic Arm which will have capability to perform links movements and repeat them using an android device.

Keywords:

Automation, Interfaced,Program, Robotics

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ECO-Friendly Waste Management System for Sanitary PAD

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Abstract:--

Menstruation and menstrual practices still face many social, cultural, and religious restrictions which are a big barrier in the path of menstrual hygiene management. In many parts of the country especially in rural areas girls are not prepared and aware about menstruation so they face many difficulties and challenges at home, schools, and work places. While reviewing literature, we found that little, inaccurate, or incomplete knowledge about menstruation is a great hindrance in the path of personal and menstrual hygiene management. In rural areas, women do not have access to sanitary products or they know very little about the types and method of using them or are unable to afford such products due to high cost. So, they mostly rely on reusable cloth pads which they wash and use again. Needs and requirements of the adolescent girls and women are ignored despite the fact that there are major developments in the area of water and sanitation. Women manage menstruation differently when they are at home or outside; at homes, they dispose of menstrual products in domestic wastes and in public toilets and they fush them in the toilets without knowing the consequences of choking. So, there should be a need to educate and make them aware about the environmental pollution and health hazards associated with them. Implementation of Eco-friendly Waste Management Systems for Sanitary Pad can help to reduce the waste. Also, awareness should be created to emphasize the use of reusable sanitary products or the natural sanitary products.

Keywords-

Sanitary waste, Eco-friendly, Hygiene, Manure, Waste management system, Menstrual health

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Exhaust Operated Air Braking System

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Abstract:--

The main aim is to design an effective braking system which will utilize the engine exhaust as a medium to apply brakes for Tata Prima LX 5530S a heavy tractor which presently uses compressor operated drum type air braking system. Using exhaust from diesel engine will eliminate the air compressor. Hence reducing the load on engine parts which will result in better fuel economy, increase engine life and low wear of engine parts.

This paper is merely a proposal to develop and design various components, operating parameters to replace the drum brakes operated by air with exhaust operated air disc brake.

Keywords:

Braking system, engine exhaust, diesel engine, Tata prima LX 5530, Exhaust operated air disc brakes.

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Solar Operated Tea Vending Machine

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Abstract:--
　　The most concern and global problem is about energy. Counting decades we are using natural resources but now it's time to approach for renewable energy resources like alternative energy, which convert radiation into electricity. During this review paper we elaborated the calculation and procedure to manufacture the low cost tea vending machine using alternative energy. As Tea is that the basic and main refreshment in India and having very high demand in market. To meet this there are numerous roadside tea venders using LPG as fuel which can affect environment and also not cost effective. Within the whole process of producing Tea vending machine the challenge is to form machine more cost-effective to the roadside tea venders and also to extend their profit per cup of tea. While researching the procedure we need to calculate the heat transfer rate, energy required for the heating coil to heat water. We even have to calculate the charging time required for 12V battery which are using for further process. This review paper also discusses the low cost automation using Arduino UNO microcontroller and basic components.

Index Terms
　　Tea vending machine, solar system, heat transfer rate, Arduino UNO microcontroller

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Mathematical Modelling, Design and Fabrication of Assembly Parts Rack Rotator Imbedded with Automation

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Abstract:--
    Automation is widely implemented into manufacturing industries to improve productivity, product quality and to save time. Lear Automotive Pvt. Ltd. Nashik is also among those leading manufacturing plant doing automation of their processes. This paper deals with the same and contains concept and design of rotating mechanism which will rotate a rack mounted on it, containing assembly parts, automatically.The mechanism used is the Geneva mechanism. This mechanism is widely used in various applications such as stamping units, bottle filling plants, watches etc. this mechanism is used to get intermittent motion from one rotation. This rotating mechanism is pneumatically operated for cost efficiency and precision.
The whole system is automated through logic circuits like PLC/Arduino. The input to this circuit is taken through sensors like colour sensors or proximity sensors. Logic circuit output is connected to the input of pneumatic circuit. Logic circuit after input from sensors gives output which activates the pneumatic circuit. This gives rotation to the rotating mechanism which is connected to pneumatic circuit.

Keywords:--
    Automation, sensors, PLC/Arduino, Pneumatic Circuit Geneva mechanism.

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Borewell Rescue System

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Abstract:--
Accidents of children falling into stranded bore wells are becoming continual headlines in India. The problem is all over India. Current rescue methods are time consuming and often children could not be able to hold on to the end. Usually lack of oxygen and light causes child to loose consciousness.This reduces chances of successful rescue.Such events have happened many times in the past, and every time the government is blamed. The rescue process to save the child from bore well is a long and complicated process . The rescue team tries to approach the child from a parallel borewell that take about 20 hours to dig. This complicated process makes most of the rescue operation fail. Very few of the children have been saved .Recently some robots are developed to take out the trapped children in a systematic way. But the question rises, why these robots are still virtual in the real world. This arises safety of the child . The rescue operation mainly consists of three processes; Accessing the Child, Handling the body, Taking child out of the borewell. A regular autonomous robot could easily perform the first and third operations. These robots can perform these two steps within minimum time. But their artificial intelligence is limit of their decision taking ability. Our Project deals with extreme safe handling of the child. The design of recue system is made in such a way that the child never gets hurt and the robot itself provides some first aid to make the child survive till the end of operation. Our Robot design constitutes the most efficient design and performs safe rescue operation safely.

Keywords
bore well, rescue, robot, design.

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Investigation of Adsorption Concentration of Ammonia-Activated Charcoal Pair for Cold Storage

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Abstract:--

An adsorption refrigeration system is a thermally driven, eco-friendly and environmentally safe system that utilizes heat energy such as solar energy and waste heat of flue gases. Adsorption refrigeration system consists of an adsorbent bed, a condenser, an expansion valve and evaporator in which ammonia-activated carbon is used as adsorption pair. It is necessary to determine and study the characteristics of adsorption pair such as p-T-x diagram, interaction between activated carbon as adsorbent and ammonia as refrigerant, adsorption equilibrium, kinetics and heat transfer during the process. In this research work, Dubinin-Astakhov (D-A) equation is used to calculate adsorbent concentration (specific adsorbed mass of adsorbate at different pressure of refrigerates. Feasibility of activated carbon-Ammonia pair has been investigated. The calculated values were used to analyse the working range for cold storage application and observed that the mention working pair was suitable for design of cold storage system. Results clearly indicates that the adsorbent concentration at adsorbent temperature range of -25° C to 120°Chas been found applicable for proposed research work at corresponding pressure range of 1.5 bar to 25 bar. It is a directional path to determine the design parameters of adsorbent bed and it is the milestone for development of large adsorption system for capacity cold storage design.

Keywords

Adsorption cooling, Activated carbon-ammonia pair, Modified form of Dubinin-Astakhov (D-A) equation, equilibrium adsorption uptake, Adsorbent temperature.

