3.3.1

Research Publications During Assessment Period: 2018-2022

Bapatla Women's Engineering College

Bapatla -522101. Guntur(Dt.), A.P.

(Sponsored by The Bapatla Education Society)

Approved by AICTE- New Delhi, Affiliated to Acharya Nagarjuna University

An ISO 9001:2015 Certified Institution

(ESTD.2009)

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List of Research Publications During Assessment Period 2018-2022

S.NO.	Title of paper	Name of the author/s	Name of Journal
1	Low mutual coupling with dual-element MIMO system for sub-6 GHz 5G and WLAN applications	Kalyani Gumma	International Journal of Advance Research, Ideas and Innovations in Technology
2	Design and Implementation of IoT Based Smart Health Monitoring System for Diabetic Patients Using Wireless Sensor Networks	Maha Lakshmi B	International Journal of Information Technology (IJIT)
3	A System and Method for Human Eye Detection using Image Processing in MATLAB	Suneetha Emmela	Quest Journals Journal of Electronics and Communication Engineering Research
4	Power Generation using Piezoelectric Effect	Suneetha Emmela	Quest Journals Journal of Electronics and Communication Engineering Research
5	IOT Based Vehicle Parking Place Detection	R.Lavanya	Quest Journals Journal of Electronics and Communication Engineering Research
6	Automatic Face Mask Detection and Temperature Scan Entry System	R Lavanya	IOSR Journal of Electronics and Communication Engineering(IOSR-JECE)
7	Design of Chessborad Using ARM 7	Bondalapati Siva Kumari	International Journal of Information Technology
8	Design of Wallace Tree Multiplier Using 15:4 Compressor In Terms of Power	Kolati Srilatha	International Journal of Research and Analytical Reviews
9	Design and Parametric Evaluation of Kogge Stone Adder Using CMOS Logic and PTL interms of Delay and Area	Kolati Srilatha	International Journal of Research and Analytical Reviews

10	Prevention of Over Heating of Electronic Devices using IoT Based Temperature Controlled Fan	Emmela Sumalatha	Quest Journals Journal of Electronics and Communication Engineering Research
11	Hybrid and Direct Logic Full Adder based Comparator using Microwind	Mathi Bhavani	International Journal of Advances in Engineering & Technology
12	Design and Implementation of Wallace Tree Multiplier Using Parallel Prefix Adders	Mathi Bhavani	.International Journal of Innovative Research in Technology
13	Smart Door Lock System using IoT	A V Mutyalamma	IOSR Journal of Electronics and communication Engineering(IOSR-JECE)
14	IoT Based on Plants Monitoring System Using NODEMCU	Turaka Sowmya	Quest Journals Journal of Electronics and Communication Engineering Research
15	'Role Of Reducing Agent In Nano Particle Syntheses'	O.Sreedevi	An International Advanced Research Journal in Science, Engineering and Technology
16	'Determination Of Xrd In Advanced Nanomaterials'	O.Sreedevi	An International Advanced Research Journal in Science, Engineering and Technology
17	'Determination Of Wide Band Gap In Advanced Materials'	O.Sreedevi	An International Journal of Innovative Research in Electrical, Electronics, Instrumentation and Control Engineering
18	'Determination Of Narrow Band Gap In Advanced Materials'	O.Sreedevi	An International Journal of Innovative Research in Electrical, Electronics, Instrumentation and Control Engineering
19	"DC-DC converter in microgrid for voltage regulation and ripple reduction using Electric Spring technology"	P. Naga Lakshmi	International Journal of Power and Energy Systems
20	" ANFIS-GA based hybrid control method for enhancement of DC Microgrids using Electric Spring "	P. Naga Lakshmi	Mathematical Statistician and Engineering Applications
21	"Electric Spring based Voltage Control of DC Microgrids using Intelligent Controllers"	P. Naga Lakshmi	International Journal of Intelligent Systems and Applications in Engineering
22	Effective Insurance Claim Fraud Detection And Analysis Using SVM and ECM Algorithms	Mrs. G. Venkateswari	journal of engineering sciences(JES)

23	Effective Insurance Claim Fraud Detection And Analysis Using SVM and ECM Algorithms	Mrs. M. Anitha	journal of engineering sciences(JES)
24	lagenaria siceraria preparation based on activated carbon for adsorption of Cr(VI) from polluted water	Oguri Sreedevi	Journal of Coastal Life Medicine
25	Design of Single Precision Floating Point Arithmetic Logic Unit	M.Bhavani	International Journal of Engineering Research and Applications
26	An Effective Smote Approach for Detecting Fake and Clone OSMN Accounts	Venkateswari Gavini	The International Journal for Analytical and Experimental modal Analysis
27	An Effective Smote Approach for Detecting Fake and Clone OSMN Accounts	Anitha Meruga	The International Journal for Analytical and Experimental modal Analysis
28	Detection And Prevention of Wheel Unbalancing And Tire Burst In Moving Vehicles	Dr. Dipak Ranjan Jana	International Journal of Innovative Technology And Exploring Engineering
29	A System and method For Detection of Obstacles on Moving Vehicles on Either Side 360 degrees	Dr. Dipak Ranjan Jana	International Journal of Innovative Technology And Exploring Engineering
30	Generation of Electricity Using Hydrogen Fuel Cells	Dr. Dipak Ranjan Jana	International Journal of Emerging Trends in Engineering Research (IJETER)
31	Design and Implementation of N-Point FFT Processor For MIMO- OFDM systems using Radix-N	B. Mahalakshmi	International Journal of Engineering and Advanced Technology (IJEAT)
32	Accident Predeiction and Crash Recovery by using Car Black Box	B. Mahalakshmi	International Journal of Innovative Technology And Exploring Engineering(IJITEE)
33	A Novel Offset Feed Annular Ring Dielectric Resonator Antenna For Bandwidth Enhancement	G. Divya	International Journal of Engineering and Advanced Technology (IJEAT)
34	Bandwidth enhancement of Tri-based Rectangular Dielectric Resonator Antenna using Novel Offset feedfor WLAN/WIMAX Applications	G. Divya	International Journal of Innovative Technology And Exploring Engineering(IJITEE)
35	Intoxicated/Sleepy Driver Detection On A Moving Car	E. Suneetha	International Journal of Innovative Technology And Exploring Engineering(IJITEE)

36	Generation of Electricity Using Hydrogen Fuel Cells	E. Suneetha	International Journal of Emerging Trends in Engineering Research (IJETER)
37	Layout Designing of Less DelayFull Adder By exploring new XOR and XNOR gates using 32mm Technology in Verilog	K. Srilatha	International Research Journal of Engineering And Technology(IRJET)
38	Automated Elevator-an attentive elevator to elevate using Speech Recognition	K. Srilatha	International Research Journal of Engineering And Technology(IRJET)
39	Implimentation of Low Area And Less Delay of various Multipliers Using Verilog	K. Srilatha	International Research Journal of Engineering And Technology(IRJET)
40	The Design Of Ultra Wide Band Circular Monopole Antenna with triple band Notch Charactorstics	G. Kalyani	International Journal of Future Generation Communication And Networking(IJFGCN)
41	e-AGROBOT - A Robot For Early Crop Disease Detection Using Raspberry Pi	G. Kalyani	International Journal of Advanced Science And Technology- Sersc(IJAST)
42	Supervised Classification ofSatellite image Processing using Neural Networks	K. Srilatha	International Journal of Innovative Technology And Exploring Engineering(IJITEE)
43	Woman Safety System Using IoT	T. Sowmya	International Research Journal of Engineering And Technology(IRJET)
44	A System and method For Detection of Obstacles on Moving Vehicles on Either Side 360 degrees	T. Sowmya	International Journal of Innovative Technology And Exploring Engineering
45	Remote Health Monitoring, Home Automation And Alaram System Using Raspberry Pi	R. Lavanya	International Research Journal of Engineering And Technology(IRJET)
46	Automatic Wireless Monitoring and Controlling of greenhouse using Multiple sensors	R. Lavanya	International Journal of Recent Technology and engineering (IJRTE)
47	Generation of Electricity Using Hydrogen Fuel Cells	Emmela Sumalatha	International Journal of Emerging Trends in Engineering Research (IJETER)
48	Detection And Prevention of Wheel Unbalancing And Tire Burst In Moving Vehicles	Emmela Sumalatha	International Journal of Innovative Technology And Exploring Engineering
49	Accident Detection And Elegant Rescue System Using Android Time Location Tracking	E. Suneetha	International Journal of Innovative Technology And Exploring Engineering(IJITEE)

50	Implementation of D Flip Flop using CMOS technology	K. Srilatha	IJTSRD
51	Implementation of Smart restaurant with e-menu card	K. Srilatha	IJSER
52	Implementation of Smart restaurant with e-menu card	B. Siva Kumari	IJSER
53	Background Subtraction Method based smart Parking sysytem using image Processing	M. Bhavani	International Journal of Innovative Technology And Exploring Engineering(IJITEE)
54	Smart Agriculture to Measure Humidity, Temperature, Moisture, Ph. and Nutrient Values of the Soil using IoT	A.V. Mutyalamma	International Journal of Engineering and Advanced Technology (IJEAT)
55	Generation of Electricity Using Hydrogen Fuel Cells	A V Mutyalamma	International Journal of Emerging Trends in Engineering Research (IJETER)
56	Iot Based Gas Leakage Monitoring System Using Fpga	G.Krishna Veni	International Journal of Analytical and Experimental Model Analysis
57	Dual filter Based images Fusion algarithm for CT and MRI medical images	P. Maadhurya	Journal of Engineering Sciences(Jes)
58	A Novel extension of the classical contextual multi-armed bandit with BCTS algorithm for online leaning in online AI related systems	M.Anitha	Journal of Information and Computer Science
59	Adsorption Of Cr(VI) From Polluted Water Using Activated Carbon Prepared From Lagenaria Siceraria'	O.Sreedevi	International Journal of Advanced Science and Technology
60	"Load and Energy Aware Adaptive Zone Routing Protocol for MANET"	N.Kavitha	IJAST (Scopus Indexed and free Journal).
61	" Fuzzy based Scheduling and Load Balancing for Zone Routing Protocol (ZRP) in Mobile Ad Hoc Networks"	N.Kavitha	International Journal of Critical reviews
62	Attendance Analysis Using Rasberry PI and K-means	B.Haritha	Dogo Rangsang Research Journal
63	Data Deduplication Strategies in Cloud Computing	B.Haritha	International Journal of Innovative Science And Research Technology

64	Data Deduplication Strategies in Cloud Computing	Md.Jareena Begum	International Journal of Innovative Science And Research Technology
65	A Detail Machine Learning Analysis with Automated Clone Validation Integrated clone code detection System	G.Venkateswari	The International Journal for Analytical and Experimental modal Analysis
66	A Detail Machine Learning Analysis with Automated Clone Validation Integrated clone code detection System	Y.S.Krupamai	The International Journal for Analytical and Experimental modal Analysis
67	A Comprehensive Analysis On Industrial Networking Cyber Security Issues Based on LI-FI With Green Cloud Computing	Md.Jareena Begum	Journal Information and Computational Science
68	A Comprehensive Analysis On Industrial Networking Cyber Security Issues Based on LI-FI With Green Cloud Computing	Y.S.Krupamai	Journal Information and Computational Science
69	A Comprehensive Analysis On Industrial Networking Cyber Security Issues Based on LI-FI With Green Cloud Computing	M.Rishitha	Journal Information and Computational Science
70	An Efficient Study on Graduate Students academic Progress prediction in India using Machine Learning Methodologies	G.Venkateswari	Journalof Information and Computational Science
71	An Efficient Study on Graduate Students academic Progress prediction in India using Machine Learning Methodologies	I.Bhavana	Journalof Information and Computational Science
72	An Efficient Study on Graduate Students academic Progress prediction in India using Machine Learning Methodologies	B.Haritha	Journalof Information and Computational Science
73	Adsorption Of Cr(VI) From Polluted Water Using Activated Carbon Prepared From *Vinca roseApocynaceae'*	O.Sreedevi	An International Journal of Advanced Science and Technology
74	Design And Implementation Of Parallel FFT Processor ForLTE Systems Using Radix-2	B.Maha Lakshmi	International Journal of Management Technology and Engineering (IJMTE)
75	Implementation of Digital Power Saver	M. Bhavani	International Journal Of Engineering Techniques

76	Aperture Coupled Cylindrical DRA with Rectangular Parasitic Element for Gain Improvement	G. Divya	International Research Journal Of Engineering And Technology(IRJET)
77	Astudy On The Writing Skills Of Morrison'	K.Krishna Kumari	Journal of Advances And Scholarly Researches in Allied Education
78	Adsorption Of Cr(Vi) From Polluted Water Using Activated Carbon Prepared From *Vinca Rose Apocynaceae'*	O.Sreedevi	An International Journal of Innovative Technology and Exploring Engineering
79	Design and Implementation of 16-Bit Baugh-Wooley Multiplier	B.MahaLakshmi	SSRG International Journal of Electronics and Communication Engineering (SSRG – IJECE)
80	Design and Implementation of 16-Bit Baugh-Wooley Multiplier	M.Bhavani	SSRG International Journal of Electronics and Communication Engineering (SSRG – IJECE)
81	"Extensive Survey of Hybrid Routing Protocols in MANET"	N.Kavitha	International Journal of Engineering Research in Computer Science and Engineering
82	"Advanced and Distributed Relative Segment and Opportunistic Routing for Congestion Control and Traffic Management in MANET"	N.Kavitha	Journal of Adv Research in Dynamical & Control Systems (Scopus Indexed and free Journal)
83	'Determination Of Olanzapine With Ddq By Charge Transfer Complexatoion Using Uv Spectrophotometric Method'	O.Sreedevi	An International organization of Science and Research
84	'Determination Of Olanzapine With Ddq By Charge Transfer Complexatoion Using Uv Spectrophotometric Method'	G.Dilli Rani	An International organization of Science and Research

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Low mutual coupling with dual-element MIMO system for sub-6 GHz 5G and WLAN applications

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ABSTRACT

A Two-band double port MIMO radio wire which is having low common coupling is proposed for 5G/WLAN application. The general size of the MIMO receiving wire is (18 × 44 × 0.8) mm3. The inconsistent arm of the IFA(Inverted F-Antenna) is the justification behind the two groups. Bowing andexpanding size of the arms with the flight of stairs shape is liable for the proposed two-groups havingthunderous recurrence at 3.5 GHz (3.3 GHz-3.65 GHz) and 4.7 GHz (4.76 GHz-5.5 GHz) separately with rate impedance data transmission of 10% and 15%, individually. The proposed recieving wire utilizes a straightforward Defected Ground Structure (DGS) in view of a rectangular openings and roundabout stubs to accomplish Low Mutual Coupling (better than 15.2dB and 15.4dB separately forthe two-groups) between the ports. The ongoing dissemination and radiation designs are inside as faras possible .The Software utilized in this Antenna configuration is Ansoft HFSS Software.

