Criteria 3: Research, Innovations and Extension

Key Indicator – 3.3 Research Publications and Awards

3.3.4 Number of research papers per teacher in the Journals notified on UGC website during the last five years (10)

Index

Sr. No.	A.Y	Computer Engineering	E&TC Engineering	Mechanical Engineering	Civil Engineering	Total Count
1	2017-18	07	14	04	07	32
2	2016-17	07	08	17	07	39
3	2015-16	02	27	18	06	53
4	2014-15	05	18	06	03	33
5	2013-14	04	14	02	03	23

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Criteria 3: Research, Innovations and Extension

Key Indicator – 3.3 Research Publications and Awards

3.3.4 Number of research papers per teacher in the Journals notified on UGC website during the A.Y.-2017-18

Index

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number
Wavelet transform-based steganographic method for secure data communication using OFDM system	Prof. S. I. Nipanikar	E&TC Engineering	International Journal of Intelligent Computing and Cybernetics	2017-18	ISSN:1756-378X
A Sparse Representation Based Image Steganography Using Particle Swarm Optimization And Wavelet Transform	Prof. S. I. Nipanikar	E&TC Engineering	Alexandria Engineering Journal, Article In Press Oct 2017	2017-18	
Vehicle Location Tracking and Control using Secured Wireless Networks	Prof. Mukund B. Wagh	Computer Engineering	International Journal of Engineering Research in Computer Science and Engineering	2017-18	ISSN (Online): 2394-2320

SLA and Idle Server Monitoring Algorithm with Feedback in QOS Load Balancing	Prof. S. J. Shaikh	Computer Engineering	Global Journal of Engineering Science and Researches	2017-18	ISSN :2348 – 8034
Pushover Analysis By Using X-Bracing At Different Location In RC Building	Prof. A. S. Boke	Civil Engineering	International Journal pf Advance Research in Science and Engineering	2017-18	ISSN:2319-8354
Identification of Diseases in Cotton Plant Leaf using Support Vector Machine	Prof. J. J. Bandal	E&TC Engineering	Journal for Advanced Research in Applied Sciences	2017-18	ISSN: 2394-8442
Design And Implementation Of Can Bus Controller On Fpga	Prof. T. S. Zende	E&TC Engineering	International Journal of for Research in applied Science and Engineering Technology	2017-18	ISSN: 2321-9653
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Cotton Plant Leaf Diseases Identification Using Support Vector Machine	Prof. J. J. Bandal Prof. T. S. Zende	E&TC Engineering	International Journal Of Recent Scientific Research	2017-18	ISSN: 0976-3031
Review Of Suspension System And Experimental Study Of 2 Dof Quarter-Car Semi-Active Suspension System For Ride Comfort	Prof. D. A. More	Mechanical Engineering	International Journal Of Current Engineering And Scientific Research	2017-18	ISSN:2393-8374

Testing Machine of Metal Can Coating By using ARM Processor	Prof. T. M. Dudhane	E&TC Engineering	International Journal Of Engineering, Research In Electronics And Communication Engineering (IJERECE)	2017-18	ISSN (Online): 2394-6849
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Smart Industry Based Environment Monitoring And Controlling System	Prof. D. U. Dalavi	E&TC Engineering	International Journal Of Engineering Research In Electronics And Communication Engineering (IJERECE)	2017-18	ISSN (Online) 2394-6849
Smart Medication Box For Memory Disorder Patients	Prof. S. B. Patil	E&TC Engineering	International Journal Of Engineering, Research In Electronics And Communication Engineering	2017-18	ISSN (Online) 2394-6849

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Advancement in an Engineered Cementatious Concrete	Prof. A. S. Shelke Prof. S. R. Sutar Prof. S. V. Bankar	Civil Engineering	International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE)	2017-18	ISSN (Online): 2456-1290
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An Efficient Data Hiding In Digital Color Image By Sparse Representation	Prof. R. S. Nipanikar	E&TC Engineering	International Journal Of Advanced Research In Electrical, Electronics And Instrumentation Engineering	2017-18	ISSN(O): 2320 – 3765
Stress analysis of V- stirrer blade made for conical agitation for MDF	Prof. N. D. Bagul Prof. D. B. Misal Prof. J. P. Borude	Mechanical Engineering	International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE)	2017-18	ISSN(O): 2456-1290
Design Modeling and Experimentation of Linear Motion Transducer by Using Flexural Bearings	Prof. D. A. More Prof. C. S. Gaikwad Prof. S. B. Jadhav	Mechanical Engineering	International Journal of Engineering Research in Mechanical and Civil Engineering (IJERMCE)	2017-18	ISSN(O): 2456-1290

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In the authors' previous work, the embedding and extraction process was done based on the cost estimation matrix. To enhance the security throughout the communication system, the novel wavelet-based embedding and extraction process is applied to the OFDM system in this paper. The idea behind this method is to attain a higher imperceptibility and robustness of the image.

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quadrotor unmanned aerial system

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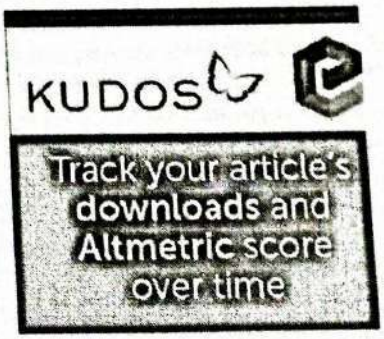

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ORIGINAL ARTICLE

A sparse representation based image steganography using Particle Swarm Optimization and wavelet transform

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KEYWORDS

DWT;
Image steganography;
IDWT;
PSNR;
MSE

Abstract With the growth of information technology, information security is a major concern in the interactive environment, where there is no security for the messages send to and from the receiver. A technology named image steganography has been employed that ensures security to the covert communication and safeguarding the information. Image steganography hides the secret message in any of the recipient images and sends the secret message such that the message is visible only to the sender and the receiver. This paper proposes a method for image steganography using sparse representation, and an algorithm named Particle Swarm Optimization (PSO) algorithm for effective selection of the pixels for the purpose of embedding the secret audio signal in the image. PSO-based pixel selection procedure uses a fitness function that depends on the cost function. Cost function calculates the edge, entropy, and intensity of the pixel for evaluating fitness. Simulation has been done and comparison of the PSO with the other existing methods in terms of Peak-Signal-to-Noise-Ratio (PSNR) and Mean Square Error (MSE) determines the proposed PSO, as an effective method. The proposed method achieved a better PSNR and MSE values of 47.6 dB and 0.75 respectively.

1. Introduction

Over the past few years, Stenography is a widely growing concept in all fields, and its applications have extended from the limited environment to the extensive environment. Stenography is an art and science that deals with information hiding and in the beginning only images has been employed as the steganographic covers but, now it is extended to all multimedia, such as audio, video, and text files [10]. The utmost aim of steganography is that it is capable of hiding a message in any audio or video data. The interesting fact is that the presence of these hidden data is indistinguishable from a person in such a way that an eavesdropper finds a tough way even to identify the presence of hidden data [16]. Steganography provides a new solution using a sensitive approach providing protection to the covert communication between the trusted parties. Thus, digital steganography makes the information

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Vehicle Location Tracking and Control using Secured Wireless Networks

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Abstract: **- Now a days, automobile thefts are great concern increasing at an alarming rate all over the world. Increasing the density of vehicles creates a problem in large number security of vehicle. Solution to this problem new approach is developed for providing security to vehicle by developing secured vehicle management system for control and tracking. In this system the user will control his vehicle through an android application. A secured mode of communication between Smartphone and vehicle is established via GSM network where authentication is done before establishing communication. Using Smartphone, the owner will be able to lock/unlock the vehicle and track the vehicle in case of theft. If the GSM network is not available then the secured Bluetooth mode is used for communication. The performance of the proposed scheme is evaluated on the metrics such as end to end communication between user and vehicle.**

***Index Terms*— Global Positioning System, Subscriber Identity Module, GSM network, Bluetooth.**

I. INTRODUCTION

Vehicles are expensive other than a house, perhaps, few purchases will compare to a new vehicle. In order to this just like any other expensive asset, a vehicle brings with it a secondary cost, the risk of theft. In some laid-back parts of the world, locking the doors may be enough to ward off the threat. Everywhere else, it's a good idea to arm yourself, and your vehicle, with some security. In these days, automobile thefts are increasing rapidly all over the world. So to escape from these thieves most of the vehicle owners have started using the theft control systems.

The aim is to provide a user an innovative way to control (lock, unlock) and track vehicle through the secured wireless networks so that owner can access vehicle via Smartphone and to develop a database management system for RTO officials so that, work of RTO documentation becomes paperless. The system focuses on development of vehicle locking and tracking system. With this, the owner will be able to have secured communication between owner's phone and the vehicle via wireless network viz. GSM network and Bluetooth. In the network mode, the owner can access the vehicle from anywhere using web based technology. If this network mode is not available then system uses Bluetooth as alternative for which user needs to be in Bluetooth range to connect the vehicle. The system will include a module with microcontroller installed in the vehicle which will communicate with Smartphone application through GSM network and depending upon the command received from the Smartphone app, the device in the car will respond and act accordingly. To enforce the security, the system will comprise of central cloud storage where the authentication will be done before granting the access of car to its owner. Plus, when data network is not available, there will be availability of Bluetooth as an alternative way to establish the communication.

II. LITERATURE REVIEW

2.1 Existing System

In 2012 Dhotre et al [2] using GPS (global positioning), it is possible to get the location of the vehicle. So, we can track the vehicle using this technique. In 2011 Jayanta et al [3] the ignition locking from remote place by using cell phone is possible. This can be used as antitheft or theft prevention.

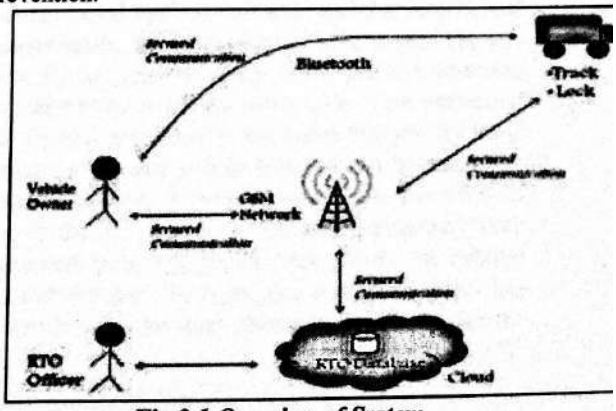

Fig 3.1 Overview of System

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SLA AND IDLE SERVER MONITORING ALGORITHM WITH FEEDBACK IN QOS LOAD BALANCING

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ABSTRACT

The scheduling algorithm plays vital role in day-today life. The load balancer can map task to resource that based on some particular objectives. The main objectives of load balancing is resource utilization and task completion. Cluster formation is done based on properties and processing power of server and assign task to first phase. In First phase, Service Level Agreement (SLA) algorithm determines priority of tasks, cost estimation and assign task to the respective cluster to second phase. In second phase, the Idle-server monitoring algorithm applies to check server is idle or not and result is forwarded to third phase which check whether task is get processed or not and reassignment of task will be done and analyze the result. The main aim is to understand the processing power and number of tasks are going to be processed by server to maximize throughput. This paper shows that maximum throughput by introducing Quality-of-Service in cloud environment.

Keywords: *Cloud computing, Quality of Service, Load balancing scheduling techniques, Load balancing algorithm*

I. INTRODUCTION

The cloud load balancing is one type of load balancing method that is performed in cloud computing environment. Load balancing is process of distributing or dividing workloads across multiple computing system or resources. A load balancing reduces cost and maximizes availability of resources which is associated with document management systems. In order to suit user requirements, it uses a precise method to map the tasks to appropriate cloud resources, though by default maximum strategies are static in nature [6].