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Design and Manufacturing Equipment for Making Sieve Slurry

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Abstract:--

Agriculture is the back bone of Indian economy and about 75% of population in India otally dependent on agriculture for their slurry. There are many techniques developed in India for cultivating for advanced farming but those techniques are not affordable for each and every farmer. Because of their high precaution and purchasing cost. To overcome this drawback, it is very necessary to develop some economic way which increases the production rate and fulfills the demand of the suppliers and also to decrease the increasing malnutrition graph one such technique is enlightened in this project. Hence, we are going to develop a device named as "biochemically sieved slurry." This is affordable for large scale as well as small scale farmers. The device totally based on agriculture field.

Index Terms

Indian economy advanced farming, agriculture equipment.

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Optimization of Parameters of CNC Plasma Cutting Machine for M.S. Cutting

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Abstract:--
    This paper investigates the effect and parametric optimization of process parameters of CNC plasma cutting for mild steel using taguchi method . our main purpose is to identify /investigate the process parameters like Gas pressure, voltage cutting speed &effect of change inthese three parameters on MRR . Fore maximum MRR and minimum surface roughness characterstics process parameters are optimized based on taguchi method . it was observed that which parameter had more effect response of process parameters to the output variable. Our focus on finding the optimum output parameters in CNC plasma machine.

Performance and Emission Analysis of a Compression Ignition Engine Using Different Biofule Blends

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Abstract:--
Existing internal combustion engine (I. C. Engines) systems produces hazardous pollutants like CO, CO2, NOx, SO2, Soot etc with gasoline and diesel as a fuel. it causes problems like global warming. It is also dangerous to lives of human beings and other living organisms on earth. Hence researchers are trying to study the performance of I. C. Engines with different blends of biodiesels like B05 (5% biodiesel with 95% pure diesel), B10 (10% Biodiesel with 90% pure diesel), B15(15% biodiesel with 85% Diesel) And B20(20% biodiesel with 80% pure diesel), in order to improve the performance of I. C. Engines in terms of different pollutants like CO, CO2, NOx, SO2, Soot etc. In the current work the performance of a four-stroke diesel engine is studied with different blends of biodiesels like B05, B10, B15 and B20. Performance results shows that most of the biodiesel, give higher brake thermal efficiency and lower brake-specific fuel consumption. Emission results showed that in most cases, NOx is increased, and HC&CO emissions are decreased. It is found that B20 blend is better amongst other blends in terms of emission characteristics.

Index Terms—
I. C. Engines, Emission, Biodiesel.

Designand Development of Fire Fighting Robot with Android Controller

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Abstract:--

There are innovative improvement has increase the possibilities to caught the flamem is haps and dangers inindustries or any remote areas. Detecting the fire and extinguishing is ahazadous job for a fire fighter,it often risk the life of that person. In this paper authors proposed the design and development of firefighting robot with android controller which provide a solution to extinguish the fire during fire mishaps with the help of water sprinkler.Fire fighting robot is used for fire extinguishingandsurveillance purpose.Therobotisequippedwiththeflamesensorwhichdetecttheflamewithincertainrangeandcameraforsurv ilience.Themovementofrobottakeplacethroughdrivemotor.Therobotisoperatewirelessly to communicate between robot and operater through bluetooth. The robot design is having the external water supply and waterpumpwhichisconnectedtotheservomotortospraywater.The spraying of water through water hose and mechan is mofstopperdonebyservo motor.The front portion of robot is provided with water hose,Surveillance camera,Flame sensor & LED light.The ability of robotis to go throughthenarrowa reas an drestricted terrains. The all operation done by robot is operated using the arduino micro controller.

Keywords-

Sensors,Arduinomicrocontroller,Stopper.

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Design and Fabrication of Three Way Dumping/Tipping Trolley

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Abstract:--
The demand in transportation of goods is at peak and the task of unloading the material at the destination is accomplished with the help of conventional dumping/tipping trolley. The dumping/tipping trolley used can only unload the material from rear side of trolley. Unloading of goods is not a big task in open space, but in compact space maneuvering of the trolley to unload the material in specific place is challenging task for the driver. Many times, driver would get frustrated and tiresome as it is more time-consuming task. So, to overcome this problem we have come with an idea of designing of "Three-way Dumping/Tipping Trolley" which can unload the material in three direction, viz. left side, right side and as usual rear side. A Model of three-way dumping/tipping trolley was developed using NX 10 based on design consideration. In this tipping trolley the Hydraulic Cylinder is used to lift the trolley in respective direction. The placement of hydraulic cylinder is such a way that the location of cylinder matches with center of trolley. For tilting the trolley in defined direction, the Locking pins are used to lock the pivot points (hinges). Further the different elements of system were analyzed for critical stress under shear and buckling.

Index Terms
Dumping, Hinge, Hydraulic Cylinder, Trolley.

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Design and Manufacturing of Height Adjustable Manhole

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Abstract:--

Most of the times we see when the roads are to be repaired or constructing new the manhole gets covered up due to increase in the height of the road due to which there is need to reconstruct the manhole to achieve that height. else, misaligned manhole frames causes poor access to manholes can also be result in other problems. Because manholes frames are not manufactured to be adjustable, an effort to make repairs is time consuming and often ineffective thus there is need to develop adjustable manhole system, the manhole system is constructed by casting the manhole by suitable method according to indian standard. To adjust the height of manhole, system is flexible enough as per the requirement. The scaled model of the height adjustable manhole is made and solid modelling using creo software has been done to determine optimal dimension of gear shaped parts through stresses formulas and application. Ansys workbench is used to validate the strength of manhole. Fabrication of scaled model has been done after appropriate selection of the nodular cast iron framework for nut and screw parts. Where the holder element is developed using mild steel frame . Testing has been done by suitable methods to determine and experimentally validate the strength of the part. It has been found that the stresses generated in the newly developed manhole system are well below the allowable stress of the material used for Manufacturing.

Keywords:-

Height Adjustable Manhole, Safety, Cost effective

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Application for Housekeeping and Maintenance

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Abstract:--
The main goal of housekeeping and management business is to meet customer needs while achieving profile targets. The customer satisfaction is the very important factor for the housekeeping and management business. The major indoor, residential and commercial housekeeping service sustain cost effectiveness, save time, improve service quality and improve efficiency of department. This study focuses on impact of outsource housekeeping services. The study considered the few attributes of housekeeping staff and cleanliness of outsource areas impact on customer satisfaction. This paper augments new urgency to develop new trends in housekeeping domain specific for manifold benefits. Housekeeping means performing all the duties towards cleaning, maintaining orderliness, and running a house or a business property. In case of hotels, the housekeeping duties involve maintaining the hotel to the best possible state in terms of cleanliness, and keeping it at highly desirable ambience. The standards of housekeeping services encourages to customers. This research assesse the housekeeping management practice's and standards of service sector in terms of cleanliness, order lines, sanitation, and safety. Facilities/equipments, materials control and effective maintenance and the problem encountered in the housekeeping department. A validated researcher mode questioner was used to gather the data trangulated by interview and ocular inspection. Weighted means, frequency distribution, percentage and rank were used to analyze data gathered. Housekeeping management practice's were rated "very good". Cleanliness was rated "outstanding", while all the other standards were rated "very good". Problem affecting the housekeeping department of service sectors evaluated "slightly serious". The service sector are encourage to recruit appropriately trend work force and orientation and re-orientation must be part of there housekeeping management programs. service sector must continue to upgrade their facilities to meet the demand of fast changing technologies in this highly competitive world.