Keywords: *Mutual coupling, WLAN, 5G, MIMO (multiple input and multiple output), Ansoft HFSS Software.*

1. INTRODUCTION

The future improvement for the most portion relies on distant correspondence shape .The fifth-age faraway structure, is implied as 5G, ought to be on severa practices qu ..er than 4G and aim for the starsThings (IOT). The 5G some distance off correspondence machine keeps contrast under 6 GHz and mm(millimeter) wave above 24GHz-40GHz. The "Sub-6" area is used for a goals in light of the truth of itsextra relaxed locale and it recommends mid and low - go over packs under 6GHz.But it doesn't give the impacting fast speeds that we can get with mm Wave .The MIMO shape is basic for 5G n48(3.5- 3.7GHz), n77(3.3-4.2GHz), n78(3.3-3.8GHz), n79(4.4-5GHz).In this proposed Two-band twofold portMIMO machine is becoming for the n78 band. The qualities of the very distant correspondence designs can be resuscitated with different real factors more than two or three outcome structures. These improvements have more than two or three records and unequivocal result parts to broaden the impediment of the system, even the sign obscuring in the multipath ecological components can be decreased. The which strategy for MIMO machine is the radio wire structure. Regardless, the shut through amusement plan of the recieving wire parts prompts conventional coupling, subsequently accomplishing execution contamination. The base distance between the recieving wire parts ought to be 1/2 of the functioning rehash for engaging and adequate for low shared coupling, but since of needof conservativeness, the splitting between the radio wire parts is reduced. In this manner, the quintessential explore is to get low standard coupling between fervently scattered recieving wire partshaving cut up between the gave up floor plane improvement for MIMO applications.

Putting together twofold band MIMO ..tting wire is an inconvenient endeavor given that comparableseparation portion doesn't work for each the twofold frequencies. Recorded as a printed copy, a coupleof twofold band MIMO radio wires have been tended to. A twofold portion getting wire for WLAN writing computer programs is crushed in [3], and here the radio wire parts have two sending parts, a picked monopole, and a shorting branch. A superfluous partition more conspicuous than 20 dB is donefor each the get-togethers, and the decoupling shape contains a projected floor and a delicate opening lessen on the floor plane. By the by, the component of the radio wire is strikingly monstrous. In [4], anordinary twofold band MIMO radio wire for WLAN utility is broke down, the spot a huge house and several limited opening are utilized as a decoupling association. A multiantenna shape tending to

RESEARCH ARTICLE OPEN ACCESS

Design and Implementation of IoT Based Smart Health Monitoring System for Diabetic Patients Using Wireless Sensor Networks

Maha Lakshmi B [1], Lavanya M [2], Rajeswari Haripriya G [3] Sushma sri K [4], Teja M [5], Jayasri M [6]

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ABSTRCT

Internet of Things (IoT) being a advent technology in smart sensing devices, has provided practical solutions in various fields. The study combines the IoT technology with the health care monitoring system allowing the connection between the devices. The chronic metabolic disorder Diabetes is a fast growing global issue. We are adopting a monitoring system in the suggested approach that includes glucose monitoring as well as other parameters such as body temperature, heart rate, and oxygen level.

Keywords – Internet of things (IoT) Health care monitoring system, Diabetes

I. INTRODUCTION

Diabetes is a chronic disease that happens both when the pancreas does not produce enough insulin or when the bod cannot use the insulin efficiently. Insulin is the hormone that controls the sugar levels in the Hormone that controls the sugar level in the blood is insulin. The abnormality in the body the glucose accumulates itself in the blood which causes significant deterioration in human health. Type 1 diabetes is caused by the loss or disruption of insulin-producing cells in the body and can affect people of any age. It is most commonly diagnosed in children a: adults. Type 2 diabetes is caused by the pancreas' inefficient insulin synthesis or the body's inefficient utilization of the insulin generated. Over the ages the traditional method used to test the glucose levels were invasive, which use blood, which is quiet a drawback. To over come the drawback we are implementing a non-invasive glucose sensing monitoring system, which is a painless and easy process. As IoT has revolutionized the health-care monitoring system, we are implementing a health-care monitoring system that allows us to keep track of a patient's glucose levels as well as test other metrics such as body temperature, heart rate, and oxygen levels (SPO2).

II. COMPONENTS USED IN IMPLEMENTATION

For the implementation of the smart health care monitoring system there is need of some components that are suitable. The components include Infrared sensor, LM35 sensor, MAX30100 sensor a Arduino UNO and a GSM module.

a. Infrared Sensor

The IR sensor is a combination of light emitting diode that emits a monochromatic red light at a wavelength of 660 nm and a Infrared light at a wavelength of 940 nm. The sensor is made up of two major components that is a transmitter and a receiver. The transmitter transmits the light through the patient's finger and the from the amount of the light received at the receiver we can calculate the glucose levels in the blood.

b. Temperature sensor- LM35

It uses the basic principal of a diode, when the temperature increase the voltage increases at a known rate. It can be operated at a range of 5V supply and the stand by current which is less than 60μA.The signal that is generated here is directly proportional to the temperature.

c. Heart rate and Oxygen level Sensor- MAX30100

The MAX30100 sensor is a combined pulse oximeter and a heart rate sensor. The sensor is intended to detect the Heart rate and the Oxygen levels(SPO_2) of the body. The sensor includes of two light emitting diode and a photodetector with a series of low noise processing devices to perform the task like detecting the heart rate and oxygen levels.

d. GSM Module

The expansion of GSM is Global System for Mobile. The GSM module is used for the communication or the interaction between the devices and the internet.

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Research Paper

A System and Method for Human Eye Detection Using Digital Image Processing In Matlab

E. Suneetha, P. Bindu Madhavi, M. Alekya, P. Nagalakshmi, M. Akshaya, P. Bhagya sree

ABSTRACT *-Face detection is one of the most common techniques in various future visual applications. Face detection plays an important role in biometric technology. Face recognition technology. It is based on the skin colour as well as face facial features using Haar feature. The aim of this project is to detect the human face using viola-jones algorithm in MATLAB. Viola-jones algorithm is mainly used to detect the human face and facial expressions recognition. Here we mainly focussed on eye detection for drowsiness. Based on the eye ball movement of a particular person, it detects whether the person is conscious while driving. First, it captures the image of the person through the camera and detects the face if it contains. Later, it specifies the movement of the eye ball. Thereafter, if the eye ball is left it indicates as left and If the eye ball is towards right it indicates as right. By this we can keep an eye on the person if he is in critical situations of road accidents during driving.*

Index Terms: Face detection, Viola jones algorithm, MATLAB, Digital Image processing

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I. INTRODUCTION

Due to negligence, people when driving vehicles may feel asleep or when drunk may lead to accidental cases.

II. PROPOSED WORK

In this process firstly, image is captured by camera. Next in the field of digital image processing it converts colour image (RGB) to a gray level image using viola-jones algorithm face is detected. Eyes are detected by using regions of Haar features and indicates the eye ball whether it is left or right

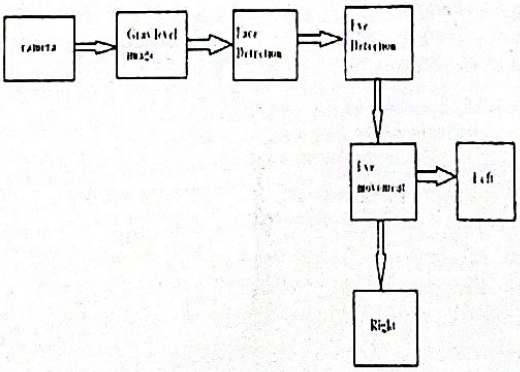

Fig 1: Procedure Flow for Human Detection

2.1 DIGITAL IMAGE PROCESSING

Digital image processing is processing any digital image. In this pre-processing step, a colour image is divided into frames and converted into a gray level image within the range of pixel intensities [0-255], which is called dynamic range of an image.

2.2 FACE DETECTION

An image is captured by a camera(webcam) and next it converts into gray level image by using processing steps. Now, the face is detected by using Viola Jones algorithm. When the features of human face are compared

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Research Paper

Power Generation Using Piezoelectric Effect

E. Suneetha, K. Revathi, M. Akhila, A. Supraja, G. Hema latha, J. Gayathri

ABSTRACT-:*In present situations the shortage of electricity is the major problem for industrial growth as well as rural development. To solve such type of problems, we need to develop strong electricity generating techniques with the available resources, during all conditions. In this work, electrical power is generated as non-conventional method by the human work or run mechanism using the piezoelectric sensor; there by non-conventional energy using foot step, converts mechanical energy into electrical energy. Piezoelectric materials are used to produce the non-conventional energy, when a piezoelectric sensor is strained, and it produces the electric field. A circuit comprising of Arduino (UNO R3) ,LED, Buzzer(5V), DC cooling fan(12V), Connecting wires, bread board are used to construct circuit to generate piezoelectric current. Therefore, piezoelectric materials convert ambient vibrations into electric power and hence utilization of waste energy with foot power following human locomotion is most important in highly populated and crowdie areas, which will be helpful to generate adequate amount of energy.*

Index terms: ***piezoelectric sensor, electrical energy, mechanical energy***

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I. INTRODUCTION

The creation of electric power from different types of energy sources is called generation of electricity. Generally, electrical energy produced by converting the sources of energy like atomic, gasoline, coal and some other natural sources. Atomic power plants require vigilant treatment of both raw and unwanted materials. From the beginning, man has needed a lot of energy and used at an increasing rate prior to his existence. Now-a-days, electricity is the one of the most important things that a man needs to survive on the earth, which is now being generated using water. The quantity of water is drastically reducing on the earth which leads to the shortage of electricity in future generations. After recognizing that the electrical energy is being generated from the renewable resources like wind, sun and water, people are using number of ways to use and save the energy. There can be insufficiency of the renewable sources on earth any time which can be compensated by the method of piezoelectric effect using piezoelectric materials.

Walking is one of the most essential things every man will do on his daily life. While walking a man losses some of his energy levels. Also there will be some pressure applied on the earth surface. So here we are planning to convert the pressure which is becoming a waste,into the electrical energy we use in our daily life. The phenomenon we are using to convert the mechanical energy (pressure) to electrical energy is called the piezoelectric effect which was introduced by the physicist Pierre Curie in the year 1880.

Piezoelectricity is the electric charge that is present in certain solid materials such as crystals, certain ceramics, and biological matter such as bone, DNA, and various proteins in response to applied mechanical stress. The word piezoelectricity means electricity generating from pressure and latent heat. The implanted piezoelectric material can giv the captivation of the changing overweight applied by moving individuals into the electric current, which can be stored in a battery. To develop this renewable energy with low-cost here we are using the Arduino UNO as the microcontroller. In this process there is no need of external power required, the electricity is generated simply by walking on the sensor. The piezoelectric effect is achieved by the quartz crystal which is being introduced in the form of a sensor. The sensors can withstand a lot of weight even the vehicles can travel on the sensor. These sensors can be placed on the roads or a walkway where people will be in massive amount. By having the people walking on the sensors the electricity can be generated and it can be used directly or it can be stored for further purposes.