Whenever cluster formation is done then the cluster of server should be session-aware, so that any client connect to any cluster of servers at any time , the user gets unpredicted experience.[10] This is usually achieved with in-memory database or shared database. In distributed resources, scheduling problem is process that maps and manages the implementation of independent tasks. In order to meet the users specific need, process can provide appropriate resources to ensure that the workflow can be successfully completed.[6] Cloud Computing is state which gives proper and on-demand network access to shared pool of computing resources like network, storage, servers and services that are to be rapidly released with the efficient way in minimum management.[7]

At present, cloud computing is suffering from some challenges like security, QoS, Power Consumption and Load Balancing etc. Currently, as there is an increase in technology and consumer demands, there is excessive workload which calls for the need of the load balancer.[6] To balance the task properly the task should be get prioritize so that the tasks can be handled properly. The priority of task is depend upon the processing power of ant server or system. The processing power is calculated depend upon the hardware configuration such as input and output functionalities of system[6] [7].

The concept of balancing the load on the server on cloud has an important effect on performance. [10] The uneven distribution of load among the servers result in server overloading and may lead to crashing of servers. This degrades the performance of server. Load balancing is technique that distributes the load equally among the servers which avoid the overloading of server, server crashes and performance degrades. Load Balancing is an important factor that good response time, effective resource utilization. Thus the effective load balancing is needed.[6][10]

II. RELATED WORK

This section describes the related work of Qo Sscheduling algorithm[6] in cloud environment. The main challenge of cloud computing is distribution of work load in well balanced manner. So the distribution should be done among the different nodes so that resources should be properly utilized. To optimize this problem, good load balancer

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PUSHOVER ANALYSIS BY USING X-BRACING AT DIFFERENT LOCATION IN RC BUILDING

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ABSTRACT

Earthquake is the sudden movement of tectonic plates in the earth's crust. An earthquake that releases energy in the form of waves that travel through the earth's crust and cause the shaking of the ground. They can cause large scale loss of life and property and disrupts essential services such as Water Supply, Sewerage systems, Communication and power, Transport etc. and destroy villages, towns and cities but the aftermath leads to destabilization of the economic and social structure of the nation. The result in damage to the structures, hence we need to design the buildings to withstand these earthquakes. Pushover analysis has been the preferred method for seismic performance evaluation due to its simplicity.

In this paper, G+9 RC building is modeled and analyzed by using X-bracing at different location. The computer aided analysis is done by using SAP2000 to find out the effective lateral load system during earthquake in high seismic areas. The structure has been evaluated using Pushover Analysis, a non-linear static procedure, which may be considered as a series of static analysis carried out to develop a pushover curve for the building. The main aim of this study is that the performance of the building is evaluated in terms of Lateral displacement and Base shear (Pushover or capacity curve). In the present study, seven model of bracing at different location has been analyzed by using pushover analysis. It shows the behaviour of the components and failure mechanism in a building. The various parameter and guidelines are used from as per IS 1893:2002 (part-1) and IS 13920-1993.

***Keyword*: Pushover curve (Base shear Vs Displacement), Different location of X-bracing.**

"Identification of Diseases in Cotton Plant Leaf using Support Vector Machine"

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RDTC, SCSCOE, Dhangwadi
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ABSTRACT: This project presents a technique used image processing techniques for fast and accurate detection of plant diseases. The steps followed by these researchers in detection of leaf spot diseases are: image acquisition, image pre-processing, disease spot segmentation, feature extraction and disease classification. The accuracy of result depends on method used for disease spot detection. The main obstacle in disease spot detection is noise, which is introduced by camera flash, change in illumination, noisy background and presence of vein in the plant leaf. Therefore a method which wipes out the noise and provides better disease spot segmentation is needed.

Keywords: Software's used were OPENCV and MATLAB.

1. INTRODUCTION

Dheeb Al Bashish et al. [7], proposed image processing based work is consists of the following main steps : In the first step the acquired images are segmented using the K-means techniques and then secondly the segmented images are passed through a pre-trained neural network .The images of leaves taken from Al-Ghor area in Jordan. Five diseases that are prevalent in leaves were selected for this research; they are: Early scorch, Cottony mold, ashen mold, late scorch, tiny Whiteness. The experimental result indicates that the neural network classifier that is based on statistical classification support accurate and automatic detection of leaf diseases with a precision of around 93%.The segmentation of leaf image is important while extracting the feature from that image. Mrunalini R. Badnakhe, Prashant R. Deshmukh compare the Otsu threshold and the k-means clustering algorithm used for infected leaf analysis in [8].They have concluded that the extracted values of the features are less for k-means clustering. The clarity of k-means clustering is more accurate than other method. The RGB image is used for the identification of disease. After applying k-means clustering techniques, the green pixel is identified and then using Otsu's method, varying threshold value is obtained. For the feature extraction, color co-occurrence method is used. RGB image is converted into the HSI translation. For the texture statistics computation the SGDM matrix is generated and using GLCM function the feature is calculated [9].

S. Phadikar, J. Sil, and A. K. Das [10] developed an automated classification system based on the morphological changes caused by brown spot and the leaf blast diseases of rice plant. To classify the diseases Radial distribution of the hue from the Centre to the boundary of the spot images has been used as feature by using Bayes and SVM Classifier. The feature extraction for classification of rice leaf diseases is processed in the following steps: firstly images acquired of diseased rice leaves from fields. Secondly preprocessing the images to remove noise from the damaged leaf and then enhanced the quality of image by using the [mean filtering technique. Thirdly Otsu's segmentation algorithm was applied to extract the infected portion of the image, and then radial hue distribution vectors of the segmented regions computed which are used as feature vectors.

Pranjali VinayakKeskar& et al.[11] developed a leaf disease detection and diagnosis system for inspection of affected leaves and identifying the type of disease. This system is comprised of four stages: To improve the appearance of acquired images image enhancement techniques are applied. The enhancement is done in three steps: Transformation of HSI to color space in first stage .In the next stage analyzing the histogram of intensity channel to get the threshold.

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Design and Implementation of CAN Bus Controller on FPGA

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***Abstract:** This paper describes the design, simulation and FPGA implementation of a protocol controller for the Controller Area Network (CAN) 2.0 which transmits and receives data at 1Mbps speed. It also going to deal with the design process of the FPGA, coding, simulating, testing and finally programming the FPGA. The CAN Controller designed will function as the interface between an application and the actual CAN bus. The RTL based design of CAN controller is implemented using Verilog HDL. The design is realized physically with electronic design automation (EDA) tools. Logic Equivalence is verified and Simulations are made at each level to verify the implementations. Model Sim SE6.3f will be used for functional simulation and Xilinx ISE tools will be used for synthesis and performance analysis.*

I. INTRODUCTION

Controller Area Network (CAN) 2.0 is a serial communication bus originally developed for the automotive industry applications to replace the complex harness wiring by a two-wired bus.

The specification allows signaling rates of up to 1 Mbps and features high immunity to electrical interference and ability to self-diagnose and repair data errors.

Although initially developed for use in the automotive industry, its use quickly spread to a wide variety of embedded systems applications like industrial control where high-speed communication is required.

These features have extended the range of applications to variety of industries such as automotive, marine, medical, manufacture, military, aerospace, etc.

[1]The main task of this project is to implement the functionality of CAN controller on FPGA Board. All modules designed must conform to the CAN specification for the data transfer rate of 1 Mbps. Fig. 1 shows the block diagrams of existing and proposed CAN controller architecture.

The existing system is consist of an A/D convertor, a microprocessor, a CAN protocol controller and a transceiver. The CAN Protocol Controller receives unformatted message from the microprocessor, frames the messages as per the protocol specifications and also de-frames the received CAN message frames.

The digital signals transmitted by the protocol controller are converted into electrical signals compatible with the CAN differential transmission medium by the CAN transceiver which is used as a separate entity. The integration of these individual blocks on FPGA would constitute the entire proposed CAN Controller architecture.

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Text Recognition By Using Character Descriptor And SVM Classifier

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ABSTRACT:Generally, the images captured by Camera has many different shapes, sizes, colours, text, non-text etc regions which very complex the Camera-based scene images usually have background which is very complex. The existing system is very sensitive to font scale changes and background interference with low accuracy. The most important aim of this system is based on character recognition method. Separating text or characters from captured scene images or videos is a very difficult task because of different text styles, fonts, patterns and variable background image interferences. We are proposing in this paper that a process of natural scene text recognition from selected text regions from a natural image. In text detection, we detect text from any natural image by using MSER (Maximally Stable Extremal Region) algorithm. MSER contains the text region from an image; for text recognition and the proposed system uses character descriptor which is very effective in extracting image. The local features descriptor HOG is suitable and compatible with all main points' detectors from interested region. Our method of text recognition from detected text regions is very compatible with an application of mobile devices. The demo system which developed is completely based on Android operating system. The Proposed system exactly extracts text from any natural scene image with background interference. The demo system gives us details of algorithm design and performance improvements of scene text extraction.

KEYWORDS: Text understanding, Text Detection, Character Features, Feature Extraction

I.INTRODUCTION

Now-a-days with the rapid growth of technology there are many camera based applications are available in different devices like tabs, cell phones, etc. Everyone is able to capture the images easily, but whenever we need to read the text presented in those images are very difficult. This is the main Problem for us. Since so many years, the text detection plays very important role in human life it can be helpful in the language translation and navigation. Text extraction plays a very important role for blind people when they want to read the text presented in the scene images. By these ways the text reorganization and detection can play vital role in humans every day and in future it can be part of so many computer applications. In this paper, our aim to solve text detection problem. Now, we describe the overview of text detection and recognition. In scene text detection process, we apply the methods presented in our proposed work MSER based is adopted to extract text regions and segment text characters in image. In text recognition, for Feature extracted by method of character descriptor that involve some key point detector. To recognize text, this system has designed a scheme to scene text recognition. Training a binary character classifier for each character class to predict the existence of this category in an image patch.

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Research Article

COTTON PLANT LEAF DISEASES IDENTIFICATION USING SUPPORT VECTOR MACHINE

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ABSTRACT

This project presents a technique used image processing techniques for fast and accurate detection of plant diseases. The steps followed by these researchers in detection of leaf spot diseases are: image acquisition, image pre-processing, disease spot segmentation, feature extraction and disease classification. The accuracy of result depends on method used for disease spot detection. The main obstacle in disease spot detection is noise, which is introduced by camera flash, change in illumination, noisy background and presence of vein in the plant leaf. Therefore a method which wipes out the noise and provides better disease spot segmentation is needed.

INTRODUCTION

Dheeb Al Bashish *et al.* [7], proposed image processing based work is consists of the following main steps : In the first step the acquired images are segmented using the K-means techniques and then secondly the segmented images are passed through a pre-trained neural network .The images of leaves taken from Al-Ghor area in Jordan. Five diseases that are prevalent in leaves were selected for this research; they are: Early scorch, Cottony mold, Ashen mold, late scorch, tiny Whiteness. The experimental result indicates that the neural network classifier that is based on statistical classification support accurate and automatic detection of leaf diseases with a precision of around 93%.

The segmentation of leaf image is important while extracting the feature from that image. Mrunalini R. Badnakhe, Prashant R. Deshmukh compare the Otsu threshold and the k-means clustering algorithm used for infected leaf analysis in [8]. They have concluded that the extracted values of the features are less for k-means clustering. The clarity of k-means clustering is more accurate than other method.