Keywords-
Database, Mobile Devices, Housekeeping Services.

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Nashik, 28th – 29th May 2020

Analysis, Simulation and Design of Phase Modulated Series Resonant Converter for High Voltage Applications

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Abstract:--
     Press tools are used to produce a particular component in large quantity, out of sheet metals where particular component achieved depends upon press tool construction and its configuration. The difference types of press tool construction lead to different operations namely blanking, bending, piercing, forming, drawing, cutting off, parting off, embossing, coining, notching, shaving, lancing, trimming, etc. Generally, metals having thickness greater than 6mm is considered as plate. In piercing and notching the required shape is periphery is cut in the work piece material. The press tool used is for piercing operation is called as piercing tool. The applications of press operation are widely used in many industries like food processing, packing, defense, textile, electrical, automobile, aircraft and many apart from manufacturing industry. In this project we have design a piercing tool which is working on mechanical press machine of 40 ton. The tool which is used previously required 3 strokes to produced the 9 pierced hole and now we have designed a tool that requires only one stroke for the same operation. Due to which machining time is reduced and worker's efforts are also reduced

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Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Design and Manufacturing of Hedge Trimmer

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Abstract:--
        The equipments and machines which are used for gardening purpose and in nurseries are pruners or hedge trimmer machine. Machines are used because it considerably reduces the time and physical efforts required. Highway hedges need seasonal and periodic trimming. Trimming work is done by the labor which is dangerous and unsafe to work on highways. In order to improve trimming efficiency and ensure the operation safety a special purpose hedge trimmer is proposed to use.
Conventional hedge trimmer is taken for the said work. Shape and dimensions of trimmer blades are modified. Flat blades were made semi circular in shape and width of the blades is reduced. One blade is fixed to guide way and other one is kept oscillating, so that proper cutting of hedge will be taken once it comes across the oscillating saw. This hedge trimmer has proved itself more efficient, effortless and easier to operate with a little modification in the shape and size of the blades crops of various shapes can be trimmed by using this modified hedge trimmer.

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Nashik, 28th – 29th May 2020

Review on Fluidized Bed Gasifier

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Abstract:--

India is an agricultural-based country producing large-scale biomass / agro-waste which is not utilized to its capacity for energy production. Biomasses are playing an important role among renewable energy sources, due to its easy availability in rural areas. Biogas is produced by anaerobic digestion of biodegradable organic waste, i.e. from animal and agricultural residues. Produce gas is produced from the Biomass by gasification process. Producer gas contains Hydrogen. Carbon monoxide and methane which can be used as diesel fuel substitute in diesel engine and heat appliances. There are two types of gasifier. One is fixed bed gasifier and another is fluidized bed gasifier. However, fluidized bed gasifier have many advantages that the compact structure, uniform temperature profile, variability in fuel particle size and high biomass ash melting point. In this paper gasification, types of gasifier and development of fluidized bed gasifier have been studied.

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Page | 38

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Review Paper on Solar Based Themoelctric Cooler Using Peltier Module

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Jayesh, Sandip Institute of Engineering and Management affilated by Pune University

Anam Shaikh, Sandip Institute of Engineering and Management affilated by Pune University

Umesh kharat, Sandip Institute of Engineering and Management affilated by Pune University

Abstract:--
This paper is a comprehensive review on existing technologies based on solar thermoelectric cooling applications and the present paper deals with the study of Thermoelectric cooler(TEC) using different modules is discussed. The primary objective of this portable solar thermoelectric cooler is to provide a comparatively low-cost alternative to existing cooling systems. Refrigerators in the confines of our homes are too traditional, besides a portable refrigerator with a cooler which runs on solar energy as an alternative is a better choice. As a developing civilization, we have been consuming large amounts of energy for our survival and the non-renewable sources of energy are depleting. It does not make use of refrigerants thus ensuring a green and eco- friendly technology for space cooling applications. Refrigerators in the confines of our homes are too traditional, besides a portable refrigerator with a cooler which runs on solar energy as an alternative is a better choice. The system will utilize solar energy, where supply of conventional electricity is not dependable. The system works on Peltier effect and Seebeck effect. The present refrigerator system produces cooling effect by refrigerants like Freon, Ammonia, etc. Using these refrigerants can get maximum output but one of the major disadvantages is harmful gas emission and global warming. These problems can be overcome by using thermoelectric modules (Peltier effect) cooler and they're by protecting the environment.

Keywords
Peltier module, thermoelectric cooler (TEC)

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Emerging Trends in Engineering and Technology
Nashik, 28th – 29thMay 2020

Design and Performance Analysis of Solar Water Heater and Dryer System using Solar Energy

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Abstract:--
      The conventional energy sources like coal, petroleum, natural gas and nuclear energy are either on the verge of depletion or cause harm to human health and atmosphere or both. The only infinite power source that is free to use all day everyday is sunlight hence it is necessary to shift to Non-conventational energy sources i.e, clean energy sources. The project is about developing a combined system of water heater and dryer using solar energy. As the use of solar water heater is limited only for few month so our aim is to make it use throughout the year by adding a dryer along with the heater, which means that whenever the water heating system is at rest the system can be used for drying purpose for the drying of fruits and vegetables required for daily needs or they can be used simultaneously. This system is also very useful for farmers to remove moisture content from fruits and vegetables. The cost reduction is a major factor .The system includes copper tubes, glass cover, drying chamber, insulated tank. This is a rooftop system which receives solar energy directly.According to the results obtained dated on 8/03/2020, i.e, the first day of performance analysis are as follows:

Time	T (tank) in degree C.	T(water outlet)	T (air)	T(dryer)	Humidity (air) in %	Humidity (dryer)
11.30 am	25	25	28	32	26	12
2.30 pm	42	45	36	58	13	25

Further performance analysis will be carried out for the next two months.

Keywords:
      Clean energy, combined system, cost reduction, copper tubes, insulated tank.

Design and Fabrication of Automatic Bead Placing Device for Truck Tire Building Machine

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Hitesh Bhamare, Under Graduate Student Mechanical Engg. Dept, Sandip Institute of Engineering and Management,Nashik
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Abstract:--
  A bead lock Drum for use in manufacture of vehicle tires and including multiple carriages disposed about a central shaft and carrying a plurality of circumference defining segments, the carriages and segments being separable about a transverse plane of the drum for removal and insertion of spacers between adjacent aligned segments and suitable to alter the width dimension of the drum and permit the use of single drum for making various width tires of given rim size.