II. PROPOSED METHODOLOGY

The primary objective of the proposed work is to produce the electric power from the foot step of the people and the pressure exerted during walking. The transformation of mechanical energy to electrical energy

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Research Paper

IoT Based Vehicle Parking Place Detection

R Lavanya[1], R Jyothsna[2], V HemaSri[3], M Manju Sri Lakshmi[4], Syed Apsana[5], P Mounika[6], S Lakshmi Pavani[7]

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Abstract:
In this highly populated world with heavy traffic, finding vehicle parking is an important issue in highly smart and congested cities. There a · too many vehicles on the road but not enough spaces for parking them. One of the main problems is that when we arrive a parking area then we realize that there are no empty parking slots to park our vehicles. Another biggest problem is after entering in a big parking area we are confused to find the empty parking slot to park our car. Sometimes we may face both these problems that waste our valuable time. That's why we need efficient parking management systems in all parking areas that will provide easy parking and our time is saved.
In this project, we are designing an efficient Parking System using IoT to overcome this problem. This method helps the vehicles driver to park their vehicles with less wastage of time.

Keywords: *IoT , Arduino UNO, Parking system ,LCD Display, IR sensors, Servomotor.*

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I. Introduction:

Nowadays people in densely populated areas are facing a severe problem for car parking systems. People are choosing normal parking methods and searching for a vacant place in a parking slot without knowing if the slot is full or not. Due to this there is a wastage of time, wastage of fuel and sometimes cars may get damaged due to lack of space for parking. So, to overcome these problems we came with the idea of IOT BASED VEHICLE PARKING PLACE DETECTION. This project involves a system including Arduino UNO that provides solution to the problems in the allocation of car in the parking slot and IR sensors are provided at the parking place to detect the presence of vehicle parked. Also, a gate has been provided with servomotor whose main function is to allow and restrict vehicles inside and outside the parking slots by opening and closing the gate with respect to the information which is provided by the IR sensors in the entrance.

This system detects whether the parking slot is empty or not. If the slot is empty in the automated car parking ,it gives space to new vehicles else the entrance is blocked by the servo barrier in case the parking is full. The drivers can see the status for the availability of the free space on 16*2 LCD display. We can also see on the LCD how many parking slots are left.

Manual Car parking systems does not have any intelligent monitoring systems. The parking slots are monitored by human beings. All vehicles enter into the parking which may leads to the damage of cars and waste of time for searching whether the parking slot is available or not. Sometimes it may create blockage. Use of this system for Car parking monitoring will reduce the human efforts.

II. Existing Systems:

At present some countries have portals which users can gain some information about parking areas via the internet. This system can give user the information regarding parking space, but it won't be able to give which parking slot is vacant and occupied.Hence such system cannot smartly handle the issue. Car lifts along with automated robotic system which automatically takes car in a particular parking space as soon as car enters on a platform.This system cannot be installed by medium scale shopping malls , movie theatres as it can cost them a huge amount.

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Automatic Face Mask Detection and Temperature Scan Entry System

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Abstract:
As we have seen from ending of 2019 a scary Disease COVID-19 that had attacked many people It is an easy spread communicable disease so to overcome This virus, we need to maintain social distance so that spread of virus will be reduced. We have seen everywhere checking up the health conditions and allowing inside to respective areas. To check these conditions a person should be there to monitor so instead of that we can use this, it automatically works without man source.

Keywords: *Covid 19, Raspberry pi, face mask detection, Temperature detection , camera*

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I. Introduction :

Corona virus disease-19 (COVID-19) is a contagious disease caused by virus. Many people have affected to this disease world widely. This is caused by infected people who revolves around healthy people without wearing the mask. The virus is spread by the droplets coming out from the mouth while functioning the mouth like talking ,eating ,singing . For this spreading we need to cover the mouth by a mask and one more symptom to easy identification of covid is temperature because the foremost symptom is fever so based on that we have considered temperature detection also . If the person is wearing a mask and maintaining social distance the chances will less to be infected while the person has suspected people in surroundings

II. Background :

As we have seen that COVID-19 has affected the people world widely by easy spreading of virus WHO is also in research of find the medicine for the virus somehow they created vaccine but that also doesn't stop the presenting of virus . Later on they thought that virus is a communicable disease so that can be reduced by the safety measures that WHO has stated that social distancing should be there between person to person whether they are effected or not, next was a mask that covers the nose, mouth these are the parts from where the virus can be easily flow through and a sanitizer that prevents the people not to spread the virus with the hands . This is the way to stop spreading the virus

Components:

Raspberry Pi : This is a single-board computer, the board consist of a 1.2GHz 64-bit quad-core ARM processor and an 802. 11n wireless LAN, Bluetooth 4.1, and Bluetooth low energy. It consist of 1GB of RAM, 4 USB ports, and full HDMI support. It has a powerful feature of Raspberry Pi is the row of GPIO (it means general purpose input/output) pins along the extreme right edge of the board, it consist of a 40 pin GPIO . It is a standard interface for connecting a single board computer or microprocessor to other devices is through GPIO pins.

IR Sensor : The IR sensor is a device which detects IR radiation falling on it, an infrared sensor is an electronic device that emits in order to sense some aspects of the surroundings. It can measure the heat of an object as well as detects the motion as well as the presence of an object due to intervention or interruption. These types of sensors measure only infrared radiation, rather than emitting it that is called a passive IR sensor, there are numerous types of IR sensors that are build and can be built depending on the application.

Temperature Sensor : The sensor is used to measure the temperature of a particular object ranging from -70°C to 382.2°C. The sensor uses IR rays to measure the temperature of the object without any physical contact and communication to the microcontroller using the I2C protocol.

Servo motor : It is a type of motor that can rotate with great precision. In general this type of motor consist of a control circuit that provides feedback on the current position of the motor shaft, this feedback allows the servo motor to rotate with great precision. If the motor is powered by a DC power supply, it is called DC servo motor

RESEARCH ARTICLE OPEN ACCESS

Design Of Chessboard Using Arm 7

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ABSTRACT
Chess is one of the old and challenging board games. Even though digital games have become more attractive now a day's Chess is still admired in the onscreen model of the game. A board game with clear movements of all the pieces is considered attractive for the users. Hence, a new chess board is designed by the Advanced RISC Machines (ARM) processor.256 x 256 touch screen display, ARM processor, buzzer and switches are components used in chess board designing. Keil software is used to achieve the automation of the chess board.
keywords: - Chess board, Keil software, ARM processor, digital games.

I. INTRODUCTION

Playing a game is an activity for individuals. Many games are designed for most participants to enjoy. Companies are investing to create games with technology for the new era. In growth of the digitalized world today and technology has advanced tremendously, because of making computer chess games and online chess hubs are very familiar. [1]. they do not give the sense of playing a real chess game with a chess board and pieces. There are many mobile and desktop applications accessible that permit users to play chess with a computer through a user interface (UI) still they do not think the game interactive segment. [2].

Chess is one of the familiar strategy games and needs excellent practice and training. Chess training centers around the world can utilize these robots to provide remote coaching classes to children from professionals all over the globe. [3]. Variety of chess implemented by the past motivates automatic chess to be an impressive in terms of amusement. Newly, robotics and automatic trend are being promoted everywhere. Chess is a two-player strategic board game played with sixty-four squares in the order on 8x8 grids. Every participant starts from the sixteen pieces: one king, one queen, two rookies, two knights, two bishops as well as eight pawns. The queen is very powerful and the pawn is the lowest powerful . every piece proceeds differently [4]. Its aim is to create an unavoidable threat in checking and catching by placing the opponent under the king.

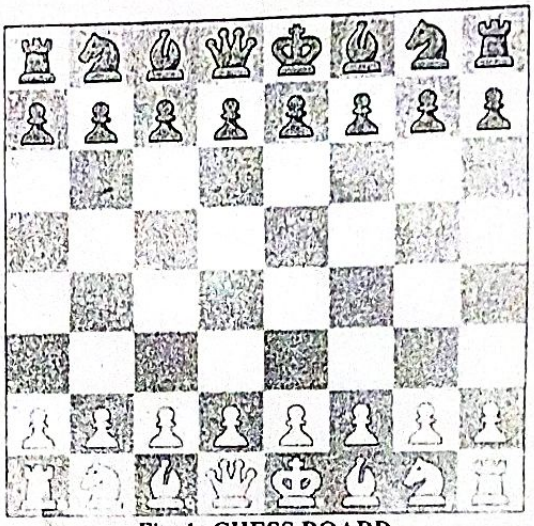

Fig. 1: CHESS BOARD

Chess has several principles and setups. Few of them are based on the game category. Competition of chess has duration, but may not be in local chess [5]. Due to differences in gaming, the principles of chess are explained. Anyhow, the kinds of chess and their moving phases are major rules that attract us. There are six kinds of pieces, inclusive of King, Queen, Knight, Bishop, Rook as well as Pawn every kind has its individual moves. In a single rotation there are four kinds of operations to choose from: Moving, Killing, Castling and Enjoying [6].

II. LITERATURE SURVEY

A. Dimitrija et. al. [7] suggested the robot arm to play chess. Their robots notice the location of chess pieces by utilizing camera that arranged on top. It is a gesture of pieces by using a clamp and arm process. The robot arm shows the mechanical segments to participants. The reactions of the participant could be most fascinating if the gesture of a chess piece is created with an invisible mechanism.

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Design Of Wallace Tree Multiplier Using 15:4 Compressor In Terms of power

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Abstract:VLSI designers mainly try to reduce the power usage , but the multipliers consumes more power. To reduce the power consumption, different methods are used. If we use adders in the design of multiplier, then the multiplier works very efficiently. We can use adders like half adder, full adder, carry tree adders. The synthesis and simulations are done in Xilinx Integrated synthesis environment software using 14.2 version. The Wallace tree multiplier occupies 36% of area among the total area. The power consumed by the Wallace tree multiplier is 0.034w and the total delay of Wallace Tree Multiplier is 24.935ns

KEY WORDS-KSA (kogge Stone Adder), 5:3 Compressor, 15:4 Compressor, WTM (Wallace Tree Multiplier), modified Full Adder.

I. INTRODUCTION

Now a days multipliers play a crucial role in digital circuits. Multipliers are widely using in the areas like video conferencing etc.... generally multipliers consumes more power and have more delay but if a multiplier has to be efficient then it should consume less power, area and it should have less delay. The Wallace Tree Multiplier reduction can be done in 3 steps

1. Generation of partial products
2. Reduction of partial products
3. Final addition to get output

In 16×16 bit Wallace tree multiplier, in the reduction of partial product we use modified full adder, half adder, 15:4 compressor. The 15:4 compressor has 5 modified Full Adders and two 5:3 Compressors and 1 Kogge Stone Adder.

II. WALLACE TREE MULTIPIER

Multiplier occupies a major role in digital fields and it is used for multiplication. Multiplier is formed by the adders like half adder, full adder etc... The multiplier has many features ,some features are given below.

Speed: multiplier should work fastly

Power: Multiplier should use minimum power.

Area: Multiplier should cover lesser amount of slices.

If the above features are satisfied then multiplier works effectively.

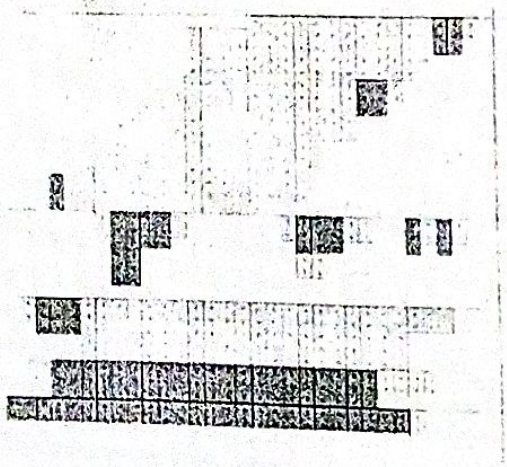

Fig.1. 16 ×16 bit Wallace tree multiplier reduction using 15:4 compressor.

In the reduction of Wallace tree multiplier, first partial products are generated by using bits. then the products are reduced by using adders, compressors. At the end we use the adder to add the inputs and to give the ouput . In this paper, Wallace tree multiplier consumes less power.

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DESIGN AND PARAMETRIC EVALUATION OF KOGGE STONE ADDER USING CMOS LOGIC AND PTL IN TERMS OF DELAY AND AREA

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Abstract-In modern technologies of DSP and VLSI applications, adders are most important and essential blocks. For which, high speed adders namely parallel prefix adders depicts a crucial role in many electronics applications instead of binary adders. As compared with binary adders, Parallel Prefix Adders has less delay. Among all parallel prefix adders , a Kogge Stone Adder has more area Consumption. In this paper a CMOS logic and Pass Transistor Logic(PTL) is used to design 4-bit kogge Stone Adder, to accomplish a Kogge Stone Adder with less Area utilization. Implementation results offer a Kogge Stone Adder which is designed by PTL gives less Area consumption. The whole simulation results can be done using dsch3 and microwind3.1 tool.

Keywords – parallel prefix adder, Kogge Stone Adder, PTL , CMOS logic, Area efficient, DSP and VLSI design, dsch 3 and microwind 3.1.