The RGB image is used for the identification of disease. After applying k-means clustering techniques, the green pixel is identified and then using Otsu's method, varying threshold value is obtained. For the feature extraction, color co-occurrence method is used. RGB image is converted into the HSI translation. For the texture statistics computation the SGDM matrix is generated and using GLCM function the feature is calculated [9].

S. Phadikar, J. Sil, and A. K. Das [10] developed an automated classification system based on the morphological changes caused by brown spot and the leaf blast diseases of rice plant. To classify the diseases Radial distribution of the hue from the centre to the boundary of the spot images has been used as feature by using Bayes and SVM Classifier. The feature extraction for classification of rice leaf diseases is processed in the following steps: firstly images acquired of diseased rice leaves from fields. Secondly preprocessing the images to remove noise from the damaged leaf and then enhanced the quality of image by using the [mean filtering technique. Thirdly Otsu's segmentation algorithm was applied to extract the infected portion of the image, and then radial hue distribution vectors of the segmented regions computed which are used as feature vectors.

Pranjali Vinayak Keskar *& et al.*[11] developed a leaf disease detection and diagnosis system for inspection of affected leaves and identifying the type of disease. This system is comprised of four stages: To improve the appearance of acquired images image enhancement techniques are applied. The enhancement is done in three steps: Transformation of HSI to color space in first stage .In the next stage analyzing the histogram of intensity channel to get the threshold. Finally intensity adjustment by applying the threshold. The second stage is segmentation which includes adaption of fuzzy feature

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REVIEW OF SUSPENSION SYSTEM AND EXPERIMENTAL STUDY OF 2 DOF QUARTER-CAR SEMI-ACTIVE SUSPENSION SYSTEM FOR RIDE COMFORT

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Abstract

This paper presents an experimental analysis of 2 degree-of-freedom quarter-car passive suspension system (2 DOF QC-PSS) and 2 degree-of-freedom Semi-active suspension system (2 DOF QC-S-ASS) (typically composed of a controlled damper and a passive spring) for ride comfort. A quarter-car suspension system consists of the sprung mass, unsprung mass, a suspension spring and damper and a tire spring. A damper with Electro- Rheological (ER) fluid has been considered as one of the most feasible choice for a semi-active suspension system due to its Rheological properties and low cost. Thus this model is modified to a 2 DOF Quarter-car Semiactive Suspension System by placing ER Damper, with its assistant control instrumentation, in between sprung and unsprung masses. The results illustrate considerable improvement in ride comfort above the conventional passive system. The details of the quarter-car model progress with the test set-ups for the passive and hydraulic semi-active suspension systems, suspension elements employed, experimental analysis and results are presented.

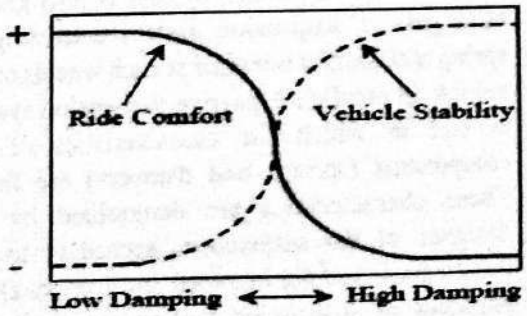
Keywords: 2 DOF quarter-car model; Semi-active suspension system; hydraulic actuator; ride comfort

1. Introduction

The main goal of a vehicle's suspension system is to separate the occupants from external terrain included disturbances, while still allowing the average driver to maintain control over the vehicle and drive it safely. The design of vehicle suspension system always involves a compromise between ride comfort and handling. For good ride comfort a compliant suspension system is normally required, while good handling demands a stiff suspension system to control body roll.

With passive suspension system, the characteristics of the springs and dampers are permanent at the design stage and cannot be changed afterwards. By using controllable springs and dampers, the suspension characteristics can be changed while vehicle is moving. It therefore becomes possible to have soft settings for good ride comfort while travelling on straight lane on good road, as well as changed to hard setting moments later to give good handling when vehicle has to change direction as required for lane changing or even accident avoidance. Setting can also be adjusted based on terrain roughness.

With limited suspension travel available, increased terrain roughness might require an increase in spring stiffness to prevent bump stop contact and therefore improve ride comfort.



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Testing Machine of Metal Can Coating By Using Arm7 Processor

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Abstract: - A specialized machine device is designed which checks the coating of metal cans. The metal cans are made up of aluminum metal. It is highly reactive, so coated with paint to check coat is uniform or not. This machine will test metal cans i.e. uncoated areas are present in the metal cans or not. Metal cans are coated by using sprays. So sometimes some small areas on the internal side of metal can remain uncoated, they get reacted with internally stored sprays. This will affects the quality of the product. So we are designing this machine to improve quality of the product. It will test metal can is properly coated or not. It will display porosity value on LCD. It uses the principle of electrolysis. Electrolysis means the process of by which current will pass from one electrode to another through the ionized solution. Metal Can under test is provided with the anode and cathode assembly. If there is no current flow, it indicates metal can is ok. If current flow occurs, then indicate metal can is not ok.

Index Terms— ARMLPC2148,Electrode, LCD, and LED.,

I. INTRODUCTION

The system is designed using ARM LPC2148 microcontroller. The Production of company are cans. They are used for storing perfumes, scents. These cans are made up of Aluminum metal. As it is highly reactive metal, cans are provided with internal and external coating. Paint are applied on can surface by using sprays. External side porosity of cans is easy to test. It is difficult to test internal side porosity. If coating is not proper and uniform, the open aluminum metal gets react with content stored in metal can with scents and perfumes stored inside can. It affects quality of products. So, one machine is designed in this paper which is use for testing lacquer porosity inside the metal cans. Lacquer means coating provided on metal. Porosity indicates number of pours means number of uncoated area remains inside the can internal side. The internal side is coated with paints to avoid reactions of metal with stored content. This machine will check porosity and check cans are faulty or uniformly poured. It works on the "Electrolysis principle". Electrolysis is electrochemical process by which current will pass from one electrode to another through ionized solution.Can under test is provided with anode and cathode assembly. If there is no current flow, it indicate can is ok. If current flow occurs, then indicate can is not ok that is if current flow occurs, then indicate can is faulty. In addition visual indication is provided by deposition of copper if coating is not continuous. The equipment is capable of giving reading direct on LED display.

The equipment provides the required information quickly and reliably and is particularly suitable for quality control application. The equipment is suitable for 230VAC 50Hzs. It is designed in low cost as compared to its market prize.

II. BLOCK DIAGRAM:

The figure 1 shows the block diagram of testing machine for metal can coating using ARM processor.

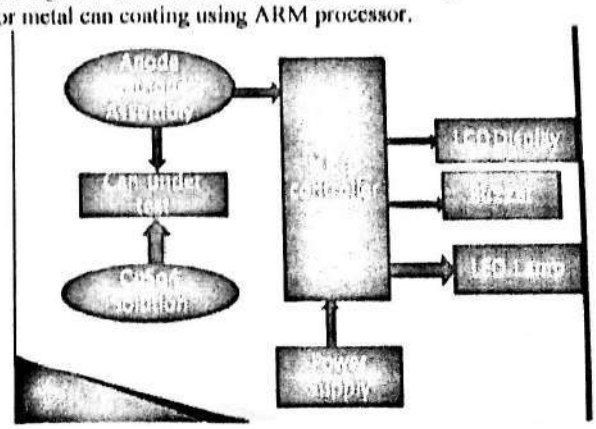

Figure 1.Block diagram of testing machine for metal can coating using ARM processor

Working Principal:

Can under test is filled with CuSo4 solution. Then it is provided with anode cathode assembly. Anode used here is copper electrode. It is connected to positive supply of

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Detection and Classification of soybean leaf diseases using K-means Clustering

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Abstract: **- Soybean Blight Brown Spot, Soybean powdery mildew and Downy Mildew are most common destructive foliar diseases of soybean and can cause significant yield loss. Timely application of fungicide, in the early stage of fungal infection, is important for effective control of the disease and is largely dependent upon the capability to quantitatively detection of the infection. The main purpose of this work is to identify and classify the soybean leaf disease based on the symptoms that are visible in leaf image. In this paper, Color-based segmentation method (K-means clustering) has been in corporate for separating the infected region from the leaf image. The infected stains are characterized by the features like color and textures. In the classification phase the color co-occurrence features, based on SGDM, are extracted and compared with the corresponding feature values stored in the feature library.**

Keywords: **- K-means, Segmentation, Color feature, Color space, SGD..**

I. INTRODUCTION

Soybean rust is one of the most destructive foliar diseases of soybean. It produces copious amount of airborne spores that can infect large areas of soybeans and cause significant yield loss. Since 1994, the disease has been reported in countries such as Thailand, India, Southern China, and Japan. Yield losses were reported up to 80% in experimental trials in Asia (Hartman, Wang, &Tschanz, 1991). In the United States, this disease was first reported at the Louisiana State University AgCenter Research Farm in 2004 (Schneider, Hollier, &Hitam, 2005), but yield loss was not as high as those reported from other countries. An effective way to control soybean foliar diseases is by applying fungicides (Bravo et al.,2002; Heald, Thames, and Wiegand, 1972; Mueller et al., 2009;Foliar diseases can also cause changes in leaf color thus making it possible that the method of Schaberg et al. (2003) and Murakami et al.(2005) could be adapted to quantify different fungal foliar diseases. To test the method for disease assessment, black and white drawings from a manual of disease assessment keys showing foliar diseases with different disease severities (James, 1971) were digitized using a flatbed scanner, and then analyzed using Scion Image[4].Diagnosis the disease is a more complicated task to perform manually and consume much time. With the recent development in the field of image processing and pattern recognition techniques, it is possible to develop an automation system for disease detection and classification of crops based on the visual symptoms on leaf image.

II. RESEARCH METHOD

The Accuracy of the system based on the result of segmentation technique. Thresholding [1], [2], [11], [12], and 13] is a common Segmentation technique [3], [4], [5] that separate the region based on the threshold value. This method consumes much time and quality of the image is the main factor in the process. Clustering is a simple segmenting technique that forms the cluster with similar color pixel or similar texture. Easy deployment and plainness is one of the advantages of the clustering technique. In this work color based k-means clustering segmentation has been proposed to identify the infection based on the color of the leaf image. Based on the suggestions of field experts, the characteristic of the soybean foliar disease is dissimilar. The manual detection is based on the color and shape of the infected region. The color change in the infected region with respect to the background is measured as the one of the feature for classifying the disease. In this work the color features are computed using the mean, standard deviation of the infected regions, green pixels and background pixels with color change in the infected region compare with background in Red, Green, Blue color planes. Color, feature is considered as the main feature and some of the

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Design of Arithmetic, Logical Unit for 8 Bit Microcontroller using VHDL

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Abstract: - Now a days as far as the speed of the processor is concerned, a new trend of design philosophy in the market is the use of reconfigurable hardware i.e. by using FPGA.(Field Programmable Gate Arrays). This paper deals with the construction of ALU,Logical unit and rotate unit and implemented using Xilinx 9.2 i. Instructions implimated by the individual module are simulated and synthesized by using VHDL and SPARTAN III FPGA board for design purpose, parallelism approach of designing is used in which use of minimum number of combinational circuits and maximum use of sequential circuits for avoiding delay. The instructions implemented are eight by arithmetic unit, logical unit implementsseven instructions. The designed units are recombined with other modules for construction of a 8- bit microcontroller, using FPGA for the improvement in speed.

Keywords: - RISC, FPGA, VHDL, SPARTAN-III.