Keywords-
  Bead, Drum, Carcass, Tire.

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Emerging Trends in Engineering and Technology
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Review Study of Multi Blends on Properties of Concrete

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Abstract:--
 The study presents the properties of blended concrete made by using cementitious materials like fly ash, silica fume ground granulated blast furnace slag, metakaolin as partial replacement to cement. By addition of these cementing material reduces the cement content which can minimize the environmental impact from the production of cement. These materials can be used to improve sustainability of the cement industry by helping to decrease energy related costs and lower carbon di-oxide emissions. These materials can be used as additives during the concrete making process. Different properties of blended concretes are reviewed from various research articles.

Keywords:--
 Blended concretes, strength properties, Binary blended, quaternary blended, Ground Granulated Blast Furnace Slag (GGBFS).

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29thMay 2020

Sustainable Development of Rural Area by Solar PVC System

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Prof. Dr. Sarjerao P. Ahirrao, Department of Civil Engineering, Sandip Institute of Engineering and Management, Nashik

Abstract:--
The excessive amount of use of fossils fuels to produce electricity has been continuously resulting in the depletion of the conventional resources. Solar energy, the most abundant renewable energy resources in the most preferable alternative for the production of electricity. Solar power plant needs some amount of land to be set up on depending upon capacitor. Cost of land plays an important part to setting up solar power plant.Due to unavailability of a proper land, the cost of land goes high. Due to this, we propose to set up the solar power plant on dam downstream of bodies. The output of the plant can be used to power nearby irrigation system, dam gates, street light etc. The main purpose of the project is to design and install a solar structure on the surface of dam body that would accommodate a solar power plant. In this study an attempt is made to provide alternative to develop that area by using dam site. With the help of solar panel system, we can generate 5.51Kwh/m2/day electricity as there is electricity problems due rural areas and with help of this system we can reduce electricity cost by generating electricity that would also be beneficial for irrigation, rural development, and reduced the maintenance cost of project, with help of rivet software we have made model study.

Keywords
Rural development, Photovoltaic system,Earthen Dam (Ozarkhed dam), Generation of electricity, Solar roadways.

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Nashik, 28th – 29th May 2020

Automated Multi Modes Wheelchair

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Abstract:--

This paper is to develop a wheel chair control which is useful to the physically disabled person using multiple modes. The modes are Joystick, voice command, hand gesture and Android app. This mode will help persons with almost all sorts of disabilities. There are many wheelchair systems for physically disabled persons available in the market but as we move towards automation its more costly so, the main objective is to lower the price of the wheelchair while advancing the same. Raspberry pi is used as a controller for the system. Smart Wheel Chair is mechanically controlled devices designed to have self

mobility with the help of the user command. This reduces the user's human effort and force to drive the wheels for wheelchair . Furthermore it provides an opportunity for visually or physically impaired persons to move from one place to another. The wheelchair is also provided with obstacle detection system, which reduces the chance of collision while on the journey.

Keywords:

Raspberry Pi, Motor, Motor Drivers, voice recognition, ultrasonic sensors.

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28ᵗʰ – 29ᵗʰ May 2020

Design and Modification of Vehicle Door Mechanism for Space Utilization

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Abstract:--

vehicle door is a mechanical device that opens or closes a door in an automobile, which is open by push or pull action manually or automatically. Improvising the vehicle door thereby increases its aesthetics, passive safety functions initialization, entry and egress ease, durability and rate of control over closing. This project gives the detailed concept and mechanism for the new design of the vehicle door which is tested on the fabricating model to occupy less space in a vehicle. The design consists of various components like compressive rack and pinion gear train arrangement with motorized control, battery and other components. To test the mechanism working model is fabricated. The concept drawings give a brief idea of how the actual design look and performance tested by a mechanism.

Keywords :

Rack, Spur gear pinion, passive safety functions, Links, motorized control.

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Emerging Trends in Engineering and Technology
Nashik, 28th – 29th May 2020

Role of Cascade Refrigeration System in Adoption of Lower Temperatur

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Prof. Niteen Bhirud, Associate professor, Mechanical Department, SIEM, Nashik, Maharashtra, India.

Kunal Desale, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India.

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Abstract:--

The contemporary business places necessities to them for accomplishing temperatures lower than - 100°C, for instance in the liquefaction of gases; liquefaction of air, trailed by partition of its segments (nitrogen, oxygen, argon, neon, helium, xenon); use of cryogenic temperatures in medication. Acquire such low temperatures is related with various issues related with increment of vitality utilization, with the development of the refrigeration machine, for example, a base conceivable weight of the pull blower which can for all intents and purposes guarantee. The report gives an investigation of the working rule of falling refrigeration and utilized refrigerants, as indicated by updates of the current enactment. Study for directed examines on getting low temperatures by utilizing fell machines and blends of different refrigerants is made.

Keywords :

refrigerants, cascading refrigeration.

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Nashik, 28ᵗʰ – 29ᵗʰ May 2020

A Review on Optimization of Machining Parameters for Surface Roughness in Turning Operation of Titanium Alloy

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Abstract:--
Titanium alloy is a high specific strength material and it has excellent mechanical characteristics such as high stiffness, high strength-to-weight ratio, exceptional corrosion resistance and hardness at high temperature, so it is being increasingly employed in various fields such as automotive, aerospace and bio-industry. For machined product, the productivity and the quality are the main important challenges of metal cutting or in production industry during turning processes and inherent characteristics of titanium alloy promote poor surface roughness, heat dissipation from the tool workpiece interface, rapid tool wear. This results in competing manufacturing industries to sustain in the market field. This article reviews the optimization parameters such as cutting speed, depth of the cut and feed rate for the turning operation of titanium alloy and focuses on the analysis of process details. This study also investigated the machinability of titanium using coated and uncoated carbide tools and the different optimization methods and their related analysis software. The results show the significant improvement in surface roughness, tool life and other evaluating parameters.

Index Terms—
Titanium Alloy, Optimization methods, Machining Parameter, Surface Roughness, Tool life, Tools.

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Nashik, 28th – 29th May 2020

A Review on Heat Transfer & Flow Characteristics in Spiral Tubes

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Abstract:--
      Fluid flows via path curvature pipe can increase the efficiency of transfer of heat. Spiral coils are frequently used for the heat exchangers, electronic cooling, chemical reactors, food industry, health industry and so on. They are compact & their heat transfer rate is much higher as especially in comparison to straight tubes of the very same length.. It is a well-known fact that heat transfer in Spiral coil is higher than in straight pipe.This study summarizes and discusses critically the studies published in the literature about the characteristics of pressure drop & flow in spirally coiled tubes.Consequently, the aim of this analysis is to provide educational and industrial researchers with a realistic overview of the related correlations and supporting Method for measuring the characteristic of pressure drop & flow in Spiral pipe tubes.