I.INTRODUCTION

Binary addition is a basic process which have decisive task in recent technologies of digital signal processing and VLSI applications. The speed of processors used in DSP and VLSI applications primarily depends on adder design techniques. There are diversity of adders, which provides sum and carry as the results. In many electronic applications, the circuits need binary adders. A performance of design of digital systems is fixed by adders. In earlier works, Various Binary Adders[2] are used to calculate the fundamental addition operation. Binary Adders are Arithmetic circuits in the form of Half-Adder and Full-Adder. A Half-Adder is designed by using XOR and AND logic gates whereas Full-Adder is designed by using two Half-Adders with one OR logic gate. All binary carry adders need full adder for their operation. Because of two or more Full adder's utilization in binary carry adders[15] they require more power and gives less speed of operation. Parallel Prefix Adders such as Kogge Stone Adder, Brent-Kung Adder, Han-Carlson Adder and Ladner Fischer Adder which are used to ignore high delay Problem because they are High Speed Adders[3].

This Parallel Prefix Adders provides power efficient designs in many Digital Applications. In previous works , all these Parallel Prefix Adders are compared on the aspects of area, delay and power consumption[1]. Among all Parallel Prefix Adders [1] less delay and low power utilization is observed in Kogge Stone Adder. But the area occupied by the Kogge Stone Adder is more. To attain an area efficient Kogge Stone Adder , a CMOS logic and a Pass Transistor Logic is applied to design the kogge stone adder[5] which is discussed in the proposed design. This research paper is set out as follows, in section II,; described a kogge stone adder using CMOS logic, in section III; a PTL based parallel prefix Kogge Stone Adder explained, in section IV; it defined the Parametric Evaluation results on the view of Area and Delay of both CMOS and PTL logic designs, at the end the performance evaluation results are concluded.

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Research Paper

Prevention of Overheating of Electronic Devices Using IoT Based Temperature Controlled Fan

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ABSTRACT:- *Now-a-days the usage of electronic devices became more and more popular. This usage of electronic device for long time in-turn leads to increase in the temperature of the device which makes the device overheat. Overheating causes internal damage to the corresponding device and hence reduces the life time of the device. So, to control the heat and protect the electronic device from overheating, an IoT based temperature Controlled fan is proposed. The main objective is to detect the temperature of the device when in use using temperature sensor and automatically making the fan ON and OFF based on the measured temperature. When the temperature is greater than the set value or the threshold value, the fan will be in ON condition by which the high temperature of the device gets reduced. An Arduino board is used to implement this. Making the electronic device free from overheating, decreases the chance of damage done and increase the life-time of the device.*

KEYWORDS: *Overheating, Temperature, IoT, Arduino*

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I. INTRODUCTION

This paper presents an idea to prevent the failure of electronic components due to overheating. Usage of electronic devices has increased these days and became very much common. Using electronic devices for longer time and due to any faults in the internal circuitry, the device gets overheated. Because of overheating, internally the electronic device gets damaged which stops the working operation of the device.

Fig.1: Damaged Internal Structure of the Electronic Device due to Overheating

This proposed design prevents the devices from overheating by automatic fan rotation [1] when the temperature of the electronic device is high which makes the device cool down and work efficiently. With this, the damage done to the device can be prevented which in-turn improves the life-time of the device.

II. RELATED WORKS

Shwetha S Baligar et al. discussed about the fan speed controlled by using Pulse Width Modulation and Arduino board according to the temperature and Humidity Sensor (DHT11). PWM technique is found to be the best technique for controlling the fan speed using the detected temperature. The speed of the fan depends on the temperature and there is no need for regulating the fan speed manually again and again [3].

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HYBRID AND DIRECT LOGIC FULL ADDER BASED COMPARATOR USING MICROWIND

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ABSTRACT

One of the basic elements of ALU is Magnitude Comparator. Here in this paper, the design of Magnitude Comparator is described by using different styles of Full Adder design logic, where Full Adder is the basic building block of ALU which is used in Microprocessors and Digital Signal Processing. In VLSI systems, the main theme of present methodologies and techniques for design of any device is to reduce the power consumption and the area occupation. In this paper Comparator is developed by using various full adder logics with the help of DSCH2 and Microwind2. This will reduce the power consumption and area occupation.

KEYWORDS: *Arithmetic Logic Unit (ALU), Magnitude Comparator (MC), Full Adder (FA), Power, Area.*

I. INTRODUCTION

Comparator is one of the basic and useful arithmetic components of ALU. There are so many designs of comparator are present with different results of area occupied, power consumption, number transistors used [1]. In today's world of technology, all the users of smart systems are aimed to use best systems which can give the better results with low power consumption [2] and low area at high speed. The low power consumption is possible when the number of transistors is reduced on the chip of particular circuit, by this, we can import many number of devices on a single chip and area can be decreased [4].

The main conspire of VLSI systems for new approaches is power saving of a device or system. Low power consumption helps to reduce installation costs [4] [5]. By the reduction of power consumption, operating Speed of the device or system will increase. So that can achieve the better results [6]. One of the better ways to bring down the power of circuits is to find the new methodologies of circuits for preserving power [7]. In this paper, we propose different design techniques of comparator for better performance and power-efficient [8].

Comparison of any two binary numbers is one of the arithmetic operations of ALU [9]. This comparison determines if the number is greater than (>), less than (<) or equal to another number. This comparison is done by the Magnitude Comparator. Magnitude Comparator is a combinational circuit that compares the two binary numbers of any numbers of bit and gives the outcome as three variables [10]. The below fig shows the comparators block diagram.

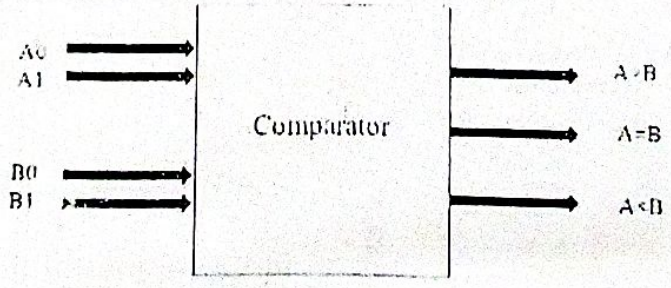

Figure 1 : Two-bit Magnitude Comparator

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Design and Implementation of Wallace Tree Multiplier Using Parallel Prefix Adders

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***Abstract*— Delays have become increasingly crucial in modern VLSI technology. In order to design the circuit, an efficient ALU is required. All logical computations, such as addition and multiplication, are handled by the ALU. Multiplication is used to reduce the number of partial products while increasing the speed of the operation. An adder is the fundamental building block of every digital design. Any adder should be able to satisfy in terms of speed and area. The area (number of LUTs), delay (ns), and number of bonded IOBs of the 16-bit Wallace tree multiplier and 16-bit Parallel prefix adders (Carry look-ahead adder, Kogge stone adder, and Brent Kung adder) are compared in this project. VLSI and simulation were used to design these, and Xilinx was used to synthesis them (ISE) 14.7.**

***Index Terms*— Arithmetic Logic Unit (ALU), Brent Kung adder (BKA), Carry look-ahead adder (CLA), Kogge stone adder (KSA), Parallel prefix adders (PPAs), Wallace tree multiplier**

I. INTRODUCTION

Multipliers and adders are critical components of the ALU, and their speed and delay should be high. In today's technology, a multiplier is used to efficiently build the circuit. A multiplier provides fast speed and minimizes latency. Multipliers are devices with a high surface area that multiply two integers. Multiplication is completed in three steps: partial product production, partial product addition, and final addition. The main goal is to provide fast speed with minimal delay, so an increase in speed results in a large area. There is a huge need for high-speed multiplication with minimal hardware. Wallace tree multiplier, proposed by an Australian computer scientist Chris Wallace, is a tree structure built using a multiplier.

For the creation of partial products, this multiplier incorporates a half adder, a full adder, and the multiplication of multiplier and multiplicand bits. High-speed multipliers are parallel multipliers. Parallel prefix adders (PPAs) are derived from the Carry look-ahead adder, and there are other variants of PPAs, such as the Kogge stone adder (KSA) and the Brent Kung adder (BKA), that speed up binary addition. A parallel-prefix adder performs well since the latency is proportional to the logarithm of the adder width, resulting in rapid and reliable prefix arithmetic computation. Pre-processing stage, Carry generation network, and Post-processing stage are the three steps of a parallel prefix adder. The first stage creates and propagates bits, while the second stage performs prefix operations. At the end of the process, the sum and carry are obtained.

II. WALLACE TREE MULTIPLIER

The Wallace tree multiplier is a high-speed multiplication device. A series of adders is used by the Wallace tree multiplier to generate the final outputs. It is a component of combinational logic circuits that multiplies two binary values and is built with full adders and half adders to efficiently perform the multiplication. The shift-add method is the most common way to accomplish multiplication. The time required to calculate products using the shift-add method grows as the number of bits in the operand increases. In digital design, there are a variety of multipliers to choose from. Because the Wallace tree multiplier performs better in terms of speed, it should take up less slices and LUTs.

Wallace tree multiplier mainly consists of three steps:

1. Generation of partial products
2. Partial product reduction
3. Final addition.

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Smart Door Lock System using IoT

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Abstract

A savvy entryway lock framework is a matter of some important thing to guarantee security to a home/building. Because of truly expanding liabilities and everyday errands, individuals invest the vast majority of energy away from their homes. Entryways locked utilizing the traditional locks are not so protected as they used to be previously, these days anybody can without much of a stretch break in by breaking these locks. In the proposed approach, a shrewd entryway lock and lighting framework involving IoT for a brilliant home is introduced. A savvy entryway lock framework is a framework that involves a computerized secret key for opening and shutting the entryway. The secret word-based entryway lock framework permits just approved people to get to the confined regions.

IndexTerms- Traditional locks,IoT,Errands.

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I. 1.Introduction

A smart lock is an associated electronic and mechanical locking device that opens wirelessly with a certified user's authentication. In smart homes, it permits a property holder to enter their home or give the entrance without requiring any customary key.Password-based door lock system provides security for homes through a security password that is confidential for the user alone. The user will need to enter a password to unlock the entryway. On successfully entering the password, the door gets open for a specific amount of time letting the individual enter the house. Then again, in the event that the client enters an off-base secret word, the entryway doesn't get opened. Arduino kit that consists of AtMega328 which is one of the most popular microcontrollers is used.

Coming to the security of the front door, a very much made conventional front entryway finishes the work fine and dandy way. Computerized entryway locks have been generally utilized in families and workplaces. However, a gate crasher has attended to penetrate a private region by circumventing the lock. In this review, we plan and carry out an IoT-based smart door lock system is to diminish the harm of computerized entryway lock altering and to monitoring the system.

II. Existing System

This technology is that the method of remotely controlling the door unlock by utilizing an internet association and hand-off messages. With by user's registered password, RFID (Radio Frequency Identification), and mobile application to the system, we will be able to unlock the door by that which will increase the security level. Here are three approaches for an automatic door unlock system, within which first way by password, the second way by RFID, and also the third way are by using the mobile application.

The actual operation of the system starts when a user holds an associate RFID tag card over the EM-18 reader. The reader tries to scan the card. There's a prospect that the card help by the user is not an RFID tag but something else like an id card, college card, ATM card, etc. In that case, the RFID reader isn't ready to acknowledge the card. If the card is to be an RFID tag, the scanner receives the 12-digit number from the tag and then passes it on to the microcontroller i.e., Node MCU. Once the scanning is finished a buzzing sound is formed to notify the user that the card has been scanned. Supported the code installed, the microcontroller either recognizes the tag number or it doesn't. If the tag number isn't within the code, it sends a signal to the LCD to display that the user is invalid. Also, the system alarms through the buzzer, notifying that the card is invalid. If the tag number is present within the code, the LCD shows the User details and also the card number on the screen. The servo motor is then signaled and it's rotated to open the door. After some seconds, the motor is rotated back to close the door again. Then the microcontroller runs the script to send the information on the online. While the info is being uploaded, the LCDs are "Uploading on Web". Using the API key of the Thing

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Research Paper

IoT Based Plant Monitoring System Using NODEMCU

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ABSTRACT- *Internet of Things(IoT) is one of the most understandable form of connectivity. It is used in plenty of applications. Improper Supply of Water can effect both Soil and Plants. This problem can be overcome by using this project .In this Project, IoT is employed to create a Smart Monitoring System for Plants. In this Project we mainly used the components are NODEMCU, DTH11 Sensor, and Soil Moisture Sensor. In this project we Measure the parameters like Temperature Humidity, soil Moisture.*

KEYWORDS: *IoT, NODEMCU, DTH11 Sensor, Soil Moisture Sensor*

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I. INTRODUCTION

This Project deals about the Plant Monitoring System Mechanism. It gives the Information about the Temperature, Humidity and soil moisture. This can be done by using various sensors like DTH11 sensor, soil moisture sensor. It is suitable for plant which may help to start a better growth of plant and also it may support to control the usage of water. When the soil moisture is very less then motor ON and pump the water to the plant after that soil moisture increases and then motor OFF Automatically. The parameters Temperature, Humidity, Soil Moisture can Display on Blynk IoT App.

COMPONENTS

NODEMCU: NodeMCU is Open Source IoT Platform. It is the key Component of our project.MCU means micro control unit.it is 32 bit MCU and it has ESP8266 Wi-Fi protocol. It is 17 pin GPIO(General purpose input output).It has a inbuilt Wi-Fi through this Wi-Fi the data can be transmitted. In NODEMCU the user program can be external flash memory. It uses low power.