I. INTRODUCTION

In today's word, we see many industrial and domestic products like remote controllers;telephone bill printing machines, automobiles, mobile phones, oven,automation is required [1]. This is required to facilitate the process of mechanism for its operation and control. Data storage and processing is an integral part of any automatic control system. So there is a need to have a device called,"Microcontroller", which helps to carry out the function of automization. While designing, the improvement in speed and having implementation of maximum instruction near about 40 instructions, are the goals of the designing. For the achievement of this goal, parallelism approach is used. The PIC16F84,RISC CPU has 35 instructions which are single word and single cycle except program branching instruction which are two cycle. The present operating speed is 20MHz and clock input is DC.Program memory is 1024 words,Data RAM is 68 bytes.Data E2PROM is 64 bytes. Core has 8-bit data size and 14-bit wide instruction words[5]. The present PIC is developed module wise at gate level and VHDL code is developed modulewise.The four states T1,T2,T3 and T4 are developed, which are opcode,fetch,decode,execution and write back respectively. For implementing purpose SPARTAN-III is used, because of low cost, high volume and high performance and consumer oriented applications [2].

II. METHODOLOGY

For the designing and implementation of the RISC processor, the design methodology is discussed below.

2.1Modulewise Development:-

The PIC16F84 Microcontroller is partitioned into number of modules as instruction decoder,Arithmetic unit,Logic unit,Rotate/shifter unit,Bit-set clear unit,Generation of T-states and combination of all above units.The VHDL code is written for individual module using Xilinx ISE simulator. It features optimized direct compile for the fastest compile times and competitive simulation performancel

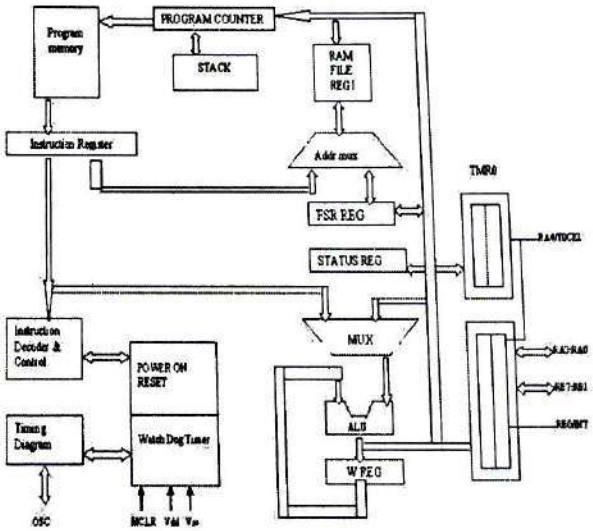

Fig.1.The Block Diagram of RISC 16F84

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A Review on Software-Defined Wireless Sensor Networks (SDWSN) and its Challenges.

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Abstract: - Software Defined Networking brings about innovation, configuration in network computing and simplicity in network management. SDN technology is an enormous approach to cloud computing which facilitates network management and enables efficient network configuration programmatically that improves network performance and monitoring. WSN consist of nodes that interact with the environment to achieve the sensing task thereby sensing the physical parameters such as temperature, pressure, volume etc and also help control them. These nodes can perform computation, sensing, actuation and wireless communication functions, particularly with the advent of Internet of Things (IoT)that is essential for monitoring several objects in applications such as smart cities, smart water networks, smart health care, smart power grids, smart farming and intelligent transport systems etc WSNs are continuously becoming important .Traditional networks often lack flexibility that brings into effect instant changes because of the rigidity of the network. It also depicts over dependency on proprietary services. SDN separates the control plane and the data plane, therefore moving the control logic to a central controller from the node. WSN is a very good platform for Low-Rate Wireless Personal Area Networks (LR-WPAN) with minimum resources and short communication ranges. Although the scale of WSN expands it faces many challenges, namely heterogeneous-node networks and network management. The approach of SDN seeks to alleviate most of the challenges and hence foster sustainability and efficiency in WSNs. The combination of SDN and WSN gives rise to a new prototype named as Software Defined Wireless Sensor Networks (SDWSN). The SDWSN model is therefore envisioned to play a vital role in the IoT paradigm. This paper presents a review of the SDWSN literature. Also it takes care of the challenges facing this paradigm.

Index Terms— Wireless sensor networks, Software defined networking, Software defined wireless sensor networks.

I. INTRODUCTION

WSN consist of micro-sensors capable of monitoring physical and environmental factors such as temperature, humidity, seismic events, vibrations, motions, etc. A sensor node typically consists of a power unit, sensing unit, radio and a processing unit. WSN consists of sensor nodes deployed in a structured or unstructured manner over a chosen area of interest. The sensor nodes are small, inexpensive, and intelligent. WSN's are usually not tethered to a power source as they require a minimum amount of energy which is usually supplied by integrated batteries. WSNs are very flexible in their applications but also put up a challenge due to their resource constrain and application specific architecture. The main defect of WSN is related to the resource limitations of the sensor hardware namely processing, memory, energy and communication capabilities, although they are widely used due to the increased number of embedded devices available making deployment easier. However, other issues associated with large-scale WSNs arise with the increased node deployment such as meeting the necessary QoS for satisfactory operation as node scale up to very large numbers. This is a very essential factor to consider especially in medical and industrial applications where quality and reliability are very crucial. Due to the rigidity of the network and the over dependency on proprietary services, traditional networks often lack the flexibility to bring into effect instant changes. A Wireless Sensor Network (WSN) is a great platform for Low-Rate Wireless Personal Area Networks (LR-WPAN) with little resources and short communication ranges. However, as the scale of WSN expands it faces several issues, such as network management and heterogeneous-node networks. In addition, these nodes will not only need to process data but also need to be flexible on variations. Therefore, the nodes must be reprogrammable during operations when other tasks need highest priority. The current vendor specific sensor nodes being used in WSNs are difficult to re-task when a new parameter is required to be sensed and reprogramming would require each sensor to be taken out and the embedded software reprogrammed in the sensor hardware. For large-scale WSNs this method would not be realistic. Vendors have come with the idea of Over The Air Programming (OTAP) techniques; however, the data sensing and packet forwarding protocols are still specific to the vendor. The SDN approach to WSNs seeks to alleviate most of the challenges and ultimately foster efficiency

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Smart Industry Based Environment Monitoring and Controlling System

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Abstract: - A smart city enables the effective utilization of resources and better quality of services to the citizens. To provide services such as air quality management, weather monitoring and automation of homes and buildings in a smart city, the basic parameters are temperature, humidity and Co and Light intensity, gas leakage. This project presents a customised design of an environment monitoring system to monitor temperature, humidity and CO and Light intensity, gas leakage. In this project we have used an ARM controller as main controlling unit, a Wi-Fi module to let know the condition of environment of particular area to the authorized user, sensors like gas sensor, temperature and humidity sensors for monitoring environment and light, motor and buzzer as output device who has to work according to the environmental conditions, decision about how the output devices has to work is took by the main controller unit.

Index Terms— Internet of things, smart city, ARM.

I. INTRODUCTION

The significance of condition checking is existed in numerous perspectives. The conditions are required to be observed to keep up the solid development in crops and to guarantee the protected workplace in enterprises, and so forth. Because of innovative development, the way toward perusing the ecological parameters ended up noticeably less demanding contrasted with the previous days. The sensors are the scaled down electronic gadgets used to quantify the physical and ecological parameters. By utilizing the sensors for checking the climate conditions, the outcomes will be exact and the whole framework will be speedier and less power expending. IoT empowers to be associated with for all intents and purposes boundless gadgets over the web. It in this way has an incredible capability of imparting and connecting with them. Condition observing is one of the real utilization of remote sensor network.WSN comprise of various sensors which are broadly dispersed to screen distinctive condition parameters like temperature, moistness, gasses, weight, wind speed and so on. The utilization of remote encompassing sensors can prompt more vitality productive structures. WSN comprises of sensor hubs which are ease gadgets with restricted power. This framework is utilized to quantify the imperative parameters of condition, for example, temperature, dampness, CO and CO2 utilizing sensors which are reasonable for detecting the natural parameters. The information gathered by condition parameter detecting sensor is transmitted to the cloud utilizing Wi-Fi innovation. The MCP3204 A/D converter is utilized to interface the sensors with ARM7 based LPC2138 microcontroller. In the event that temperature surpass above limit esteem then exhaust fan will automatically on and if gas spillage happens window on consequently, additionally buzzer on.

II. RELATED WORKS

An efficient environmental monitoring system is required to monitor and assess the conditions in case of exceeding the prescribed level of parameters (e.g., noise, CO and radiation levels). When the objects like environment equipped with sensor devices, microcontroller and various software applications becomes a self-protecting and self-monitoring environment and it is also called as smart environment. In such environment when some event occurs the alarm or LED alerts automatically. The main aim of this paper is to design and implement an efficient monitoring system through which the required parameters are monitored remotely using internet and the data gathered from the sensors are stored in the cloud and to project the estimated trend on the web browser [1]. Continuous monitoring of any sensitive environment helps to meet security and regulatory compliance needs. Monitoring temperature and/or humidity conditions is an essential ingredient of a wide range of quality assurance applications. Monitoring deterioration would provide an early warning of incipient problems enabling the planning and scheduling of maintenance programs, hence

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Smart Medication Box for Memory Disorder Patients

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Abstract: **- In stressful life people are prone to different types of diseases and accordingly varieties of medicine are increased. In ICU's of health care centers patients are monitored through experts and advanced machineries to give the proper treatment. But in general ward and at home continuous monitoring is not always be possible. Many of times patients are not able to remember their medication time without the active assistance of a caregiver. This restricts their ability to live independently. This paper describes the design and develops a smart medication box which reminds the patients to take proper medicine within stipulated time.**

Keywords: **- Arduino, caregiver, power jack, brace matching.**

I. INTRODUCTION

The progress in medical technologies is one of the main contributions for the ageing population [1]. Medication safety for the elders and especially to memory disorders is very important [2, 3, 4, and 5]. The elders need support from family members to take the proper medicines within time [6]. This project is useful for all types of patients and especially to memory disorders. In design of Smart Medication Box for Patients having mental disorder combination of Arduino controller based hardware and software is used [7, 8]. The project is provided with a Buzzer. The beeps of buzzer are indication of medication time of patient. That will help to remind to take the pills within stipulated time period [9, 10, 11, and 12]. In the medication box an APR used to play the recorded voice clips of instructions to the patients. With this box, people do not even to worry about how to manage their all medication time because this product have provided with a display clock as well as reminder to alert them about their medication time [13, 14, 15].