Key words:
      Curved Tubes; Spirally Coiled tube; Curvature ratio;Newtonian fluids

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Nashik, 28ᵗʰ – 29ᵗʰMay 2020

Analysis & Prediction Model for Cardiovascular Disease based on Machine Learning Approches:A Review

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Abstract:--
     In Human Life healthcare is an inevitable task. But now a days millions of death arises due to cardiovascular disease that is called CVD. CVD is one of the type of heart diseases. In heart disease, the heart is unable to push the required amount of blood to other organs of the body. So its need to predict this disease but prediction of cardiovascular disease is a critical job in the area. Machine learning (ML) has been shown to be effective tool in decisions making and predictions from the large quantity of data available from medical industry and internet field. In this paper, survey is carried out on several machine learning (ML) algorithms in order to identify which algorithm is best suits the Cardiovascular disease prediction with high level of accuracy.

Keywords:
     Machine learning, feature selection, cardiovascular disease (CVD), prediction model.

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Nashik, 28th – 29th May 2020

Design and Fabrication of Measure Coefficient of Discharge of Orifice- Meter

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Rishikesh More, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Amol Mohite, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Akash Aher, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India.

Abstract:--
We design fabricate and testing 0f coefficient of discharge of orifice meter test rig. We take the same diameter pipes of different material. Our intension in this project is to put on focus about the measure of coefficient of discharge of orifice meter. We determine the actual or measured value of discharge by taking volume and time required and later calculating theoretical discharge by taking ratios of actual and theoretical discharge we can calculate coefficient of discharge of orifice meter. A simple and inexpensive sharp-edged orifice demonstration is described for use in the laboratory or Fluid Mechanics classroom. A steady-state demonstration is described which yields a discharge coefficient, CD, of 0.64, almost identical to coefficients described in the literature. A time-dependent experiment employed CD to yield model results which were within 3% of the experimental data obtained in draining water from the pipe through orifice meter and setup.

Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29thMay 2020

Pneumatic Operated Staircase for Railway Application

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Abstract:--
Automatic Staircase controlled by pneumatic actuators and IR sensors. In which to run this mechanism of staircase operation using pneumatic, controller and infrared sensor technology. By research there are more number of accident occur due to the gap between staircase of railway bogie to the lower platform of railway. So this mechanism will reduces the gap between train door to platform and it will be safe to the passenger to upstairs to the train and downstairs from the train. this mechanism is divided into three parts , firstly designing and fabrication of mechanism , secondly developing a controller for staircase operation and thirdly assemble the different component to work together to adjust the height of staircase at each platform level. When train comes in contact with platform of railway station in the range of sensor, signal is sent to the controller which controls the electro pneumatic circuit. By controlling this circuit folding and unfolding of the staircase as per required height can be achieved. In the future of this mechanism can be modified according to requirement height. To obtain result actual working prototype is designed but suitable actual large scale mechanism can be developed taking into consideration load acting and platform height conditions.

Keywords:
Automatic staircase, platform height, Electro-Pneumatics Control , IR Proximity sensor, Train.

Proceeding Book of International Conference on
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Nashik, 28th – 29th May 2020

Gesture Control Quadcopter

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Abstract:--

Conventionally quadcopters are controlled using joysticks, remote controllers, mobile applications, and embedded computers. There are some ignificant issues with this method that are quadcopter control is limited by the range of electromagnetic radiation and susceptible to interference noise. In this study, we propose the use of hand gestures as a method to control quadcopters. Following computer vision approach is used to improve the performance accuracy, to develop an intuitive way of agent-less communication between a quadcopter and its operator. Computer vision-based methods rely on the ability of a quadcopter camera to record surrounding videos and display on Screen. The proposed framework involves a few key parts of the ultimate action to be taken Decision tress, random forest, Logistic regression, Machine learning, Strategic decisions, Higher educational institutions.

Keywords:

Quadcopter, UAV, Gesture control, Internet of Things, IMU (inertial measurement unit)

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Nashik, 28th – 29thMay 2020

Monitoring of Various Parameters and Disease Control of Banana Crop (Banntex) using Wireless Sensor Networks: A Case Study

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Abstract:--

In India 60 percent of total cultivated land is fully dependent on rain and if it is less than average rain fall then there is significant reduction in the overall agricultural production and it leads heavy losses to farmers and ultimately it affects the overall gross domestic production of India. Banana is an important fruit in India. In this research work, Authors aim is to design and implement Banana Crop System (Banntex) to sense crucial parameters and early detection of diseases and control using Wireless Sensor Networks and Internet of Things. Experimental results will show the significant improvement in the Banana crop production and Quality. To implement Banntex they uses advancement of new technology like Internet of Things (IoT), Sensors development and Improved Wireless Sensor Networks, we can design and developed precision Agriculture systems in which various sensors are used to measure the different parameters like change in weather, temperature, humidity, moisture changes in soil, soil quality, fertility of soil, various weeds, level of water, magnesium and nitrite content in soil, ground water quality, crop growth, pest detection, crop on line monitoring, animal intrusion into the field and so on. IoT along with wireless sensor networks have been used to design and develop precision agriculture monitoring system. Based on the measured parameters this system can be used to control and automate the farming processes. This precision system empowers farmers to keep updated, early detection and control of diseases, increase productivity and improved quality of farming with minimum manual tasks. Authors have carried out a detailed literature review on various approaches of precision monitoring system using Internet of Things (IoT). Authors are conducting a research on the design and implementation of precision agriculture system for monitoring different parameters and early detection of diseases and control of Banana Crops (Banntex) System which will result to increase the productivity and quality of Banana products.

Index Terms

Monitoring, Parameters, Disease Control, Wireless Sensor , magnesium and nitrite content in soil , Cloud Database Server, Monitoring System, Banana Crops, Banntex

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Proceeding Book of International Conference on
Emerging Trends in Engineering and Technology
Nashik, 28th – 29thMay 2020

Maximum Power Point Tracking in Wind Energy Conversion System using a Permanent Magnet Synchronous Generator

Anjali Prakash, Department of Electrical & Electronics Engineering, RGPV University,Bhopal (M.P.)
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Abstract:--
　　　Wind Energy is the most widely used non-conventional, renewable energy source. The rapid technological advancement in field of Wind Energy Conversion Systems (WECS) has led to many environmental, social and economic benefits. When compared with Constant-speed WECS, Variable-speed WECS provides lot of advantages, which includes an increase in power output, reduction in mechanical stress and an improvement in power quality and system efficiency. In recent years, many Maximum Power Pointing Tracking (MPPT) techniques have been developed for variable speed operation of the Win Energy Conversion Systems to maximize the power Extraction.
In this paper for a PMSG based WECS, Control strategies are used to track the maximum power point. The system consists of wind turbine which is operated on variable wind speed are coupled to a generator(PMSG) through a gear box which is connected to a full bridge diode rectifier, generator side convertor (current controlled voltage source inverter), dc link,current controlled voltage source inverter (Grid side convertor), transmission lines. BY controlling dc link voltage, we can extract maximum power from wind speed from cut in to rated wind speed.DC-DC and DC-AC converters PWM controllers are simulated using MATLAB-SIMULINK. simulation results show that the extraction of maximum power from the wind and transferring it to the grid are reached.