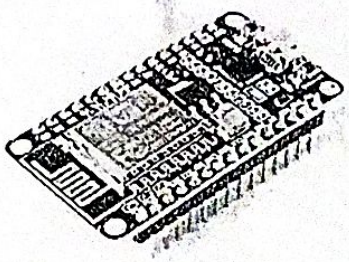

Fig 1: NODEMCU

Soil Moisture Sensor: Soil Moisture Sensor is used to Measure the Volumetric Content of soil. It is sensitivity adjustable it is capacitance to measure dielectric permittivity of the surrounding medium. In soil Dielectric Permittivity is function of water content.It has operating voltage of +5v dc. It is used in many applications like agriculture and landscape irrigation.

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Role of Reducing Agent in Nano Particle Synthesis

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Abstract: Utilization of diminishing specialist is fundamental when you need to make any nano-molecule at its natural state. For eg., the instance of metal nanoparticle, for example, Au, Ag and so forth You might realize that when matter is estimated down, there is a colossal raise in its without surface energy.

This prompts an immense expansion in both synthetic and actual association of the nano particle with its encompassing. In one hand it builds the surface synthetic reactivity. The diminishing specialist lessens the shot at it responding with encompassing particularly to get oxidized.

Then again, the raise in surface free energy likewise actuates its actual reactivity. For instance, prompting molecule conglomeration prompting an increment in the molecule size. Here a size balancing out specialist otherwise called covering specialist will deal with this. In this way, a diminishing specialist plays an alternate part contrasted with that of a covering specialist. Both can be utilized simultaneously. Anyway their singular organization contrast from one case to another contingent upon need. Individuals likewise distinguished a few specialists that can do the double job effectively eg., certain sodium citrate and barely any amines. In any case, this is likewise restricted to the prerequisite/utilization of the nano particle. Since the surface change would impact its exhibition in a given application.

Keywords: Reducing agent, Advanced Materials, Nano Materials.

INTRODUCTION:

Diminishing specialists of silver particles are frequently utilized in the readiness of silver functionalized antimicrobial completions on materials. A methodology for the in situ functionalization of cotton with silver items was depicted . The strategy of screen printing was utilized in this cycle. It includes the screen printing of cotton with a printing glue containing silver particles. UV illumination of the surface completed cotton tests was performed to foster usefulness on the outer layer of the material example.

The creators have reasoned that the completed examples had superb antimicrobial movement. In addition, the antimicrobial action of the examples was held even after various washings, and such a methodology could be easily utilized with other textiles.Several lessening specialists, including sodium borohydride, sodium citrate, and so forth, assume a significant part as diminishing specialists in the development of metal salts into metal nanoparticles. The greater part of the compound responses require a raised temperature however a few responses will decrease to nanoparticles at room temperature.

The warm and Tollens decrease technique was quite possibly the main substance decrease strategy. It acts with the assistance of a few decreasing specialists, like hydrazine or dextrose, for creation of silver nano particles. These diminishing specialists were one of the significant boundary determinations in the shape and size of nano particles for instance. The sunflower-molded AgNPs can be ready by utilizing ascorbic corrosive as a decreasing specialist.
Quantity of Reducing Agent is measured.

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Determination of XRD in Advanced Nanomaterials

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Abstract: X-beam diffraction (XRD) is an amazing asset generally utilized in examination and industry. While XRD is generally notable for subjective and quantitative investigations of glasslike progressively eases in materials, undeniably more data can be gotten from a cautious examination of the diffraction designs or by utilizing explicit XRD settings: i.e., portrayal of strong arrangements, crystallite size and shape, gem direction, inside flexible strains/stresses at various levels, impact of temperature, close surface portrayal and so forth The targets of this paper are first to sum up a few fundamental standards of X-beam diffraction, and close to give a few instances of uses of XRD in the field of earthenware production materials.

Keywords: XRD Analysis, Advanced Materials, Peak Position and X-Ray wavelength.

INTRODUCTION:

XRD is a method utilized to decide the hidden precious stone construction of a material; it empowers confirmation of the crystallinity and design of an example yet gives no data of a synthetic sort. Fitting XRD examples can permit computation of the material cross section boundaries, the direction of a precious stone (or grain), stress in glasslike areas, and optional stages in the example. It is for the most part a mass portrayal strategy and produces a normal diffraction design for the area estimated. XRD is a non destructive strategy which can be directed at room temperature and strain.

X-beam diffraction (XRD) is an essential method for portrayal of mixtures in light of diffraction design. Glasslike materials have long-range requesting, which is seen as sharp tops in XRD and obvious utilizing Bragg's condition. Braag's condition relates the frequency of X-beam, interplanar separating in the precious stone, and looking point of rate. El-Latif et al. [38] incorporated nano-zirconium vanadate inorganic IEX pitch for sorption of cesium, cobalt, and nickel from a watery arrangement. Zirconium vanadate particle exchangers were incorporated utilizing three unmistakable strategies: homogeneous precipitation, sol-gel precipitation, and aqueous.

Likewise, tests were given soluble treatment while combining utilizing sol-gel precipitation and aqueous strategies. It very well may be seen that nano composite orchestrated utilizing sol-gel method addresses formless nature of the pitch alongside minor glasslike tops. Sol-gel strategy alongside antacid therapy portrays a comparative XRD design, with sharp pinnacles of higher force, demonstrating an expansion in crystallinity inferable from soluble base treatment.

The XRD design for nano composite integrated utilizing homogeneous precipitation strategy shows the presence of a few sharp tops (around 32 levels) of higher power in contrast with the pitches blended utilizing sol-gel method. Accordingly the gum combined utilizing homogeneous precipitation technique can be named as polycrystalline material. On account of aqueous strategy, the blended nano composite has a more serious level of crystallinity in contrast with the other two techniques, with extra tops at 47 and 63 degrees, individually, saw in the XRD design. As seen on account of sol-gel procedure, on account of aqueous technique for combination, crystallinity expanded with the therapy of soluble base, which is affirmed by expanded force of the tops in XRD design.

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Determination of Wide Band Gap in Advanced Materials

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Abstract: The estimation of the band hole of materials is significant in the semiconductor, nano material and sun oriented ventures. This note shows how the band hole of a material still up in the air from its UV ingestion spectrum. Measuring the band hole is significant in the semiconductor and nano material businesses. The band hole energy of encasings is enormous (> 4eV), however lower for semiconductors (< 3eV). The band hole properties of a semiconductor can be constrained by utilizing diverse semiconductor combinations like GaAlAs, InGaAs, and InAlAs. It has been found that a significant number of the nano material studies on these materials are being completed utilizing a little amount of the example. Consequently, testing turns into a central point of interest this sort of investigation. The examination was done utilizing a LAMBDA™ 1050 UV/Vis/NIR spectrometer.

Keywords: Advanced materials, Band gap, wide band gap, Spectrometer.

INTRODUCTION:

The innovation of the silicon (Si) coordinated circuit north of 50 years prior unavoidably prepared for the cutting edge registering and gadgets time that we appreciate today. Be that as it may, generally beneficial things should reach a conclusion, as the truism goes, and for this situation the predictable end is the predominance of silicon in the semiconductor business.

Moore's Law predicts that the quantity of semiconductors joined on a chip pairs roughly at regular intervals. In customary silicon-based processing, Moore's Law can't be endlessly supported because of hotness issues from pressing in such countless semiconductors, just as spillage issues because of contracting innovation. Additionally, in the power hardware field, it has turned into an expanding challenge to accomplish new gadgets with more noteworthy power thickness and energy proficiency, a long time, to satisfy market needs utilizing silicon. Basically, development in silicon is approaching its key actual cutoff points.

By a few master accounts, we have under 10 years left to remove extra execution before silicon capacity is at its hypothetical most extreme. On the computational front, various endeavors, for example, nanotechnology and three layered chips are contending to expand Moore's law for silicon, while atomic and quantum processing are contemplations for the post-silicon time. In power gadgets, silicon carbide (SiC) and gallium nitride (GaN), both wide bandgap (WBG) semiconductors, have arisen as the front-running answer for the lull in silicon in the powerful, high temperature sections. With approximately multiple times preferred conduction and exchanging properties over silicon, WBG materials are a characteristic fit for power hardware, delivering gadgets that are more modest, quicker, and more effective, with capacity to endure higher voltages and higher temperatures than partner silicon-based parts. These highlights, along with more noteworthy strength and higher dependability, position WBG power gadgets as key empowering influences for the present significant arising applications like crossover electric and electric vehicles and sustainable power age and capacity.

WBG power gadgets likewise work on existing applications, especially in proficiency gain. Yole Developpment research gauges that supplanting silicon with SiC or GaN can expand DC-to-DC change productivity in from 85% to 95%; help AC-to-DC transformation proficiency from 85% to 90%; and advance the effectiveness of DC-to-AC transformation from 96% to close to 100%.

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Determination of Narrow Band Gap in Advanced Materials

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Abstract: Infrared photo detectors have acquired consideration on account of its high infiltration profundity of IR light. Minimal expense and adaptability in handling make nano crystal-based IR indicator further advantage in its application. Control of the size to acquire a fitting band hole assumes a vital part for accomplishing high proficiency of IR photo detectors. Close infrared photo detectors are marketed gadgets with a wide scope of utilizations in air sounding, bio imaging, night vision, and so forth Limited band hole semiconductors like InAs, Ge, natural semiconductors, and so forth can work as photoactive materials in IR photo detector applications since they can make photograph actuated charge transporters that can be isolated at the point of interaction of a hetero junction.

Keywords: Narrow Band gap, Advanced Materials, Photo Detectors

INTRODUCTION:

As of late there has been enormously used interest in limited bandgap materials. Current epitaxial methods and the developing interest in nanostructures have given areas of utilization to a portion of the remarkable properties of the restricted bandgap material. As usual, one of the essential wellsprings of interest is the little bandgap which settles on them the material of decision for some applications in the infrared. Nonetheless, as of late their other extraordinary properties have been the reason for a more extensive arrangement of interests in restricted bandgap semiconductors.

The sort II band balances (InAs/GaSb) have been the reason for novel passage gadgets and infrared superlattices. The tiny successful masses inborn in little bandgap materials make them the undeniable up-and-comers in which to notice quantum control impacts at bigger aspects than in materials of bigger compelling mass and more extensive hole. The simplicity of connecting to a portion of the materials (ohmic contact to n-InAs) has settled on them the material of decision for electrical nanostructures. The capacity to place in a lot of attractive particles to make attractive semiconductors has prompted various novel properties. The specialized significance of a thin band gap and the extraordinary applications guaranteed by a portion of different properties of these materials look good for considerable examination in tight band gap semiconductors well into the following ten years.

The development concerns a technique for testing a semiconductor-on-separator type structure containing a help substrate, a dielectric layer having a thickness of under 50 nm and a semiconductor layer, the construction involving a holding connection point between the dielectric layer and the help substrate or the semiconductor layer or inside the dielectric layer, described in that it includes estimating the charge to breakdown (QBD) of the dielectric layer and in that data is found from the estimation connecting with the hydrogen focus in the layer as well as at the holding connection point. The creation likewise concerns a strategy for manufacturing a group of semiconductor-on-separator type structures including completing the test on an example structure from the bunch.

The band hole energy of a semiconductor portrays the energy expected to energize an electron from the valence band to the conduction band. A precise assurance of the band hole energy is significant in foreseeing photo physical and photochemical properties of semiconductors. Specifically, this boundary is frequently alluded to when photo catalytic properties of semiconductors are talked about. In 1966 Tauc proposed a strategy for assessing the band hole energy of shapeless semiconductors utilizing optical assimilation spectra. (1) His proposition was additionally evolved by Davis and Mott. (2,3)

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DC–DC CONVERTER IN MICROGRID FOR VOLTAGE REGULATION AND RIPPLE REDUCTION USING ELECTRIC SPRING TECHNOLOGY

P. Naga Lakshmi,* R. Ashok Kumar,** and K. Hari Krishna***

Abstract

For clean and renewable energy, microgrid is a vital process. Due to increasing penetration of renewable energy sources, requirement for DC microgrids is rising. Because of intermittent renewable energy sources, DC microgrids have to deal with unstabilized and fluctuating DC bus voltage. While designing and controlling of DC microgrids, main dominant problems to be considered are sudden changes in load, synchronization and interconnection of power converters, intermittent power generation of renewable energy sources. Electric springs are alternative to conventional energy storage systems for regulating and stabilizing load voltage and to mitigate ripples in voltage. In this paper, DC electric spring for DC microgrid to stabilize bus voltage and to protect critical loads using DC–DC bidirectional converter is proposed. DC electric spring connected in series with non-critical load will act like a smart load and protects critical load, which is connected in parallel with non-critical load, from voltage fluctuations and ripples. DC microgrid and electric spring are modelled using MATLAB/SIMULINK, and results are presented to check efficacy of proposed technique.

Key Words

Electric Spring, renewable energy source, storage device, DC Microgrid, bidirectional converter, critical load, voltage stabilization.