II. MATERIAL AND METHODS

2.1 System block diagram and working:

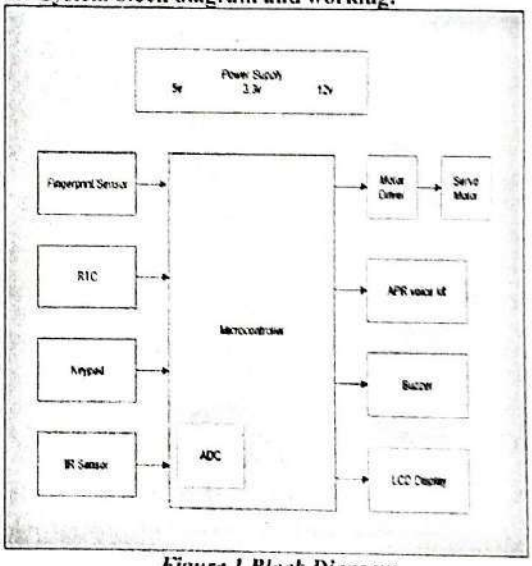

Figure 1 Block Diagram

Working:

The figure 1 shows smart medication box system uses Arduino Atmega 2560 microcontroller [16, 17]. In this system the fingerprint sensor, which is used for the authentication purpose, is interfaced to Arduino 2560 microcontroller. The user can activate the system with his finger. A real time clock is interfaced to the Arduino 2560 microcontroller which gives real time in hours,

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Performance of Microbial Fuel Cell with Clayware Wall Separation Subjected to Variation in Area of Separation, Permeability, Temperature

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Abstract- **Microbial fuel cells (MFCs) are devices that can be used to convert chemical energy stored in biodegradable materials into electrical energy. Sustainable energy recovery from organic wastes is gaining a research interest from last few years. The microbial fuel cell will be cost-effective technology if replace costlier proton exchange membrane with the cheapest alternative. Hence, the performance of MFCs was evaluated using soil partition as an alternative to proton exchange membrane. Performance of six microbial fuel cells (MFCs) was investigated in terms of current, columbic efficiency and chemical oxygen demand removal efficiency under the batch mode of operation using aerated distilled water as a cathodic electrolyte. Effect of permeability, a surface area of partition, ambient temperature variation and substrate concentration were evaluated. It was observed that current and coulombic efficiency increases with increase in surface area and permeability of partition wall. It was observed that ambient temperature plays the vital role in energy harvesting and treatment efficiency.**

***Index Terms*— MFC, Current, Voltage, Bio-energy, Waste water treatment, Alternative to PEM.**

I. INTRODUCTION

Microbial fuel cell (MFC) provides new opportunity for the sustainable production of energy from waste, in the form of direct electricity from biodegradable compounds present in the wastewater, achieving simultaneous wastewater treatment. MFC is a device that converts chemical energy associated with biodegradable organic matter to electrical energy with the aid of the catalytic reaction of microorganisms (Allen and Bennetto, 1993). In a MFC, substrate (organic matter or biomass) is oxidized in the anode chamber producing carbon dioxide, protons and electrons (Rabaey and Verstraete, 2005). Microorganisms here fulfill the role of catalysts in analogs to chemical fuel cells. In traditional MFC, substrate is oxidized by bacteria in the anode chamber, generating electrons and protons. According to principle of MFCs, protons from an anode chamber are allowed to flow to a cathode chamber through a proton-exchange membrane (PEM) with electrons going in the same direction via a conductive wire externally [Angenent et al., 2004]. The electrons, transferred to the cathode through external circuit, and the protons diffused through PEM in cathode chamber are combined with oxygen to form water. Oxygen is usually supplied by aeration in cathode chamber to act as oxidant. The possible reaction in cathode chamber using aerated water is shown below [Jang et al., 2004; Pham et al., 2003; Oh et al., 2004].

$$4H^+ + 4e^- + O2 \rightarrow 2H2O \qquad E^\circ = 1.23\ V \qquad (1)$$

Performance of a MFC is affected by the substrate conversion rate, over-potentials at the anode and at the cathode, the PEM performance, and internal resistance of the cell (Rabaey and Verstraete, 2005). The optimization of MFCs requires extensive exploration of the operating parameters that affect the power output. A sound body of literature supports the exploration of different parameters such as surface area of electrode, different materials as electrodes, use of special aerobic culture of Shewanella oneidensis DSP10 as the active electrochemical species in the anode chamber (Ringeisen et al., 2007), Geobacter sulfurreducens (Dumas et al., 2008), sedimentary bacterium (Zhang et al., 2006); spatial arrangement of effluent with respect to PEM (Jadhav and Ghangrekar, 2008); electrode distance (Ghangrekar and Shinde, 2007); cathode performance with different electron acceptor such as a permanganate, oxygen (Jadhav and Ghangrekar, 2008; You et al., 2006); and Hexacyanoferrate (You et al., 2006); cathode surface area and cathode mediator (Kim et al., 2007), etc. Most of the literature review supports performance of dual chamber MFC with proton exchange membrane partition. Microbial fuel cell will be cost effective technology, if replace costlier proton exchange membrane with cheapest alternative. The present study was aimed to investigate the effect of permeability of soil wall partition and surface area of partition on performance of MFC.

II. MATERIALS AND METHODS

2.1 Microbial fuel cells

Six dual-chambered MFCs were constructed using easily available plastic boxes. Total working volume of each anode and cathode chamber was 2400 ml. Soil wall partition of 2

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Comparative Analysis of R.C.C and Steel-Concrete Composite Residential Building Frame

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***Abstract*— Steel-concrete composite construction has gained large acceptance all over the world as a substitute for pure steel and pure concrete construction. However, this approach is a new concept in the construction industry. In this work we are creating the steel-concrete composite (G+10) frame using ETABS as an EIS-RC (encase I section column with RC beam), EIS-SB (encased I section with steel beam), CFT-RC (concrete filled square tube with RC beam), CFT-SB (concrete filled square tube with steel beam), CIS-SB (confined I section with steel beam), CIS-SB (confined I section with steel beam) and RCC frame. Static nonlinear pushover analysis is used for comparison of structures with the help of ETABS 2015 software. The majority of building frames are designed and constructed in reinforced concrete structures, depending upon the availability of constituent materials and the workmanship required in construction industry along with practicality of the existing design codes. Now a day to fulfill the demand of increasing population there is need of high rise building construction and today in India RC construction is popular to fulfill the demand of the construction industry.**

***Index Terms*— Composite construction, Dead load, Base shear, Displacement, Inter-storey drift, Etab software.**

I. INTRODUCTION

The majority of building frames are designed and constructed in reinforced concrete structures, depending upon the availability of constituent materials and the workmanship required in construction industry along with practicality of the existing design codes. Now a day to fulfill the demand of increasing population there is need of high rise building construction and today in India RC construction is popular to fulfill demand of construction industry. But since from last two decades construction industry experiences drastic changes due to increasing population demand, market condition, and availability of resources (men, money & material) etc. which results new techniques of construction are introduces in industry by inventors which give alternative solution to conventional construction. These are mix type or hybrid construction called as a composite construction, which are make efficient use of constituent material which can be most effective than conventional RC construction. The composite structures is the structures in which sections are made up of building different types of materials such as steel and concrete which are used for construction of beams, columns, slabs etc. Numbers of the studies are carried out on composite construction techniques by different researchers in different parts of the world and found it to be better earthquake resistant and more economical as compared to RCC construction. In composite or hybrid construction different types of sections are utilized as a encased or in filled sections.

Necessity of high rise Building :
There are many reasons to construct high rise buildings and these are as follows:

1. Rapid growth of population in urban communities, and therefore the constant pressure of the limited land area affected the evolution of building.
2. Expensive land prices.
3. Restriction of random expansion in major cities adjacent to agricultural land.
4. The high cost of setting up infrastructure for new cities.
5. Expression of progress and civilization
6. Other factors, such as terrain conditions or the lack of land area.

II. COMPOSITE FRAME ELEMENT

A composite member is constructed by combining concrete member and steel member so that they act as a single unit. As we know that concrete is strong in compression and weak in tension on the other side steel is strong in tension and weak in compression. The strength of concrete in compression is complemented by strength of steel tension which results in an efficient section. By the concept of this composite member the concrete and steel are utilized in well-organized manner

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Advancement in an Engineered Cementious Concrete

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***Abstract*— A review of representative research on the behavior of PVA-ECC concrete under flexure and shear action. Concrete is most widely used material but its brittle behavior is one of the most serious problem. This problem can be overcome by using ECC concrete which contains PVA fibers in place of course aggregates and fly ash replacing cement partially. The various materials which are to be used are ordinary Portland cement, fly ash, PVA fiber, Sand, Superplasticizer and water. Superplasticizer is to be used to control rheological properties of fresh concrete. PVA fiber are selected because they have strong bond with the concrete matrix, strain hardening property and provide pseudo-ductility to the concrete thereby increasing flexural and shear strength. The seismic disturbance to a structure can be partially stabilized with the help of ECC concrete.**

***Index Terms*— PVA fibre (Poly-vinyl Alcohol fibre), ECC (Engineered Cementious Concrete), fly ash, psuedo ductility, strain hardening.**

I. INTRODUCTION

Normal concrete has been widely used as construction material with the advantages of durability, resistance to fire, energy efficiency and on site fabrication. In constant, it has the disadvantages of low tensile strength, low ductility and inconsistent reliability due to variable applications skills of the job site. In addition to this, the brittle failure due to fast growing of single crack loading to sudden failure is one of the most disadvantages of conventional concrete. Engineered cementitious composites (ECCs) are cement mortar based fiber-reinThese composites are composed of cement, sand, water and small amount of admixture and optimal amount of fiber. ECCs have a tensile strain capacity of up to 6% and exhibit strain-hardening behavior.(5,19) Engineered cementitious composites (ECC) also known as "Bendable concrete", developed in last decade may contribute to safer, more durable and sustainable concrete infra structure that is cost- effective and constructed with conventional construction equipment. With 2% by volume of short fiber, ECC has been prepared in ready-mix plants transported to construction plant using conventional ready-mix trucks. Furthermore, the most expensive component of the composite fiber, is minimized resulting in ECC that is more acceptable to the highly cost sensitive construction industry. (3) ECC is ductile in nature. Under flexure, normal concrete fracture in brittle manner.(17) In constant, very high curvature can be achieved for ECC at increasingly higher loads, much like a ductile metal plate yielding. Extensive in elastic deformation in ECC achieved via multiple micro-cracks, with widths limited below 60μm (about half the diameter of human hair).This is elastic deformation, although different from dislocation movement, is analogous to plastic strange in ductile metal. Necessity of ECC for structural applications:-In the preparation of ECC 2% or less by volume of discontinuous fiber is adequate. Because of relatively small amount of fibers & its chopped nature the mixing process of ECC is similar to that of mixing in conventional concrete.

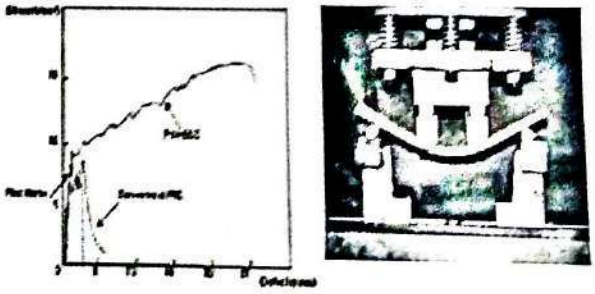

Figure 1 Behaviour of PVA-ECC concrete

The analysis of structure is to be done by using PVA-ECC concrete. The PVA ECC is used to enhance the resisting capacity of concrete against above forces. The various tests are approved to study the behavior of the structure against the above noted forces using a PVA-ECC Concrete. We shall study these tests in further analysis.