Keywords:
wind energy; wind turbines; MPPT control; DC-DC power converter; simulation

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Role of Robotics in Welding

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Abstract:--

An Industrial robot is reprogrammable, consequently controlled, multifunctional controller programmable in at least three tomahawks, which might be either fixed set up or portable for use in mechanical robotization applications. Specialized advancements in automated welding has encouraged manual welding forms in cut off working conditions with colossal warmth and exhaust to be supplanted with mechanical welding. The mechanical welding has more noteworthy ability to control robot movement, welding parameters and upgraded wrong discovery and wrong remedy. Significant troubles in mechanical welding are joint edge investigation, weld infiltration control, crease following of joints, and width or profile estimation of a joint. These issues can be all the more effortlessly fathomed by utilization of tactile criticism signals from weld joint. Automated welding framework has canny and successful control framework that can follow the joint, screen the joint in procedure and records for variety in joint area. Sensors assume a significant job in mechanical welding frameworks with versatile and canny control framework includes that can follow the joint, represent variety in joint area and geometry screen in-process nature of the weld. In this paper different parts of mechanical welding, robot programming, and issues related with robot welding are embraced.

Keywords :--

Robotic welding, sensors, robot programming, phases of welding, hindrances in robotic welding.

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Method for Fault Detection Using Svm Method

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Abstract:--
Because of the developing interest on power, how to improve the efficiency of gear in a warm force plant has gotten one of the basic issues. Reports demonstrate that efficiency and accessibility are intensely dependent upon high dependability and practicality. As of late, the idea of e-upkeep has been acquainted with diminish the expense of support. In e-upkeep frameworks, the insightful deficiency location framework assumes a critical job for distinguishing disappointments. Information mining methods are at the center of such savvy frameworks and can enormously influence their presentation. Applying these strategies to blame discovery makes it conceivable to abbreviate shutdown upkeep and consequently increment the limit use paces of gear. In this way, this work proposes a help vector machines (SVM) based model which coordinates a measurement decrease plan to dissect the disappointments of turbines in warm force offices. At last, a genuine case from a warm force plant is given to assess the adequacy of the proposed SVM based model. Test results show that SVM beats straight discriminant examination (LDA) and back-spread neural systems (BPN) in classification execution.

Keywords:
Thermal power plant, Equipment, Fault detection.

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Condition Monitoring of Machine Tool for Manufacturing of Fasteners.

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Abstract:--

Condition Monitoring is an advanced tool of predictive maintenance techniques. In every rotating machine element vibrations and noise is considered as critical parameter to evaluate machines health and condition during operational life. Most of the rotary elements are involved in machine tools in industry. A bearing is one of them which is important component in the rotary machines and has been widely used in various industries in many of the applications such as supporting of shafts, to reduce friction and handling stress as well as provide proper relative motion between the two components etc. Vibrations are found almost everywhere in machine due to rotating elements. Vibration occurs due to unbalance forces, misalignment and improper functioning of bearings. Condition monitoring caters to the availability of machines and its efficient functioning. For this reason predictive maintenance is necessary for machine tool.

Vibration Monitoring, wear debris and temperature monitoring are some of the widely used method for detecting the faults in bearing. Vibration signal analysis is one of the commonly used techniques for checking the condition and finding faults in bearings. By using suitable signal processing methods, changes in vibration signals are detected which helps to maintain the bearings health condition. By detecting and analyzing the machine vibration, it is possible to determine and predict the machine failure. Predictive maintenance of the bearings is done by analyzing the vibration signal using suitable techniques. In the present work condition monitoring on nut forging machine is done which leads to improve tool life, productivity, availability and reliability.

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Modification of Roller Specification in Spinning Machine

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Abstract:--

The metal forming process by rotation, commonly known as spinning, is used to manufacture automotive shock absorbers. Spinning machine is used for outer tube of shock absorber. Spinning operation is done by spinning head consisting a set of 3 rollers driven by electric motor. This spinning head connected to spindle housing, which is fixed at top of column. Component is moved against rollers from bottom by hydraulic cylinder. Spinning is done for the fitment of parts such as spacer oil lock, guide spring, wave washer and lower spring seat in front fork and shock absorber. Our ultimate objective is to increase the production rate of shock absorbers and try to get less rejection. Spinning operation done on the spinning machine, the job is fitted in the spinning headinwhich the three rollers are mounted. To manufacture the rollers some cutting processes , some heat treatment processes are follows.With the help the rollers spinning is done so all the parts into the shock absorber fixed accurately. By taking the different trials of different radius of rollers such as R2,R2.5,R3 with keeping constant taper angle 10 degreeThe roller Radius of 3 gives the best results, high productivity and reduce rejection.

Key words:

spinning, shock absorber, spinning machine, spinning head, rollers, Radius3.

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Efficient Energy Metering for Electric Vehicle Charging Infrastructure

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Prof. Yogesh R. Risodkar, E&Tc Dept., SIEM
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Abstract:--
    In the 21st-century, our planet is facing global warming because of high carbon emissions. Every country has acknowledged this issue and is taking steps to push the Electric Vehicle (e-vehicle or EV) system within the trade. For this purpose, e-vehicle charging infrastructure is required with less capital investment. Several trade consultants see charging infrastructure as a key hurdle for the expansion of this market and hence, the need for big-ticket investment. Public Electric Vehicle infrastructure is often settled in massive metropolitan areas. Supporting facilities like DC/AC charging with sensible energy metering using the support of leading eye technology is important element charging infrastructure. All of these make charging infrastructure one of the key areas to stress upon for native communities who wish to partake in the economic advantages that Public Electric Vehicle represents.
In this paper we propose smart metering system to measure the electricity consumed by the Electric Vehicle during charging at these stations and dispatch the bill as per consumption. IOT system is also proposed to collect data of the charging vehicle along with its billing history, to analyse utilisation and efficiency of the charging infrastructure.

Keywords:
    E-vehicle, DC/AC charging, IOT.

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Self Healing Coatings

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Abstract:--

The need of durable materials is very crucial. All the material that we use in our day to day life generally disintegrates and decomposes with time. There are various reasons for that. But one solution which can help improve is self healing materials. Self healing composites are materials capable of automatic recovery when damaged. Automatic recovery of materials increases life, improves efficiency and reduces causes of fatal destruction. They are inspired by biological systems such as human skin which are naturally able to heal themselves. This paper reviews the work on self healing composites. Damage to material is caused by many reasons one of which is corrosion. Corrosion produces a layer which degrades metal slowly. Many options are there to prevent corrosion but none are permanent one method is coating. Different active pigments are used and varied combination of them helps increase the life of the coating. Coating provides a barrier to various phenomena such as dust and moisture particles, however it also has its failures. It fails to protect the material from scratching and various environmental factors. In order to tweak it optimally, coating has been modified to make it self mending. Self-healing coatings that autonomically repair and prevent corrosion of the underlying substrate are created through dispersion of microencapsulated healing agents in a polymer film. Such way cracks are healed. The paper discusses the effects of corrosion and damages caused due to it. It also mentions solution. The process of self healing and coating using capsule based self healing material is focused and its applications are briefly discussed. This material provides an abundance of applications in sectors of military, automobile, space equipment. Finally, future opportunities on self healing approaches are discussed in day to day applications as well as in huge projects.