1. Introduction

Traditional energy sources are replaced by renewable energy sources due to increasing environmental pollution and energy crisis. DC microgrid is becoming more widespread and companionable because of its constancy, effectiveness and expediency [1]. Major drawbacks in AC microgrids like reactive power, synchronization of phase angle and frequency of voltage are not taking place in DC microgrids. As the requirement for smarter and efficient power grids is increasing DC power system is adopted by certain emerging grid applications [2]. Smarter control of grid is required for small-scale power systems like remote communication stations, hybrid transportation vehicles, commercial buildings, data centres, spacecrafts, low voltage ceiling grid applications, and data centres. Traditional load such as induction motor behaves like a DC load if operated as an inverter controlled variable speed drive [3]. As renewable energy sources like photovoltaic systems, fuel cells and storage devices like batteries are inherently DC in nature, the total microgrid can be integrated in the form of DC without any requirement of DC–AC power conversion, which improves system efficiency and reduces switching transients. DC microgrid with distributed generation and power management is explained in [4]. With efficient demand and source management, distributed generation increases reliability, reduces transmission line losses, eliminates distribution losses and curtails maintenance cost and customer price. Remote electrification, continuous power during grid disturbances and scalability enhancement are possible with these configurations in DC microgrid. Bus voltage oscillations, fluctuations in bus voltage because of irregular renewable energy sources, power inequity amid loads and sources are the main problems to be dealt with while designing or operating DC microgrids [5]. A voting-based smart energy management system for a grid connected solar-wind-biomass-based hybrid energy system using rule-based decision making is proposed in [6]. DC microgrid is useful compared to AC microgrid because of its compatibility with renewable energy sources like solar PV and with storage devices such as battery and fuel cells and with DC loads [7]. For DC microgrid with irregular energy sources and variable loads for firm and dependable operation, storage devices are essential [8]. Storage system of DC microgrid behave as a safeguard to stock excess

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ANFIS-GA Based Hybrid Control Method for Enhancement of DC Micro Grids Using Electric Spring

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Abstract

Due to the imbalance between supply and demand for electrical energy and the widespread use of Renewable Energy Sources(RES), the grid's stability is hampered and jeopardized. The intermittent and stochastic nature of RES is the root of the instability, and this issue can only be solved by using some form of load control rather than generation management. A technique known as demand-side management (DSM) has emerged as a way to consistently meet the demand for power by controlling the load rather than boosting supply.The electric spring (ES), which has a modest to moderate rating and can be used to directly commission voltage regulation at the customer's location, falls under the category of custom power devices.In this work, an effort is made to control the power consumption of the noncritical loads utilizing the proposed DC electric springs rather of moving them to different times of the day.The identification of the ANFIS parameters is suggested using a Genetic Algorithm (GA) based learning design process. The system under inquiry is thoroughly modelled, as are its control schemes. The other controllers like Artificial Neural Network (ANN), Model Predictive Controller (MPC) and Fuzzy Logic Controller(FLC) compares the performance of the ANFIS-GA controller with that obtained using optimized proportional-integral controllers. Through thorough simulation evaluations carried out in the MATLAB/Simulink environment, the ANFIS-GA control scheme's validity is confirmed. To back up the efficacy and precision of the suggested control technique, a study based on Matlab simulation results is carried out and presented.

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Electric Spring based Voltage Control of DC Microgrids using Intelligent Controllers

P.Naga Lakshmi[1]* R. Ashok Kumar[2] K. Hari Krishna[3]

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Abstract: The Electric Spring (ES) is a piece of power electronic equipment used to boost system stability, lessen three-phase power imbalance, and increase power quality. When ES modifies the conventional methods of operation where the generated energy differs from the load energy, the new operational strategy where the load energy changes with the generation energy changes will be realized. Future sustainable microgrids (MGs) require essential components like solar and wind-generated electricity. The power imbalance between the generating side and the load side will be caused by RESs' intermittency, instability, and lack of prediction accuracy, among other traits. Additionally, both the grid's security and the caliber of the power being delivered will be impacted. This paper presents an effective idea known as the Electrical Spring for controlling mains voltage despite variations brought on by intermittent renewable energy sources in the DC microgrid setting. In this study, a DC-DC converter is equipped with a Fuzzy Logic Controller (FLC) to be able to examine power quality problems like, voltage ripple and voltage regulation. The MATLAB is used to run the simulation in the Simulink environment. The results of the artificial neural network (ANN)-based intelligent controller, Model Predictive Controller (MPC) and the conventional PI controller are compared with the performance parameters that the proposed FLC controller has obtained. A study based on Matlab simulation results is conducted and published to support the effectiveness and accuracy of the suggested control strategy.

Keywords: *Electric Spring (ES), PI control, DC-DC converter microgrids (MG), Artificial Neural Network (ANN), Fuzzy Logic Controller (FLC), Model Predictive Controller (MPC).*

I. INTRODUCTION

In large and micro grids, renewable energy sources like solar and wind energy are contrasted. Without considering the effects on voltage and frequency stability of the network, the addition of this non-conventional energy leads to disruption, blackouts, and grid vulnerability. Additionally, because non-conventional energy is sporadic and changeable by nature, if its installed capacity were comparable to that of conventional energy, it would be difficult to predict its generation, which would lead to voltage and frequency fluctuations during times of power system instability [1]. Demand-side management (DSM) techniques come in many forms, including load scheduling, energy stowage use, uninterrupted control of smart loads (SL), etc. This paper describes an innovative technique known as the "Electric Spring," that is more than the electrical circuit linked to the power supply in a certain way to control the potential at a specific point. The mechanical spring is referred to by the word spring. An ES could be utilized to dampen electrical oscillations as well as offer electrical support [2]-[4].

Hong Kong University developed the idea of ES to address the aforementioned issues. There are primarily two types of loads. Some loads, such heating or cooling equipment (boiling heater, air conditioning, etc.), are sensitive to voltage variations, whereas others are not. The renewable generating sources indicated above might not be reliable. Critical load (CL) will not function normally if the line voltage swings. To ensure that CL operates normally, the modification of ES transmits voltage variations (energy) to non-critical load (NCL). The imbalance brought on by the generation of renewable energy was resolved by the new operation strategy, which modulates the load energy in accordance with changes in the generation energy [5].

The cornerstone of the fight against global warming is the decarbonization of the power industry globally. This goal should be accomplished by drastically increasing the penetration of renewable energies in the electric system. This means that issues with grid stability, dependability, and power quality in systems that rely heavily on renewable energy sources need to be taken into account. Centralized control is employed in the current power network, where power generation is mostly based on load predictions. FACTS systems are utilized to regulate voltage and flow of power. The majority of the current power grids are typically built for high or medium voltage applications and are

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EFFECTIVE INSURANCE CLAIM FRAUD DETECTION AND ANALYSIS USING SVM AND ECM ALGORITHMS

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Abstract

In Europe, insurance fraud costs businesses and individuals a total of €13 billion yearly. The property, auto, and health insurance industries are particularly vulnerable to scammers. Companies in the insurance industry are realising they need to implement digital advances quickly to curb the prevalence of fraudulent claims and strengthen their defences against future dangers. Forrester predicted that by 2021, worldwide investments in Insurtech will have reached $15 billion. It is quite expensive to the therapeutic protection structure and fraud may develop rapidly. Claims of unscrupulous protection might be made to conceal or alter data with the goal of gaining social insurance benefits. Both the protection guarantor and the protected might submit many forms of cheating. The shady health insurance companies are to blame for the widespread extortion in the industry. Forensic evidence and illustrative cases from an RN case study on extortion reveal the truth about a deliberate instance of deception. Thus, information processing techniques are used to detect the deception. The extortion of verifiable data is exposed by these irregularities. But by using several data processing methods, significant development may be possible. In order to identify and categorise claims, the article uses SVM and ECM Algorithms to construct a model. Also, we want to analyse the soft accuracy, precision, recall, etc. of all of the machine learning algorithms we can get our hands on that are utilised for classification by means of the confusion matrix. Using the PySpark Python Library, a machine learning model may be constructed for the validation of potentially fraudulent transactions.

key words :*Machine Learning Algorithm, PySpark, Fraud Case detection, classifications.*

I. INTRODUCTION

Annually, insurance fraud in Europe costs businesses and individuals in the region of €13 billion. Property, vehicle, and health insurance are particularly vulnerable to fraudulent fraud. In order to curb the prevalence of fraudulent claims and strengthen defences against future dangers, insurance companies are realising they must rapidly incorporate digital advancements. Forrester predicts that by 2021, Insurtech will have attracted worldwide investments of more than $15 billion.

Explain how your machine plans to use AI and ML to improve its learning to detect insurance fraud.

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TRACKING DOWN INSURANCE CRIME: METHODS

Insurance insurers lose both time and money investigating fraudulent claims. There are just too many claims coming into insurance companies every day for them to manually verify each one.

Older computers could only search basic analysis and searches for red flags, which indicated fraudulent fraud. For this system to work, fraudulent claims needed to conform to a certain format. As a result, technological advancements are a boon to the insurance industry since they provide revolutionary answers that can be used throughout the

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Lagenaria Siceraria Preparation based on Activated Carbon for Adsorption of Cr(VI) From Polluted Water

Oguri Sreedevi and Dr. Darshana Rodric
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Abstract:

present generation removal of chromium ions plays very important role for performing charcoal. Chromium ions are removed from polluted solutions which are coming from Lagenaria siceraria plant stems. By using XRD, FTIR and SEM- EDAX will perform the analysis of absorbed substances in surface chemistry. To increase the initial concentration adsorption is utilized. While performing adsorption process removal of contact time process is also involved. Lesser elongation, ionic strength is obtained for pH dependent based on metal ion. Second order of structur odel is followed continuously in the structure of data. Suggestions are given in thermo dynamics like activation enthalpy, activation entrophy, activation Gibbs free energy, and activation energy, has been from an idea and possible of mechanism.

Keywords: Characterization studies, Chromium (VI), adsorption, Adsorption isotherms and Kinetics, Lagenaria Siceraria activated carbon, Chromium(VI) , application.
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I. INTRODUCTION

There is a long search for sustainable chemistry in a centre stage. Heavy metals are dangerous to environment present in waste waters. There removal before waste water is visible. These substances are harmful to the environment. Chromium is poisonous metal used in liquid waste discharged in industries. These substances are present in paints, coloured substances, leathers, metal finishing. Chromium has several oxidation numbers.

There is a variety of treatment for chromium have been described containing waste waters which include exchange of ions, reverse osmosis, the action or process of precipitating a substance from a solution, electro chemical reduction of conversion of reduced species, electro coagulation involves waste water treatments, and solid phase extraction is a mixture of separating to physical properties and chemical properties , resin chelation, polymer based membrane, cementation process binding together particle, electro kinetic remediation is a process using a direct current to remove heavy metals from soil are the methods to accomplish the small size of metal concentration.

Brazilian pine - fruit shell is a food residue, banana peel, carica papaya, Anaebana is a bacteria, vetiveria of small grasses,And date tree leaves are the teqehnices to removal of metals from wastage. These raw plants materials are absorbed organic compounds such as cellulose of complex organic polymers, Pectin is a soluble poly saachride present in ripe

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RESEARCH ARTICLE OPEN ACCESS

Design of Single Precision Floating Point Arithmetic Logic Unit

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ABSTRACT
The main aim of Floating point Arithmetic logic unit (ALU) is presented that in stepwise design, all arithmetic operations like Addition, Subtraction, Multiplication and Division are combined to form a Floating point ALU unit.These operations are executed on 32-bit floating point numbers. Each operation is executes individual to each other.This unit uses the IEEE-754 single precision format.This paper presents the Design of 32-Bit floating point Arithmetic logic unit. The methods of Addition,Subtraction,Multiplication and Division are simulated Verilog HDL using Xilinx Software,14.7 Version.The logical method for Addition and Subtraction operation is expanded in order to decrease the no.of gates used.The results shows that the RTL view and Synthesis reports.

Keywords: Delay, Floating point number, no.of LUTS, Verilog, Xilinx.

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I. INTRODUCTION

In the newest technology, Precision plays a major part in more applications like Digital signal processing. Floating point numbers [1] are used to represent noninteger fractional numbers and are used in most engineering and technical calculations.The most commonly used floating point standard is the IEEE Standard.Acoording to this standard, floating point numbers are represented with 32bits(single precision). Floating point numbers are used in more applications are such as telecommunications, medical, imagining, radars etc.In this paper the operations are executed on 32-bit floating point numbers and the The logical method for Addition and Subtraction operation is designed to getting better performance which is required in signal computation applications. The design of floating point ALU is used to get the aim of small area. Then we use Verilog hardware description language (VHDL) [2].It is a user defined language .In VHDL we use two approaches to get better performance .In the two approaches, we use top down approach. Topdown approach means stepwise design. The HDL is used to characterize the performance of overall circuit with respect to speed and area. In the ALU, The main block of central processing unit (CPU) that handles all format have 32 bits to represent a floating arithmetic operations, logical operations etc.

The IEEE 754 floating point standard format has dividing into three main parts. They are Sign(1 bit), Mantissa(8 bits), exponent(23 bits).

IEEE 754 floating point format:

The IEEE 754 floating point format have 32 bits for representing a floating point number.