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Retrofitting of Existing Structure with CFRP by using Pushover Analysis

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***Abstract*— The seismic evaluation of existing building is the strengthening of building for pre earthquake or post-earthquake. Strengthening is required to increase capacity of structure to resist specific demand of earthquake. Strengthening may be carried out in existing seismically deficient building or earthquake damaged building.Seismic evaluation and retrofitting are undertaken for the life -line building, such as hospital, police station, fire station, major administrative building, school, educational building, historical monument etc.. Mostly the strengthening of existing building carried by two ways i.e. jacketing and Carbon fiber reinforced polymer(CFRP).The aim of this paper to evaluate the response of existing building by using linear analysis and nonlinear analysis. The analysis was carried out on existing building which G+3 located in Pune (Seismic zone III) by SAP2000 with help of guidelines following code I.S 1893:2002 (Part I), FEMA356, ATC 40.Based on the result of analysis the capacity of existing building for the given demand earthquake .study and the structure was not achieved the specific demand of earthquake, strengthening of existing was carried out by using CFRP. The comparison of existing building with and without FRP was carried out ,It was observed that with retrofitting that building result which based on pushover curve, hinge formation pattern, and inter storey drift ratio formation was within limit.**

***Index Terms*— Carbon fiber reinforced polymer (CFRP), Linear analysis, Nonlinear analysis, Retrofitting.**

I. INTRODUCTION

Many of the existing building are lacking in adequate earthquake resistance because these are not designed according to modern codes and prevalent earthquake resistance practice. Also many building that are damaged in earthquake may need not only repaired but also upgraded of their strength in order to make them seismically resistant. The aim of seismic evaluation is to assess the possible seismic response of building, which may be seismically deficient or earthquake damaged, for its possible future use. The evaluations are also helpful for adopting the retrofitting of structure. Seismic evaluations of building mean the strengthening of building pre earthquake or post-earthquake. Strengthening required because of due changes zone of area, depending on soil behavior. The aim of this paper to strengthening or retrofitting of existing building. Strengthening means increase the seismic resistance of building beyond its pre earthquake state. Strengthening may be carried out in existing seismically deficient building or earthquake damaged building. And also reconstruction or renewal of any part of an existing building to provide better structural capacity. The essence of virtually all seismic evaluation procedures is a comparison between capacity curve and demand curve. To get minimum damage and less psychological fear in the mind of people during the earthquake, IS 1893: 2002 permits maximum inter-storey drifts as 0.004 times the storey height. Inter-storey drifts always depend upon the stiffness of the respective storey. The capacity of structure to resist seismic demand is a property known as ductility. It is the ability to deform to beyond initial yielding without failing abruptly.

A. Necessity of seismic evaluation

1. The building may not have been designed and detailed to resist seismic force.
2. Earthquake vulnerable building that have not experience to sever earthquake building
3. Lack of timely revisions of codes of practice and standards, seismic zone map of country and construction technique.
4. Building designed to meet modern seismic code but deficiencies exist in design or construction.
5. Essential building strengthens like hospital, historical monument and architectural building. Important building whose services is assumed to be essential even just after an earthquake.

II. FIBER REINFORCED POLYMER

FRPs have been used in the automotive and aerospace industries for more than 50 years, in applications where their high strength and light weight can be used to greatest advantage. The fiber reinforced (FRP) composite are useful for repair, rehabilitation and retrofit of structure because High strength-to-weight ratios, Outstanding durability in a

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Review on Free Piston Engine

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***Abstract*— The research of the Free-Piston Engine is taking up pace since the last two decades mainly carried by the Dutch companies NOAX and the Innas. The research in free piston engines has recently concentrated on hydraulic versions but some development in electric version has also been reported. This seminar mainly discusses the case study of the CHIRON (Pronunciation ky'-Rahn) Free Piston Engine, which is a hydraulic free piston engine developed by the Dutch companies Innas, and NOAX. CHIRON in the Greek mythology was a Centaur: neither a horse nor a man but a synthesis of a man and a horse. Similarly, the CHIRON discussed in this paper is neither an engine nor a pump: it is a combination – or better – an integration of an engine and a pump. In CHIRON the combustion energy is directly converted into Hydraulic energy. The CHIRON features direct electronic control of the injection parameters, the flow, and the compression ratio. The flow output is controlled by means of Pulse Pause Modulation of the piston frequency. The CHIRON is designed for the common pressure rail systems. In these systems, the hydraulic energy is supplied through a common rail. Special attention will be paid specific characteristics of the CHIRON compared to conventional engines and pumps.**

***Index Terms*— Piston, combustion cylinder.**

I. INTRODUCTION

Complexity is never a goal in designing a new product. Products are designed to have low fuel consumption and reduced emissions and most importantly to satisfycustomers. Yet, the products are complex though the simpler solutions are feasible A good example is the motor pump combination one can find on site machines. In these machines, the energy of the combustion process is converted in to mechanical energy by means of a piston. On the other side, the mechanical energy is converted in to hydraulic energy by translating piston. If we are able to connect the combustion piston directly to the hydraulic piston, then we can eliminate all mechanisms in between. This would then result in the 'free piston engine'. However, the currently the engine and pump are defined as two separate machines, both having rotating shaft to connect one machine to the other. This problem arises due to the reasons that the hydraulic industry is relatively young and when hydraulic motors and pumps arrived in the market, the crankshaft engine, mechanical drives and the electric motor had already defined a quasi standard; the rotating shaft.

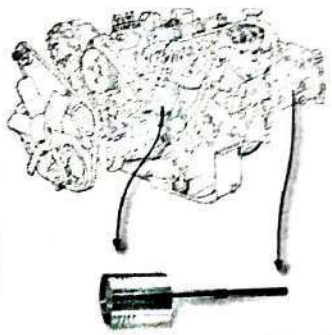

Figure: Free Piston Combination of Combustion Piston and Hydraulic Plunger

The hydraulic industry had to adapt to this 'standard', especially since in most cases the hydraulic systems were seen as an accessory, leaving the main drive functions to gears, chains and belts. Furthermore, the diesel engine was already produced in large quantities and there was no reason to construct a new engine for the small beginning hydraulic market.Nevertheless, many attempts have been made to design and built a combination of an engine and a pump without the mechanical complexity of piston rods and crankshafts. Since the combination of the combustion piston and the hydraulic plunger is not connected to a mechanism, and the combined piston has the degree of freedom in the axial direction, these machines are called as the 'free piston engines'.

1.1. Free Piston Engine vs. Conventional Engine

Reasons, why there are research and development activities

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Stress Analysis of V-Stirrer Blade Made For Conical Agitation for MDF

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***Abstract*— This work gives approach for performing stress analysis of an agitator of a large mixing vessel used in pulping process plant. The analysis is carried out to estimate stress and deflection in agitator body. The agitator is subjected to vibration due to multi-axial forces resulting from bending and torsional loading imposed by the mixing operation. The approach followed in this work involves Stress analysis of agitator blade for unit displacement using FE method. The work also discusses an alternative approach for estimating stress amplitude variation through dynamic stress analysis. Research work gives solution for developing the agitator with V shaped weldment which is made by using weldment techniques. Agitator looks V shaped from Front view and circular hub is designed to hold the structure of agitator. Project gives result and validation on the basis of software tool as well as mathematical tool. This proves the strength in designed agitator. Along with agitation process of pulping stirrer is also considered which is mounted on top of the agitator hub.**

***Index Terms*— Agitator, Ansys, Deformation, Hub, Pulp, Stresses, Stirrer, weldment.**

I. INTRODUCTION

Agitation is the process to induce motion of material in a specified way. In the chemical and other processing industries, many operations are dependent to a great extent on effective agitation and mixing of fluids. Mixing is one of the most widely used unit operations in the chemical and allied industries. Generally, agitation refers to forcing a fluid by agitator means to flow in a circulatory or other pattern inside a vessel. In spite that agitator is very effective in industry today but still has many problems which affect the agitation process.

II. NECESSITY OF CONICAL AGITATOR

In fiberboards manufacturing plant glue binders are added with sawdust in a cylindrical vessel and mixed together by the use of an agitator. When process is stopped for some time may be one or two days so residual mixture remains at the bottom of the vessel even after empting. This gets hardened over a period of time and needs to be cleaned every time which is tedious and laborious process. To overcome this difficulty bottom of the vessel can be made of conical shape instead of cylindrical. In conical vessel material gets sloping surface to flow down. This results in redesigning of agitator blades to suit the shape of the vessel. So in this project agitator blade can be designed.

III. OBJECTIVES

Main objectives in this Paper are as follows:

1. To design compact and vertical mount conical cabinet agitating device.
2. To perform the analytical design and software validation for blade mechanism which is withstand with the boundary conditions of the working system.

IV. ANALYTICAL CALCULATION

A) Downward force of pulp acting on blade

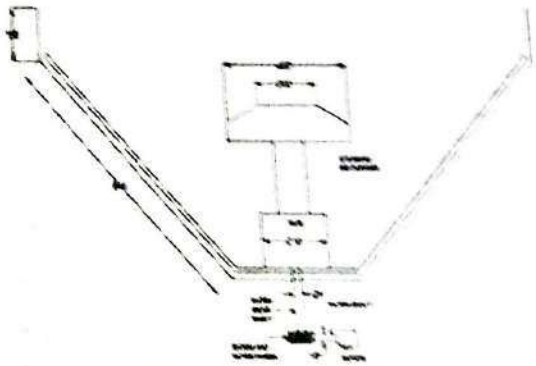

Fig 4.1: Layout of an agitation setup

Weight of total stirring assembly = 546.06 N
Weight of blade assembly, W = 423.31 N
Weight of pulp = 9195.13 N
Downward force of pulp = $V \times \rho \times g$ = 745.32 N

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Research paper

Shared intelligent optimum route selection through traffic management system in VANET– SIRS

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Abstract

A Vehicular Ad-hoc Network (VANET) consists of the vehicle to vehicle and vehicle to roadside communication. Growing the density of the vehicles on the road causes flooding while transferring packets from a source to one or multiple destinations over a VANET. However, increasing vehicles on road may causes a problem such as redundancy, congestion, collision and increasing delay though receiving emergency warnings. As long as reliable and proficient multi-hop broadcast in vehicular ad hoc networks is challenging one. In the proposed system commence a new protocol which uses the character of elegant route establishment and selection method for transfer information to the destination (dst) with minimum redundancy, delay and highest bits per second delivery. In some environment vehicles are deployed in a dense manner, and it can move at a high speed. Adjacent Access Points (APs) on the road find out route information from their past report gatherings which use a fuzzy logic to select routing conclusion. This approach consists of isolating the whole network area into clusters. Based on which an optimized route is chosen using the input parameters as vehicle density, distance from the adjacent AP, vehicle mobility, receiving signal strength and delay should be jointly measured in the relay node selection. Though, these computation conflicts with each other depend on vehicle mobility. Hence, we employ fuzzy logic to handle this imprecise information to select forwarding vehicles by mutually taking into account of vehicle distance (d), mobility (v) and Receiving Signal Strength (RSS). The selected vehicle can provide an assure data forwarding with a high competence. The performance of the proposed scheme is evaluated on the metrics such as end-to-end delay, packet delivery ratio by varying vehicle speed, and density of vehicles.

Keywords: Fuzzy Optimized Forward Node Selection; Performance evaluation; Routing; Redundancy; Vehicular Sensor Networks (VSNs).

1. Introduction

Information sharing is essential everywhere including vehicles on the road. One of the problems so far addressed is how to resolve the possible fitness of vehicles most likely to convey in the shortest time. To optimize the traffic and to preserve human lives, vehicles need to exchange information on road regarding traffic conditions. The essential condition for the broadcasting of this information should deliver to the destination as soon as possible which provides massive benefits for road safety, publics comfort and traffic effectiveness. The traveler in the vehicles has information as regards the outside situation relating to the parameters such as the density of traffic, current location, and the map of the sites to be visited, the amount
of fumes outside the vehicles. Due to the high density of the road, vehicle movements and fading of wireless communication provides a reliable and capable multi-hop broadcast in VANET is still a challenging topic. Road traffic information used to select the optimized route, however because of the frequent changes in mobility, incorrect route can computed. Increase in the traffic density of road mainly in urban area, it would be a sturdy problem to route the packets because of congestion. Thus, there is an optimized way, which is adaptive with respect to the topological changes due to the rapid speed of the vehicle thus it generates alert warnings.
Observation of the above-mentioned disputes in the VANET's; proposed a shared intelligent optimum routing strategy that can help the rescue actions (a). In the proposed approach, a shared intelligent knowledge observes from its environment and finds the vehicle density and distance from Road Side Units (RSUs). These observations are shared with the adjacent vehicles in a broadcast method. The selection of a route depends upon the consideration of the inter-vehicle distance(d), vehicle mobility(v) and Receiving Signal Strength (RSS) should be together measured in the next hop node selection from the destination in that area. This model considers Vehicle to Infrastructure (V2I) and Vehicle to Vehicle (V2V) communication. Though, this consideration value difference with each vehicle depends on mobility, and wireless channel fading condition. Best next hop selection is complex to obtain and choose result with variance values would be an expensive one. Therefore, proposed design uses fuzzy logic to handle these unsure values. Proposed system use a fuzzy logic to select next hop nodes by mutually considering d, v and RSS. The selected next hop vehicle can provide a reliable data forwarding with a high efficiency.
This paper is organized as segment II confer related work of VANET. Segment III explains the environment preface to know the proposed concept. Segment IV presents the network formation with a problem statement. Segment V describes the proposed approach and the algorithm. The simulation results with discussion are presented in Section VI. Finally, Section VII concludes this paper with directions for future work.