Keywords:

Material, Self Healing Materials, Material Failure, Corrosion, Self Healing Coating.

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IOT Based Smart Waste Collection System Automation for Smart City

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Abstract:--
over the years the manual attending management has been carried across most of waste management system. To beat the issues of manual attending, we've developed "IOT based mostly attending Management System". Attending Management System is predicated on net server, which might be enforced on any vehicle of waste management system. During this application we have a tendency to be attending to update the automated attending of worker of waste management system and additionally system goes to trace the situation of trash collection vehicle. The system communicates with info residing on a foreign server. It calculates mechanically, the attending share of the employee/ with none manual paper-based work. The system facilitates the tip users with interactive style and automatic process of attending management. The proposed system will be helpful for planning the effective management of garbage collection system

Keywords :
Cloud Storage, IoT, Smart City, Solid Waste Management

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Smart Taxi Meter

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Abstract:--
   In our system we have proposed an idea of development of a smart yet cost effective fare meter which can accurately measure the distance and also can give solution to the fare payment difficulties. Taxi meter is calculated according to the distance and charges already saved in the program. Many of the individual taxi drivers try to make fool passengers and charge high rate. We are supposed to implement drivers owns taxi system in which the fare is fix according to per kilometre with no extra charge. Our goal of this project is to digitize the system in such a way which would be of convenience for the driver, vehicle owner and the passenger. Our project is to make a taxi meter for taxicab with microcontroller and LCD display. Customers will be free to choose their own stop on the meter and there will be price displayed on the basis of stop chosen by the customer. This technology can be used in order to protect citizens from overpaying. The customer has facility of cashless travel with the help of online payment. Driver will also get extra benefits like SMS notification and analysis of daily earned fare.

Keywords:
   Microcontroller, LCD, Sms, Fare Meter, Push Button

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Nashik, 28th – 29thMay 2020

Smart Irrigation System

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Bhumika P Patil, SandipInstitute of Engineering and Management Nashik
Chaitainya Thombre, SandipInstitute of Engineering and Management Nashik
Jibin Jacob, SandipInstitute of Engineering and Management Nashik

Abstract:--
  Today the farmers are finding difficulty in monitoring the field about moisture content and temperature of the field. Hence, this project is developed to monitor the farms using the concept of Internet of Things (IoT) and Image processing. The solar panel is used in our project to utilize the renewable energy which acts as an uninterruptable power sources.. The Soil moisture sensor and the Humidity sensors are used to monitor the moisture content of the soil and also the temperature and humidity of the surroundings. The DC Pump can be controlled automatically (switched ON/OFF) by the Arduino, Ethernet shield and Relay, based on the soil moisture and the temperature level. These data's and the condition of the DC Pump are send to the BLYNK ANDROID App to monitor the farms and lands by simply login to our account, and the condition of the DC Pump is also notified to the user Email with the help of internet connections by using Arduino and Ethernet shield. In image camers technique the health condition of the crop is intimated to the user with the help of webcam. The Camera captures the images of the crops and checks the images of the crops to detect its health condition whether it is infected or in Healthy condition. And the condition of the crops is intimated to the user by sending its images and health condition of the crops by E-mail notifications. This can be monitored from any part of theworld.

Keywords –
  MPPT (Maximum Power Point Tracking), IoT (Internet of Things), DC (Direct Current)

Optimization of Kinematic Linkage for Variable Displacement through Adaptive Control

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Prof.Dr.P.Ravi Kumar, PhD Scholar Guide from Sarvepalli Radhakrishnan University, Bhopal

Abstract:--
　　　Lubrication is significant part of machine maintenance. The automated lubrication system, is applied to supply controlled quantity of lubricant to multiple slide and bearing locations in a machine during its operation. The new system is beneficial in two aspects namely it saves labor cost and secondly it helps in maintenance of machine in precise manner. At the heart of the ALS system remains the pump that supplies the lubricant to the distributor system. The conventional systems apply pumps that are of constant or fixed displacement, where in the discharge cannot be controlled hence they are not useful for the ALS.
On the other hand, the advanced systems that are fully automatic use variable displacement pumps which although very precise are extremely costly and hence render very costly for such applications especially in case of small scale industry. Thus in the paper a proposed auto control variable displacement pump is attained through an innovative kinematic linkage based stroke variation mechanism that is controlled using an automatic control link mechanism that can precisely vary the stroke of the mechanism and thus the pumping unit volume flow rate can be controlled.
Paper discuss the kinematic linkage design by use of graphical method and the also through ADAMS software.

Index terms:
　　　Automated lubrication, kinematic linkage, adaptive control, variable displacement.

Testing of Flywheel and Measurement of Air Flow Parameters

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Dr. Dhanpal A. Kamble, Professor, Mechanical Engineering, VIIT Pune
Dattatray B. Nalawade, Assistant Professor, VIIT Pune

Abstract:--
        This project aims at developing and testing setup for measurement of various air flow parameters on the flywheel. The need for this setup arises from flywheel manufacturing company to test flywheel performance over various air flow parameters of different diameter flywheels. The main goal is to measure velocity, pressure and temperature of atmospheric air passing over flywheel when it is rotating. These parameters are measured by using pitot tube sensor which measures velocity and pressure as well. The whole setup design and the locations where all the measuring instruments are to be measure and the points where measurements are to be done are all specified by ASME.
The drive system used in this setup is three phase squirrel cage motor with variable frequency drive to vary the speed so as to take readings at various flywheel speeds till it reaches its maximum speed of 1568 rpm.

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MITRA: Artificial Intelligence based Interactive Companion

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Abstract:--
Mitra is an Artificial Intelligence-based interactive bot that serves as a companion to especially the senior citizens and home- stationed patients under prolonged observation. MITRA is designed to address the issues of old-age people and their security when they are alone. Mitra is a friend/companion that performs various tasks such as face detection, face recognition, sentiment analysis, control peripherals and interact with authenticated people in its vicinity. It is a stationary assistance bot designed around the ASUS Tinker board and Arduino UNO as the main controlling units. Servo motors with two degrees of freedom control the neck motion while Logitech HD webcam is used for image capturing. Ultrasonic sensors trigger the interaction when the user is in close proximity. Natural language processing is implemented using TextBlob. MITRA can deliver speech output with the help of Text-To-Speech library. It keeps a record of the mood fluctuations (positivity/negativity) of the elderly person/patient. Other features include the control of room peripherals like bulb, fan, charger etc. over local Wi-Fi network with the help of NodeMCU. Mitra provides security by raising an alarm and sends an email to administrators/family members whenever it detects an intruder in the room.