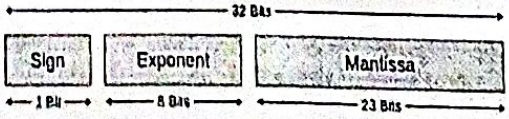

Fig 1: IEEE 754 floating point format

The standard format to represent floating point numbers which has three major parts as shown in figure1. They are sign, mantissa and exponent. The sign bit carries 1-bit where '1' and '0'represents a

AN EFFECTIVE SMOTE APPROACH FOR DETECTING FAKE AND CLONE OSMN ACCOUNTS

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ABSTRACT:

Online Social Media Networking has developed as one of the most prominent methods for exchanging information and communicating with people in daily life. In recent years, social media platforms such as Instagram, Twitter, and Facebook have progressively grown in importance as means of disseminating information. Our goal is to identify fake accounts by studying many features that propagate dangerous information in a real-time setting. Fake profiles are created by stealing the identity of a genuine user's profile content and creating a similar profile with the user's credentials. A detection approach for detecting Fake and Clone profiles on Twitter is presented in this study. Fake profiles are recognised using a set of principles that successfully differentiate between authentic and fake profiles. The detection of fake accounts (fake followers) on Twitter has been studied in the proposed work by selecting the relevant features that define the profile's characteristics users. The SMOTE technique is presented here to efficiently categorise an account as real or fake. The (Synthetic Minority Oversampling Technique)SMOTE method produced an overall accuracy of 97.41 percent.

Keywords:
Machine learning, twitter detection, (Synthetic Minority Oversampling Technique)SMOTE approach

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Online social networks (such as Facebook, Twitter, and Instagram) have risen to prominence in recent years as a go-to place for web users to stay in touch with friends, share ideas, and reminisce about the events of the day.

People use social media to express their thoughts, news, events and to record their everyday activities such as eating, drinking, travelling and so forth. Consequently, malevolent users may monitor the activity of everyone in their timeline, turning Twitter into a haven for users. These users who are having hostile motives establish fake profiles and share different fake articles, fake links and photographs. Unfortunately, since so many users on the internet don't know about these fake accounts, they've been taken advantage of. As a result, everybody who uses Twitter must be familiar with how to spot fake accounts.

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ATTENDANCE ANALYSIS USING RASBERRY PI AND K-MEANS

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ABSTRACT: In many organizations, colleges and schools attendance plays a major role. In any organizations calculate the employee's salaries based on the attendance and in the student perspective attendance is important factor to promote to higher classes. But they maintains the attendance manually .this results may increase the manpower and duplication of work. In this paper, to overcome those problems record the attendance and attendance analysis is done automatically using raspberry pi and RFID technology and use fingerprint for authentication.

Fingerprint-based attendance system ensures that there is a minimum fault in gathering attendance and reducethe time and cost required to manage attendance by paper and also reduces human effort and making the process very simpler by using raspberry pi. The timing is set to fingerprint sensor and that is connected to the raspberry pi. Then those attendances are gathered from the server and apply the data mining algorithms like KNN to know the overall class percentage who promote to final exams or higher classes. It also contains the feature that is the attendance message is sent to the authorized person through an e-mail.

I.INTRODUCTION

Attendance system plays a vital important role in an education system. The student's attendance percentage decreases due to irregularity. This will make a problem of student life. Attendance indicates that the Presence of a person in a school, college and working place. Now-a-days percentage of attendance is the major issue in the education system. To maintain perfect attendance, here we use an automatic mail processing system. In a day to day life, we are using any one of the biometric sensor (face recognition sensor,Iris sensor, thumbprint sensor, brain mapping sensor etc) for the presence of a person like in or out.To avoid the problems with the attendance we are going for biometric sensor using an e-mail. Here we are using a biometric sensor as a thumbprint sensor. After entering into any working place or educational institutions Each and every member has to give their fingerprint for their attendance and how much time they are present in that place. It compares the current fingerprint by using raspberry pi withfingerprints those are already in the database. If it matches then the attendance with time is send to the authorized person's mail automatically. By this we can reduce the time and it makes the process easy and efficient. And we collect the all member's attendance information from raspberry pi ten

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IOT BASED GAS LEAKAGE MONITORING SYSTEM USING FPGA

Ms. SANAKA BHAVYA SRI[1], Ms. SOMAROUTHU VARALAKSHMI[2], Ms. RAVIPATI DIVYA[3], Ms. PALLAPATI LAVANYA[4], Ms. THOTA NAGA MALLESWARI[5], Mrs. GUDURU KRISHNAVENI[6]

[1,2,3,4,5]STUDENT, DEPT. OF ECE, BAPATLA WOMEN'S ENGINEERING COLLEGE, AP, INDIA
[6]ASST PROFESSOR, DEPT. OF ECE, BAPATLA WOMEN'S ENGINEERING COLLEGE, AP, INDIA

ABSTRACT

Building a cloud based monitoring system is very important to reduce the cost of maintaining servers, to avoid data losses and to make the access easy with multiple internet connected devices at the same time anywhere in the world. Using Internet of Things (IOT), we can control any electronic equipment in homes and industries. Moreover, you can read a data from any sensor and analyze it graphically from anywhere in the world. Here, we can read gas leakage in industries at a time we can measure and upload it to a ThingSpeak cloud using FPGA. FPGA KIT fetch a data of different gas sensors like MQ2,MQ6,MQ135,MQ7 sensors and Process it and give it to a ESP8266 Module.ESP8266 is a Wi-Fi module, it is one of the leading platform for Internet of Things. It can transfer a data to IOT cloud.

Key words: IOT Cloud, FPGA, Wi-Fi Module, Things peak.

I. INTRODUCTION

Toxic and inflammable gases are widely used in industry, heating systems, home appliances and vehicles [1]. This includes combustible gases like propane, ethane, butane, methane, ethylene etc. Liquefied

Petroleum Gas (LPG), also referred to as propane or butane are normally stored in pressurized cylinders in liquid form and vaporize at normal temperatures. A leakage can ignite and cause explosion. Therefore, the leakage detection of gases has gained more interest in recent years especially in fields of safety, industry, environment, and emission control [2]-[4]. A conventional gas leakage system uses on-site alarms as a warning to indicate the leakage [3]-[6]. The drawback of the conventional leakage system is that it becomes ineffective in the absence of first response team on-site. This may delay the preventive actions causing damage to life and environment. Therefore, there is a need for a system to detect the leakage and send the information to the first response team through wireless media.

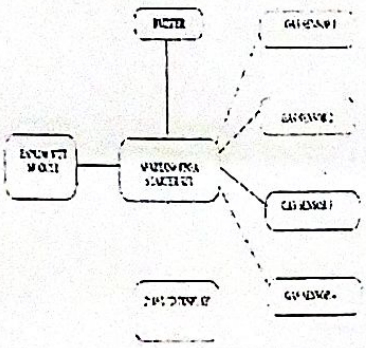

Fig 1: Block Diagram of Gas Leakage Detection System

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Detection and Prevention of Wheel Unbalancing and Tire Burst in Moving Vehicles

Dipak Ranjan Jana, Sumalatha Emmela, Ch.Monika, D.Archana, K.Thulasi Priya, K.Yamini

ABSTRACT- *Fatal accidents are increasing day-by-day due to the failure of wheel bearing, unbalancing of wheel and tyre bursting due to increase in the temperature. Bearing is the most important mechanical device on which the wheel performance of a vehicle depends. Lack of proper periodic maintenance of the bearing leads to the failure of bearing, which results in wheel misalignment. Hence, tyres with wheels come out from the axial in moving condition, which results in accidents. Bearing failure can also be due to, bearing buckling, scratches, nicks, discoloration, corrosion and crack. This can be due to lack of lubrication or overheating etc. Also due to improper tyre pressure, harsh braking and increase in the temperature of the tyre, tyre gets heated up causing tyre bursting which leads to fatal accidents. The main objective is to detect tyre temperature and wheel alignment deviation, thereby providing indication through audio-visual system which prevents accidents of the vehicle and the driver from an injury or death. Hence, we have used ARDUINO UNO, ULTRASONIC SENSOR, LEDS, DHT-11 SENSOR and BUZZER.*

KEYWORDS: *Wheel Bearing, Unbalancing, Maintenance, Alignment*

I. INTRODUCTION

This paper focuses on a new idea to prevent vehicle accidents due to tyre bursts and wheel misalignment. Tyre bursts are common on highways where vehicles move at very high speeds which lead to fatal crashes when the vehicle loses stability.

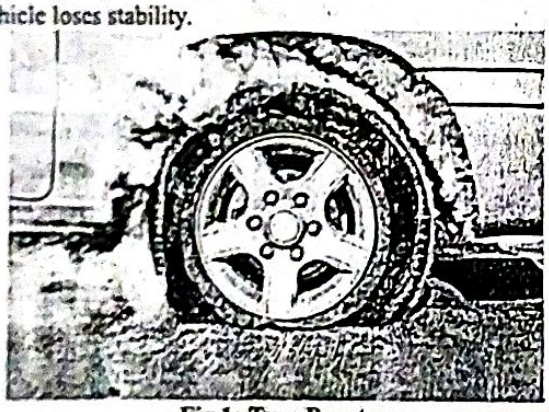

Fig 1: Tyre Burst

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The new design prevents this stability loss due to improper tyre pressure [1], harsh braking and increase in temperature by providing an indication. There is no need for the driver to get panic as the vehicle will be completely stable.

This will completely avoid accidents and provides safety for the passengers. Similarly, wheel misalignment due to bearing failure is common. By providing an indication to the driver to stop the vehicle, prevention of driver from an injury or death can be done successfully. Also, the damage being done to the vehicle can be avoided.

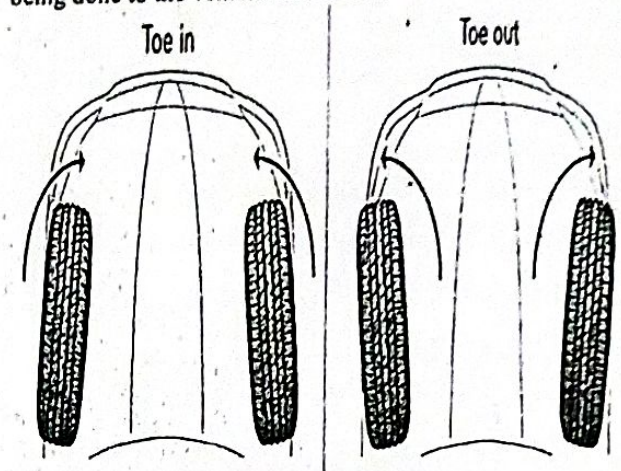

Fig 2: Wheel Misalignment

II. RELATED WORKS

Ryosuke Matsuzaki et al. discussed the key technologies of intelligent tires focusing on sensors and wireless data transmission. Intelligent tires are smart tires equipped with sensors for monitoring air pressure, applied strain, temperature, acceleration, wheel loading, friction and tread wear which improve the reliability of tires and tire control systems such as Anti-lock Braking Systems (ABS) [2].

S Patwardhan et al. presented the scenario of tire blow out and its effects on lateral control of automobiles in Intelligent Vehicle Highway Systems (IVHS) environment [3].

Mulla Minaz et al. proposed a TPMS system (Tyre Pressure Monitoring System) which detects the tyre pressure and gives indication to the driver about the tyre pressure. Sensor is used to detect the changes in the tyre pressure. This prototype is fully based on software version of Raspberry Pi [4].

Balakrishnan.T et al. stated the use of vehicle dashboard for the measurement of automobile wheel parameters such as camber and toe. The alignment of the wheel is monitored using accelerometer sensor which is fixed in the rear axle [5].

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A System and Method for Detection of Obstacles on Moving Vehicles on Either Side 360^0

Dipak Ranjan Jana, Turaka Sowmya, M.Leela Priyanka, N.V.Bhargavi, P.Sannihitha, P.Sandhya

Abstract-*This work provides information to determine the sudden hazardous living or non-living materials in front of vehicles on either side, i.e.180 degree across will indicate the drivers for stopping the vehicles automatically with ANDON and BUZZER. Then the vehicle will automatically turn on either side safely. For Sudden detection of obstacles, specifically waterfall at certain height, rock rolling down, landslides, earthquake, animals, abnormal things and tree fallen on the road 90 degree on either side. ANDON and BUZZER system is for visual indication along with voice monitoring for indication to front and back vehicles. Successful display of distance and identified object will be displayed in the LCD. The mainly used components for this project are the use of preventing and corrective action through ARDUINO MEGA, ULTRASONIC SENSORS, VIBRATION SENSOR SW-420 and LDR MODULE.*

Keywords-*ANDON and BUZZER, Embedded, Landslides.*

I. INTRODUCTION

Road accidents (RA) are responsible for 1.2 million deaths worldwide each year. RA will become the third largest contributor to the global burden of diseases after Ischemic Heart Diseases (IDA) and depression. So, we conducted retrospective study on road accidents in the hilly and highway areas. The problem of accident is very acute in highway and hilly areas transportation due to sudden moving or stationary objects approaching in front /left/right while driving. We identified landslides, sudden rock rolling, and rainfall on NH-229 on the Bhalukpong road, NH-29 (Connecting Assam and Nagaland) and NH-39 (Dimapur-Kohima). Here, the landslides, cloudburst, rock rolling happens all of a sudden and cannot be predicted, due to which many people lost their lives. It has been also noticed that while driving in NH-29, sudden approach of animals are seen due to which many accidents occur. To find out the sudden waterfall (or) ice burg fall on the road (or) sudden appearance of a huge amount of water with a height over the road at a degree of 90 degree either side(left/right).Sudden earthquake (or) landslide will be detected. In this Universe, now a days there occur a sudden problem due to act of God such as landslides, rock rolling, fall of Ice burgs, earth quakes on road.