A Survey on: Load Balancing and De-Duplication in Cloud Computing

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ABSTRACT

Now days, cloud computing is very important in the Information Technology. Cloud computing enables access to a shared pool of configurable computing resources like servers, storage and applications, etc. The storage services provided to users are though internet. Load balancing is being an important task for doing operations in cloud. And so as de-duplication also. As cloud computing has been growing and many clients all over the world are demanding more services and better results, so load balancing is necessary. Load balancing assure efficient resource utilization to customers on their demand and build up the overall performance of cloud. Every increasing volume of back up data in cloud storage may be a vital challenge. De-duplication for eliminating the duplicate data. Many algorithms have been developed for allocating client's requests to available remote nodes. The key idea behind this paper is to develop a dynamic load balancing algorithm based on de-duplication to balance the load across the storage nodes during the expansion of private cloud storage.

Keyword: - *Cloud Computing, Load balancing, Secure De-duplication, etc.*

1. INTRODUCTION

Cloud computing is an emerging on demand, internet based system. It provides variety of services over internet such as storage of data, software and hardware. "Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction". Due to rising costs, IT companies have started to externalize their IT services, which are maintained by specialized companies called service providers. This led to the emergence of cloud computing. Cloud Computing is a computing environment, where resources such as computing power, storage, network and software are abstracted and provided as services in a distributed network. This is a technology where the task is executed by sharing and using existing resources and applications of a distributed network environment.

2. LITERATURE SURVEY

Because of rise in the costs, IT companies have started to externalize their IT services, which are maintained by specialized companies called service providers. This has made the cloud computing come up. Cloud Computing is a computing environment, where resources such as computing power, storage, network and software are abstracted and provided as services in a distributed network. Cloud Computing is a technology where the job is executed by sharing and using existing resources and applications of a distributed network environment. The resources can be allocated and de-allocated with ease by the service provider. A huge number of users request services to the cloud, which is run like large internet. Various companies use cloud computing due exponential growth in users and their needs. There are cloud computing data-centers all over the world to make cloud computing feasible. Different cloud services such as pay-per-use scheme which are offered at a lower price without intervention of owner and manager of these services.

Cloud computing consist of several characteristics such as:

- On-demand- Cloud services are given on-demand. Users can get there tasks done when they want.
- Extensive Network Access- In cloud computing resources are scattered over a network .These resources are accessed through various mechanisms.

FacePattern: A New Technique for better Graphical Password

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ABSTRACT

This concept commencing of user producing of passwords without system being providing of hints to produce passwords, the examples of pure recall technique are Draw-A-Secret technique, Grid selection, and Passdoodle. Here, we discuss two types of picture password techniques: reproducing a drawing and repeating a selection Jermyn, et al. proposed a technique, called "Draw-a-secret (DAS)", which allows the user to draw their matchless password. A user is asked to draw a simple picture on a 2D grid using a stylus or mouse. A drawing can consist of one nonstop pen stroke or preferably several strokes separated by \pen-ups" that restart the next stroke in a different cell. The coordinates of the grids occupied by the picture are stored in the order of the drawing. During authentication, the user is requested to re-draw the image. If the drawing touches the same grids in the same sequence, then the user is authenticated. In this type of system the brute-force attack is possible and the impact of password length and stroke-count as a complexity property of the DAS scheme. Recall-based graphical password systems are occasionally referred to as draw metric systems because users recall and reproduce a secret drawing.

Keyword : - *Graphical Password, Input, Live Video, Observation, User Study.*

1. INTRODUCTION

FacePattern is a small system that can be easily transferred from computer to computer by a simple USB stick. Its purpose is to solve a problem that really bothers many people today when they have to choose from memorizing a lot of passwords to be secure or to use every time the same one so they won't forget it but risk be found out by others. So it provides you a very secure, encrypted database where you can keep inside all your passwords, usernames, email accounts, URLs, notes without any risk for others to find them. That is because FacePattern can lock every database with only one Master Password and/or key file. There are no duplicates, anywhere in your computer, of this Master Password and/or key file so in case of lost database cannot be opened by anyone. Not even by you and that is because there is no recovery password or back door. FacePattern beside security also provides you with several functionalities in order to keep your database organized and up to date.

2. OBJECTIVES

This document includes software requirements for FacePattern, release number 1.10. FacePattern is an OSI Certified Open Source Software distributed under the terms of the GNU General Public License Version 2 or under. The system gives resolution to memorizing passwords problem. Its purpose is to keep all of the users passwords, data, email accounts, usernames and URLs stored in a very secure, encrypted database, protected by a Master Password. The system is very small so it can be easily transferred from one computer to another. It provides several functionalities on the already encrypted data and the new ones to be inserted. The database produced, is protected by a Master Password only known by its inventor with no backup if lost.

3. SYSTEM ARCHITECTURE

Graphical authentication scheme was proposed by Dhamija and Perrig based on the Hash Visualization technique. In their system, the user is requested to choice a certain number of images from a set of random pictures generated by a program. We have designed the system which will help the person to access the system using the image system will allow the person to secure the important files. Various types of images, most particularly: faces, random art,

Color Code: A Model to Refuse the Shoulder Surfing Attack

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Abstract:- *For authentication users mainly use PIN entry mechanism. Traditional password-based authentication schemes are vulnerable to shoulder-sur ng attacks.But one of the drawback of this scheme is that it su ers from shoulder sur ng attack.An unauthorized user can fully or partially observe the login session in this attack. To get the actual PIN the attacker can record the activities of the login session and can use it later. In this paper,it propose an intelligent user interface, known as Color Pass to resist the shoulder sur ng attack so that any genuine user can enter the session PIN without disclosing the actual PIN. The Color Pass is based on a partially observable attacker model. The experimental analysis shows that the Color Pass interface is safe and easy to use even for novice users.*

Technical Keywords: Color PIN, Shoulder Surfing Attack, User Interface,Password, Partially Observable.

1.INTRODUCTION:

Now Day's most of the people used net banking,online transaction or ATM transaction.And uses of online transaction is increasing rapidly. This huge number of users consists of both genuine users and malicious users. So software applications which deal with sensitive, private and secret information, must provide a sound protection to the system so that genuine and malicious users can be identified properly.In computer security have a different types of authentication shcemes like password authentication captcha for identify the genuine user. Password based authentication is still one of the widely accepted solution for its ease of use and cost effectiveness.The typical PIN entry system is famous in world wide for easy usability.But it causes to shoulder surfing attack ,in which an attacker can record the login procedure of a user for an entire session and can retrieve the user original PIN.

Based on the information available to the attacker, secure login methods can be classified into two broad categoriesfully
observable and partially observable. In the first one, the attacker can fully observe the entire login procedure for a particular session and in the second one, the attacker can partially observe the login procedure. Our proposed methodology falls into second category and users are required to remember four colors instead of conventional four digit PINs.

The proposed Color Pass methodology implements onetime pass paradigm. Thus corresponding to four color PINs,the user gets four challenges and enters four responses with respect to each challenge. The main objective of Color Pass scheme is that it is easy to use and does not require any special erequisite knowledge. In addition to the resistance against shoulder surfing attack, it also provides equal password strength as compared with the conventional PIN entry scheme.

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Detection and Analysis of Network & Application Layer Attacks Using Honey Pot with System Security Features

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Abstract: ***Information security in the sense of private and social interactions has become a top priority in digitalized modern world in parallel to the new technological developments.Many approaches, tools, and expertise are used to provide the information security to the information systems.***

A honeypot is an active defense system for network security. It is able totraps attacks, record intrusion information about tools and activities of the hacking process, and prevents attacks outbound the compromised system. Integrated with the other security solutions, the honeypot is able to solve many traditional dilemmas. We expatiate key components of data capture and data control in a honeypot and give a classification for honeypot according to security goals and application goals. A honeypot is Java based deception tool having influential services (FTP etc.), it is a "Rule & Anomaly" based intrusion detection engine and a network-based administration and monitoring tool. This paper analysis the attack detector with existing system drawback which presents proposed approach more efficiently.

Additional system security features are also added based on accessing the system securely. Features like detection of an intruder based on the timestamp and log-in details are considered. Tracking of the user is based on the system log and other databases pre-defined for secure accessing.

Keywords: Network Security, Intrusion Detection System, Honeypot.

I. INTRODUCTION

A honeypot is a closely monitored and analysed computing resource that has a sole purpose to be intruded probed attacked or compromised. A honeypot is defined as "An information system resource whose value lies in the unauthorized or illegal use of that resource". A honeypot can capture every action by the intruder or attacker that is made inside the honeypot. A honeypot is able to create a log of access attempts by an intruder, capture the keystrokes, identify less accessed and modified files or folders, and identify the programs that are executed within the honeypot. If an intruder is unaware that he is inside a honeypot, we can even identify his motive behind the attack. Honeypots can be comfortably placed inside of the network, outside of the network and also inside DMZ (Demilitarized Zone). They can even be placed in all of the above locations. Honeypots are essential in learning how intruders and attackers probe and attempt to gain access to your systems. By learning and recording how intruders and attackers explore and manipulate the system to gain access, we can gain the perception of attack methodologies that helps us to protect our real production systems.

II. RELATED WORK

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Application Of Graphene Oxide Modified with 8-Hydroxyquinoline for Adsorption of Copper from Leachate

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ABSRTACT

In this paper the study is to find out adsorption capacity of copper from leachate by adsorption process using Graphene oxide and 8-hydroxyquinoline in Moshi kachra depot, Pune. As copper is one of the most toxic heavy metal usually found in environment. In leachate concentration of copper was exceeding limit that is discharging limit in natural streams is 3mg/lit by guidelines limit for wastewater effluent set by National Environmental standard and Regulation Enforcement Agency . The adsorbent material will be characterized by FTIR, XRD, XPS. The adsorption isotherms and kinetics of copper (Cu) onto adsorbent and the effect of temperature and ph on the removal efficiency will be thoroughly analyzed. Also breakthrough The maximum adsorption capacity will be 85-95 percent mg/lit. Therefore, these materials can be used as effective adsorbent for Cu-containing wastewaters

KEYWORDS — 8-hydroxyquinoline, graphene oxide, isotherm, kinetics, Cu

1. INTRODUCTION

Pimpri –Chinchwad, the twin city of Pune has a landfilling and waste dumping site, called PCMP Moshi Kachara Depot, it is spread over 45 acres. Organic and inorganic waste is dumped at this site. Residents from those areas were agitating day in and day out to have the dumping ground remove from its place. Now BVG India Ltd was given responsibility to manage the PCMC Moshi Kachara Depot in 2011 and changed the entire scenario that existed for over 50 years. BVG emptied the entire area and processed the garbage.60 to 70%garbage was organic waste, the remaining 30 to 40% was plastic, metal, and glass. Everyday approximately 800 tons of garbage is collected and brought to dumping ground. Earlier, the entire 800 tons of garbage was sent to landfill. Today only 100 to 125 tons of garbage is processed. The generation of leachate is decomposing solid waste, the percolating water becomes contaminated and flows out of waste material. As liquid moves through the landfill many organic and inorganic compounds, like heavy metals are transported in leachates. This leachates consists of heavy metal such as copper(Cu), nickel(Ni), lead(Pb), mercury(Hg), chromium (Cr) and zinc(Zn), iron(Fe). However copper is a common hazardous pollutant in water and wastewater and it is often released from several sources of industries like metal finishing processes, fertilizer, tannery

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Implementation of MATLAB Based Self-Healing Grid using Prims Algorithm

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Abstract: The MATLAB based self-healing grid system using Prims algorithm is proposed to be used in budding nations like India, Bangladesh, and Pakistan where there is un availability of automatic switchover of electricity user node when electricity link failure is occurred. This causes the labor inefficiencies due to power failure in industrial area and minor load shading problem in residential area. To handle such type of situation some practices had been taken into account to minimize the effect of grid failing.To overcome this problem of grid failing, here we proposed one system algorithm which basically works on the principle of redistributing the power flow of contingency transmission line to other lines with Flow Control Relay. To implement the control strategy, The Minimum Spanning tree network and Prims analysis method instead of the iteration algorithm and optimization method, is applied to redistribute the power flow. The MATLAB is used to support in simulation and Prims algorithm used to handle the overall performance and the recovery time of the system.