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Design for Six Sigma Methodology for Manufacturing of Hydraulic Broaching Machine

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Abstract:--
Automation using latest technological tools for new product development is an increasing need of industry as it reduces cycle time, increases productivity and reduces labor cost. The main challenge for industries is providing a better quality, specifications to meet consumers increasing demands, and meet financial goals of organization. Design for six sigma deals continuous improvement of new or existing process using tools which are extensively used such as DMAIC and DMAIV. The main objectives of this research paper is designing and developing a Hydraulic Broaching Machine using Design for Six sigma technology replacing with existing conventional Broaching Machine. For replacing the existing conventional Broaching Machine DMAIC and DMAIV is used. DMAIC briefly defines the problem and analyzes it thereby finding a suitable technique to control the arising problem. By implementation of Design for Six Sigma Methodology speed variations, gradual loading, good surface finish, shorter cycle time can be achieved including waste management. The cost required for replacing the Broaching tool which used to break due to wobbling is also reduced. In this way the maintenance cost is reduced. The heat generation problems and vibration issues will also be controlled.

Keywords:
Automation, Financial Goals, DMAIC, Broaching Machine, Six Sigma

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Multi-Climate Air Cooler

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Rohit Patil., Department Ofmechanical Engineering, Sandip Institute Of Engineering And Management

Abstract:--
  The paper presents the detailed information about Multi climate air cooler. We have designedthis cooler by making modifications in the conventional desert coolers used in our country. This is amultipurpose cooler which gives air cooling effect, cooling water for drinking as well as provides cool space for storing perishable products.

Keyword:
Radiator, Desert Cooler, Hybrid, refrigeration, evaporative cooling, Multipurpose.

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Page | 68

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Automatic Infant's Brain MR Images Soft Tissue Segmentation Method: A Review

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Abstract:--
Infant's brain accurate segmentation MR images into different tissue such as white matter gray matter and cerebrospinal fluid is a crucial substance for initial cramming of brain progress patterns and morphological changes in neurodevelopmental disorders. We summarize a review of the different methods used in infant's MR images brain tissue segmentation.

Keywords:
infants, segmentation, tissue, MRI

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A Reveiw of Analysis of Types of NDT Method

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Yash Pawar., Department of Civil, Sandip Institute of Engineering and Management
Sanket Awate., Department of Civil, Sandip Institute of Engineering and Management
Jay Verma., Department of Civil, Sandip Institute of Engineering and Management

Abstract:--
According to the various review papers of various structure such as buildings, roads, RCC structure such as water tank, bridges etc. evaluate with the help of various NDT methods. Each type of structure showing its properties, according to, it requires various NDT methods. The types of defects or flaws for different materials may vary excessively. Some NDT instruments only work on non-porous surface. Some NDT methods fail to stabilise old or historic monuments. Many of the instruments requires full of electricity as well as constant supervision.Hence it is cleared that all NDT methods or it's combination not use for all structures. And many of the instruments are works on site many of them required skill labour. Therefore, there is need to develop easily accessible and effortless instrument.

Optimization of Machining Parameter of Inconel 718 in Turning Operation for Green Productivity-A Review

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Prof. Dr.L.K.Toke., Associate professor, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Prof. Ankit Kumar., Assistant professor, Mechanical Department, SIEM, Nashik, Maharashtra, India.

Abstract:--
    The world is going to face severe threat from the global warming and climate change .Undoubtedly industry has a large contribution in these problems. So there is a need to enhance the environmental performance of the industry. We can say that today's era is an era of environmental concerns so the manufacturing industry has no choice to follow the environmental norms. This ultimately results in encouraging the green machining and green productivity. Green productivity means increasing the productivity using green technology. There are several factors which contributea lotin green machining. The power factors (PF), energy consumption (EC), energy efficiency (EE) are some of the important factors which contribute a lot in green technology. The review focuses on that green technology may be usedto decrease the energy consumption of machines. The lean manufacturing is also a part of green technology. In this review we have tried to study machining of different material including Inconel in regards with green technology and green productivity. It is observed that theimportant factorswhich severely affectthe performance of a cutting tool are a) Material removal rate b)Hardness c) Wear resistance.

Key Words:
    Green productivity, Inconel 718 & Green machining.

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Design and Development of Material Handling Robot

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Abstract:--
In industrial robotic environment, there are many different robots performing a variety of tasks. In our project robot is used for material handling. Material handling robot refers to a type of system that can be used in production as well as in other industries. This system includes battery operated mobile sensing locomotive on which small lift is provided, path detector for specific path on which it moves, sensors for sensing the obstacles also sensors for sensing the position of loading and unloading. The material handling robot moves using electric supply from battery, the motors are provided for moving robots on wheels. The motor gets power through control unit and wheels follow the path that is detected by path detector by certain color (Yellow) or operator commanded way through android application .The all operation done by robot is operated using the 8355 microcontroller.

Key Words:
sensors, android application, 8355 microcontroller.

NPK Nutrition's Monitoring System for Banana Crop Using Internet of Things (NPKBANNTEX)

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Abstract:--
Now days the precision agriculture technologies taking front row seats in agriculture research. In this work we proposed precision Nitrogen (N), Phosphorus (P) and Potassium (K) i.e. NPK nutrition's monitoring system (NPKBANNTEX) for banana crop using Internet of Things. A banana plant needs balanced nutrition which contains all the micro and secondary nutrients for the proper growth of plants. Banana plants requires various nutrition's like, Nitrogen, Phosphorus, Potassium, Boron, Magnesium, Sulphur, Iron, Copper, Zinc, Manganese, Calcium etc. Out of all these nutrition's, the most essential nutrition's are Nitrogen (N), Phosphorus (P), Potassium (K) Once we sense and measure various nutrition's then we can monitor and decide the required nutrition's for banana plants. If there are any NPK nutritional deficiencies or disorders in Banana plants then there are symptoms and afterwards various diseases can be created in the banana plants and there is significant reduction in the productivity of banana plants and heavy losses to the farmers. Therefore, it is very much necessary to balanced nutrition's requirements for banana crops. Our proposed system is guiding farmers to supply proper fertilizer to balance the NPK nutrition's so that there is complete growth of plants which results to increase the productivity and quality of Banana fruits.

Key Words:
Precision Agriculture, Nutrition's, Monitoring, Banana, Nitrogen, Phosphorus, Potassium, Monitoring System, Wireless Sensor Networks, Internet of Things, Productivity, Fruits.

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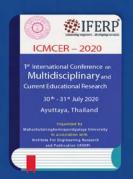INSTITUTE FOR ENGINEERING RESEARCH AND PUBLICATION (IFERP)

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