Keywords: Minimum Spanning Tree, Prims algorithm, MATLAB (Matrix Laboratory), Arduino.

I. INTRODUCTION

In rapidly growing countries like India there are no significant changes in electricity gridding system since independence. Like today there is manual handover of electricity system user to another station as no optimized gridding algorithm is present. So this proposed system is design which controls the quality for the development section according to their link weight by using algorithmic solution with the help of MATLAB. Here we estimate the Minimum Spanning Tree network for taking link status and applying the Prims algorithm for that station and get result in accordance to optimized the quality of gridding connection. The proposed work uses the simple and efficient Prims algorithm for self-healing the node when any electricity line or power supply down. This project proposed to simulate and implement the self-healing grid having the 5 nodes that act as the functional user of electricity and 2 power sources that act as the power plant or power distribution center and the relay that control or restore the fails node for restoration. By considering the above parameter we can draw the following diagram for the simulation or the implementation of MATLAB. Here, the rectangle represents the power supply (Power plant, Electricity distribution center) that connects the multiple node of the circle representing active user of the electricity and arrow represents the switches that connects the multiple power supply to user node that used if the power supply is breakdown in any case.

A. MATLAB Section

In this MATLAB section, nodes are connected to each other using the links present in above figure. Nodes are powered through the 2-power supply that is represented by the 'PS1' and 'PS2' in the above figure. If the one link failed due to some natural or manmade crisis, then this system is designed to recover the failed node which is connected to failed link.

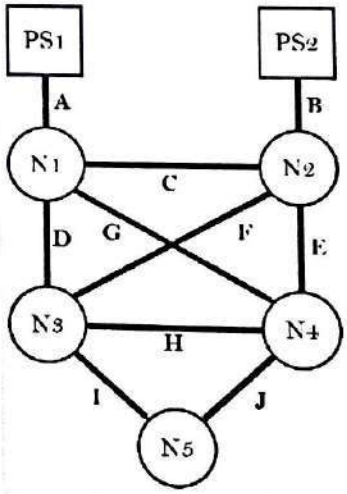

Fig.1. Basic block diagram of the Automatic Grid Healing System

Such that the cost of developing spanning tree should have the minimum cost when prims is calculated. If the N2 in the given figure failed, then node connected to that node to downward also fail due to no electricity reached to that node not because of the link failure. That should take into account to effectively recover the failed node. So, that system gone through the prism algorithm that calculate the system failure recovery capability that could enhance

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An Efficient Data Hiding in Digital Colour Image by Sparse Representation

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ABSTRACT: Steganography is one form of cryptography where we hide data within images. Reversible data hiding is a form of steganography in which we hide data within images, audio, video form. In reversible data hiding the original cover can be recovered without loss after the embedded messages are extracted. The project proposes the improvement of security system for secret data communication through multi plane image data embedding in Colour images or gray-scale images. A given input image is converted to any one plane of RGB colour image. After completion of plane separation, the secret data will hide into the image pixels. The data hiding technique uses the LSB algorithm for hiding the secret message bits into the input cover image. In the data extraction, the secret data will be extracted by using relevant key for choosing the image pixels STEGO image to get the information about the data. The performance of this technique in Colour Image and data hiding will be analysed based on image and data. This paper presents a result of LSB method with sparse representation and chaos algorithm. Another RDH technique, histogram shifting is compared with LSB method, both methods displays result with sparse representation.

KEYWORDS: RDH, LSB, chaos algorithm, Sparse representation, Histogram Shifting.

I.INTRODUCTION

Data hiding is a technique used to put a secret data in a host media like images with small changes in host. In most of the data hiding techniques the cover image becomes distorted due to data hiding process and it cannot be retrieved back to the original form. Thus the cover media due to the data embedding. In some applications, such as medical applications and military applications, recovery of the original cover image without any damage is a must, since these images have too process further. The process of recovering the cover or host image without any damage after the secret data extraction is known as reversible data hiding. LSB technique is supported by manipulating the least-significant-bit (LSB) planes by directly substituting the LSBs of the cover-image with the secret message bits. LSB method achieve high capacity. Now a day's advancement in computer networks, signal processing and digital multimedia are spread widely through the internet. This causes security issues of exposing transmitted digital data on the network with high risk of being copied or intercepted illegally. In order to safeguard the privacy of data, various data hiding techniques have been proposed to encrypt the data before data transmission.

II.SYSTEM MODEL AND ASSUMPTIONS

An efficient data hiding in digital colour image by sparse representation uses the following aspects:

1) Sparse representation
2) Chaos encryption
3) Embedding using LSB
4) Histogram Shifting

This proposed method is based on the LSB substitution. Here input image is 24-bit colour image. We can take any format of the image like BMP, GIF, JPEG, and PNG. We use colour image so next part is to separate the R, G, and B plane with each of 8-bit plane. After plane separation the sparse coding is applied to each plane of the RGB image. The secret data is hidden in each R, G and B plane in same manner.

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Design Modeling and Experimentation of Linear Motion Transducer by Using Flexural Bearing.

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***Abstract*— The availability and wide range of applications of low cost sensors have encouraged a demand for improved sensor performance. Smart sensors are becoming integral parts of system and are performing the functions that previously could not be performed. Displacement can be measured by using precise measuring instruments such as LVDT, laser instruments which offers high speed, high resolution and highly accurate laser sensors (non-contact linear position sensor) for measuring displacement and position. But all these instruments are very costly and require high maintenance and they are very complex in design. So there is need to develop a system which gives high accuracy as that of existing measuring instruments and should also have low manufacturing and running cost. Proposed system consists of unique design of flexural bearing which is highly sensitive to axial movement. Deflection of bearing is recorded by the strain gauges in the form of resistance. This resistance is converted into the voltage form using strain gauge module. This voltage is given to ARDUINO microcontroller and using MATLAB program the results are generated.**

***Index Terms*— Flexural bearing, FEA, Strain gauge, MATLAB, ARDUINO.**

I. INTRODUCTION

THE flexure hinge is a mechanical member that substitutes a conventional rotational joint in order to produce a limited angular motion about one axis. Flexural mechanisms are colossal structures which provide desired motion with the help of flexural hinges. Due to their smooth operation flexural joints have little friction losses and also does not require lubrication. They generate smooth and continuous displacement without backlash. Flexure jointed mechanism have been widely utilized in precision instruments such as watches & clocks for hundreds of years, and continued to be used today in applications such as optical systems, micro robots, and clean room equipment.

Metal rollers meet the meaning of a requirement entirely well, since they are firm in one heading, and give low imperviousness to movement in different bearings. By the by, movement toward DOF is connected with undesirable impacts, for example, erosion, stiction and backfire that ordinarily emerge at the interface of two surfaces. These impacts are non-deterministic in nature, and breaking point the movement quality.

A. Flexural mechanism and significance

Flexure direction has the point of preference over most different heading that they are straightforward and therefore reasonable. They are likewise regularly smaller, lightweight, have low contact, and are less demanding to repair without particular gear. Flexure direction has the impediments that the scope of movement is restricted, and frequently exceptionally constrained for orientation that bolster high loads. Flexure course can give low erosion furthermore give extremely unsurprising rubbing. Numerous different heading depend on sliding or moving movements, which are fundamentally uneven in light of the fact that the bearing surfaces are never consummately level. A flexure bearing works by bowing of materials, which causes movement at tiny level, so grinding is extremely uniform. Consequently, flexure direction is regularly utilized as a part of touchy accuracy measuring hardware.

Flexure jointed instrument have been generally used On precision instruments for example, such that watches & tickers to hundreds about years,, and continued to be used today in applications such as optical systems, micro robots.

B. Types of flexural

a) Flexural Hinge

Flexure hinges hold several advantages over classical rotational joints, including

a. No friction losses
b. No need for lubrication
c. No hysteresis
d. No clearance
e. No wear.
f. Low stiffness (bending, torsion)
g. limited movement

Applications:- micro and nano-scale mechanisms in precision engineering.

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Analysis of Material Wastage & Time Overruns in Construction Project Using Descriptive & Inferential Statistics

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ABSTRACT: The history of the construction industry worldwide is full of project that were complete significant time and cost overruns in an attempt to rivers this trend ,this study aims at established relation between time overrun and labour productity on construction site in India both description inferential stastics were used in analysing the data result indicate that inadequate fund for the project .Inadequate planning before project takeoff ,inadequate tools and equipment and delay in delivery material .The list of the major causes of time overrun while the use of wrong construction method ,inadequate construction material and inaccurate drawing specification are the key factor causing low labor productivity construction site. Significant negative relationship found between time overrun and labour productivity at construction site. The study concluded by recommending that early appointment of the project manager could ensure proper management of both human and material resources that could guarantee improved productivity and ultimately save project from time overcome.

Environmental problem have been considered as a serious situation at the construction waste management is pressing harder with the alarming signal warning the industry. Reused recycle and reproduce waste considered as the only method to recover those waste generated how where the implementation steel have much room for improvement .This paper review the technology on construction waste recycling and there viability .Ten material recycling practices are study including .i)Asphalt ii) Brick ,iii)Concrete ,iv)ferrous metal ,v)glass ,vi)masonry ,vii)non-ferrous metal, viii)paper and card board ,ix)plastic and x)timber. The viable technology of the construction material recycling should be providing an easy reference for future application.

KEYWORDS: Construction & Demolition Waste Material, Case Study on Construction & Demolition Waste Recycling in pune.

I. INTRODUCTION

Since 1993, the year when Oslo Peace Accords have been signed in Norway, Palestinian occupied territories have undergone a rapid pace of reconstruction of infrastructure which had been demolished through thirty years of occupation. In spite of lack of resources and technologies, hundreds of infrastructure, residential, and governmental projects were implemented (MAP Overview 2002). The successful execution of construction projects and keeping them within estimated cost and prescribed schedules depend on a methodology that requires sound engineering judgment. To the dislike of owners, contractors and consultants, however, many projects experience extensive delays and thereby exceed initial time and cost estimates. This problem is more evident in the traditional or adversarial type of contracts in which the contract is awarded to the lowest bidder- the awarding strategy of the majority of public projects in developing countries including Western Maharashtra Strip. Although the construction industry in the Middle East has suffered ever since the Gulf war, recent events in the region coupled with the restructuring of economies, joining

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