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To eliminate this problem, we have used different type of embedded devices, which gives prior information, so that not only it gives corrective action but also it gives the preventive action.

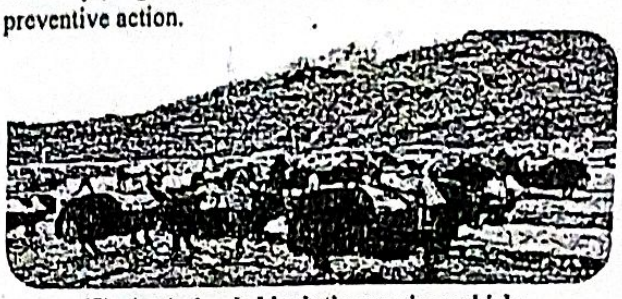

Fig.1 : Animals block the moving vehicle

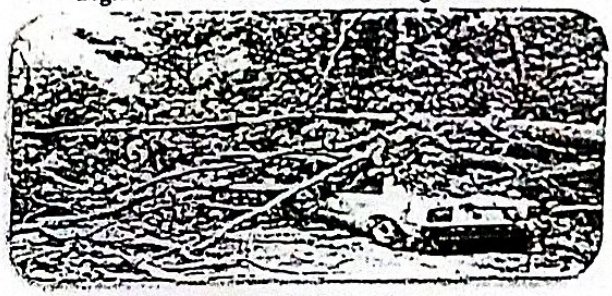

Fig.2 : Accident due to Tree-fallen

Fig.3 : Ice Bergs

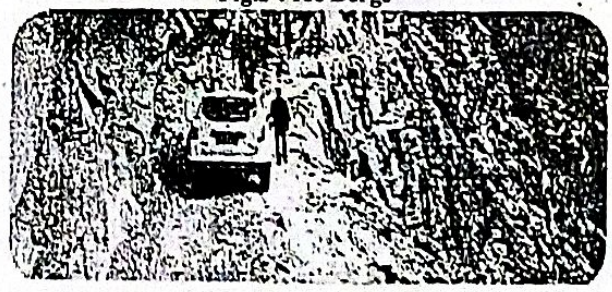

Fig.4 : Rock Rolling

II. RELATED WORKS

Anil Kumarjoshi et al. [1,2] proposed that developing countries like India where the hilly regions of north India (Uttarakhand) the accidents are caused due to poor infrastructure and unattended hazarded zones, the total number of road traffic accidents in hilly districts are the second major cause of accidents the main causes were bad weather conditions.

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Generation of Electricity Using Hydrogen Fuel Cells

Kallakunta Ravi Kumar[1], Dr. Dipak Ranjan Jana[2], Suneetha Emmela[3], Emmela Sumalatha[4], A V Mutyalamma[5]
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ABSTRACT

The climatic changes that are becoming visible today are the major challenges for the Global Research Community. Electricity generation is the process of generating electric power from the sources of primary energy, which is found in nature. The main aim of this work is to use hydrogen as an alternative source of energy. Hydrogen is the most abundant element in the Universe and thus, it is a never-ending source of energy. It is an energy carrier, which stores and delivers energy in the usable form, which can be produced from various domestic resources such as fossil fuels like natural gas and coal, biomass and water electrolysis. Also, Hydrogen fuel cell technology represents the alternative solutions for future clean energy systems. In the proposed work, hydrogen is converted into electric energy by using fuel cells, which do not produce any toxic gases. Fuel cells directly convert the chemical energy in hydrogen into electricity with pure water and potentially useful heat, as the only by-products. The proposed work also includes the current technologies used for hydrogen production from steam reforming, partial oxidation, auto-thermal processing and photoelectrolysis process.

Key words: Hydrogen fuel cells, Electrolysis, Fuel cell technology, Electricity generation.

1. INTRODUCTION

Hydrogen is the most abundant element on earth, which consists of only one proton and one electron. A fuel cell combines hydrogen and oxygen to produce electricity, heat and water. Fuel cells are similar to batteries, where both perform the energy conversion by a chemical reaction into the usable electric power. Fuel cells can produce electricity as long as hydrogen is supplied and these operate best when we supply pure Hydrogen[1]. Some fuels like natural gas, methanol, gasoline can also be reformed to produce the hydrogen required for fuel cells. Fuel cells can be used to produce power for an electric motor as well as directly producing electricity in place of a generator. In both the cases, they facilitate the replacement of a gasoline or diesel engine. Also, fuel cells do not produce any greenhouse gases or air pollutants. The product of the chemical reaction is only water and a small amount of heat. Fuel cells are mainly used as power sources in remote locations like spacecraft, remote weather stations, large parks, communication centres, rural locations such as research stations, military applications etc. The fuel cell system running on hydrogen is very compact and light weight. The annual production of hydrogen is estimated to be around 55million tons with its consumption increasing by approximately 6% every year. At the end of October 2019, there were around 80 fuel cell power plants operating in the United States with a total of 190MegaWatts of electric generation capacity. Both the electrolytic and plasma processes are highly efficient for hydrogen production, but these are considered as energy intensive processes.

2. OBJECTIVES

- To increase the electrical efficiency and durability of various fuel cells used for power production.
- To reduce the cost to a level competitive with conventional technologies.
- To increase the energy efficiency of production of hydrogen from electrolysis of water and renewable sources while reducing the capital costs.
- To reduce the rare earth elements, thereby reducing the greenhouse effect in the atmosphere.
- To reduce the dependence on imported hydrocarbons
- To contribute to economic growth and provide employment in country.

3. VARIOUS METHODS TO PRODUCE HYDROGEN GAS

Hydrogen can be produced by various processing technologies such as thermal processing, electrolytic processing, photolytic processing and so on.

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Design and Implementation of N-Point FFT Processor for MIMO-OFDM Systems using Radix-N

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Abstract: ***This paper presents Single-path Delay Feedback (SDF) architecture for implementing Fast Fourier Transform (FFT) for Multiple-Input Multiple-Output Orthogonal Frequency Division Frequency Multiplexing (MIMO-OFDM). The architecture of Single-path Delay Feedback and memory scheduling are the basic concepts used to implement the FFT processor with variable length. Depending on the SDF architecture, we implement the FFT processor-based design which is proposed in this paper. In this paper, we use MIMO-OFDM high data rates, high efficiency and high throughput. In this paper, we use radix-4 algorithm to implement the sequence because the speed of the operation is high. The functionality verification and the synthesis are carried out by using XLINIX.14.2.***

Keywords: Single-Path Delay Feedback (SDF), Fast Fourier Transform (FFT), Multiple-Input Multiple-Output (MIMO), Orthogonal Frequency Division Multiplexing (OFDM), Radix-4.

I. INTRODUCTION

Fast Fourier Transform (FFT) is mostly used for many applications. By using this, we easily evaluate the Discrete Fourier Transform (DFT). Among many communication applications digital signal processing is one which uses Fast Fourier Transform.

Decimation in time and Decimation in frequency are two different ways to perform Fast Fourier Transform. FFT is the main block in OFDM as it deals many operations to be done.

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By using, MIMO the throughput elevated greatly when compared with existing systems. The lifetime of MIMO-OFDM systems is high while using in wireless The many applications come under the credit of OFDM are wired communication modems such as digital subscriber lines to wireless communication modems.communications. When we combine MIMO with OFDM, the issues are overcome upon each other. When FFT is combined with MIMO we get the results at high speed. By using the combination of MIMO-OFDM with FFT the results are getting a very fast manner, high reliability, high efficiency and high throughput. For these reasons we use a combination of FFT with MIMO-OFDM.

FFT architectures are different types. They are memory-based, cache memory, sequential, parallel, parallel iterative, array and pipelined architectures. Pipelined architectures helped in a better way for the implementation of FFT.

II. ANALYSIS LITERATURE

Fast Fourier Transform is the major block in the Orthogonal Frequency Division Multiplexing systems [5]. OFDM has assigned in a large range of applications from wired communication modems, such as digital subscriber lines to wireless-communication modems, like IEEE802.16 WiMAX or 3GPP Long Term Evaluation (LTE), to process baseband data [5].

Y.G.Li, J.H. Winters and N.R.Sollenberger proposed Multiple-Input Multiple-Output devices, data throughput can be elevated drastically [8]. Hence MIMO-OFDM systems feed data rate and reliability in wireless communication [8]. Without a proper design, the complexity of the FFT processor in MIMO systems increases linearly with the number of data streams [8].

B.G.Jo and M.H.Sunwoo proposed pipeline schemes are the architectures most widely adopted for the implementation of FFT [7]. From the memory access perspective, in-place memory updating schemes perform the computation in the three phases: writing in the inputs, updating intermediate values and reading out the results [7]. In the updating phase, the processor reuses the radix-r processor, such that a single radix-r butterfly is sufficient to complete N-point FFT computation [7]. However, it is non-overlapping characteristics that make the butterfly idle in-memory write and read phases overall process is lengthy [7].

T.S. Basha and others proposed high speed MDC architectures and memory scheduling are very much suitable

Accident Prediction and Crash Recovery by using Car Black Box

P. Swetha Keerthi, SK. Asma Parveen, P.A.S.Sree Sowmya, R.Vyshnavi, Y.Jyosthna Venkat, B. MahaLakshmi

Abstract: In the desire of experiencing the taste of speed and not following the traffic rules many people are losing their lives in the road accidents. As they were happening far from the living areas the others will not be aware about these accidents and also due to lack of information regarding the accident, the medical facilities were also not able to reach 'em. To overcome these situations we have designed a GSM-GPS based intelligent vehicle tracking system using Raspberry Pi controller. This system consists of light sensor, MQ135 Alcohol sensor, temperature sensor, accelerometer, video recorder, limit switch sensor, GPS and GSM modems to prevent vehicles from collisions and alert while colliding. All the sensors are connected to the Raspberry pi controller. In addition to this an SD card is provided to collect and save the data from the sensors. We can recover this data from this SD card to know the reason behind the accident and can avoid it from happening again. When an accident is occurred the information about the accident will be sent to the preregistered number through an sms. The main feature of this system is whenever the sensors records a value beyond the specified value whether it is about crossing the lane line, not wearing seat belt, the driver is drunk, or reaching close to the other vehicles etc.., an alert message will be sent to the preregistered number.

Key words: MQ135, Accelerometer, Raspberry Pi, Limit switch, GPS, GSM.

I. INTRODUCTION

Now a day, the technology has made amazing facilities to have well designed cars. Some of the cars have more facilities compared to branded cars. They have more speed and other Special features so that we are introducing devices which can control or monitor the parameters of car.

We have designed a system; In case any accident occurs, it records all the parameters and helps us to get rid from those accidents. It is developed to record some parameters like informational data such as temperature of engine, gas leakage level, alcohol level etc., for some investigations when an accident occurs by using GPS&GSM technologies.

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One can able to find the location of the accident and GMS sends message to a particular phone number which the user already registered. So that first aid can be provided as early as possible. If any accident occurs then the details of that vehicle e.g. position of the car, area of an accident will send to the nearest rescue team for help. Here location of a particular vehicle or area can be identified by using 24 communication satellites which transmits signals globally round the clock and GPS receiver is used to verify the latitude & longitude accurately.

In this project memory device is used to store the data like gas leakage detection, engine temperature, alcohol detection and location of car etc., and this project is developed by using Raspberry Pi.

This proposed system also having a security module which contains data encryption to secure the stored data on SD card and it aims to achieve analysis of an accident by sensors which are placed strategically around the vehicle.

II. OVER VIEW OF THE SYTEM

Raspberry pi: A powerful feature of the raspberry pi is the row of GPIO (general purpose input/output) pins along the top edge of the board. A 40-pin GPIO header is found on all Raspberry pi boards. Raspberry pi is chosen over Arduino because of its additional features i.e., Bluetooth, Wi-Fi and video recorder. Accelerometer ADXL345 measures the acceleration of the vehicle when crash occurred. This sensor is applied in X, Y, Z directions for detection of accident. Here the accelerometer used is MEMS accelerometer. Light sensor detects the functioning of Flashers, Break lights, Head lights and Rear lights at the time of crash. Temperature sensor DHT11 measures the temperature of engine, also measure amount of heat energy or even coldness that is generated by an object or system by producing either an analogue or digital output. When the driver is high in alcohol the alcohol sensor MQ135 detects it and warns the driver. When a opposite vehicle approaches close to the vehicle the ultrasonic sensor (HC-SR04) gives warning to the driver. This sensor is used for measuring distance gauge .It works by sending sound waves. The Infra red sensor uses one or more cameras to recognize lane markings on the center and sides of the road. If the system detects drifting towards a lane marking, without a turn signal, it will warn the driver. A limit sensor is used to warn the driver, if the driver is not put on their seat belt . The sensor uses push button to determine it. A GPS module is used to find the location of accident occurred and it sends a message to the registered numbers by the use of GSM. An alert message and reason for the happening of accident is also sent through an GSM module. By plugging a camera to the raspberry pi through the camera serial interface (CSI) slot,

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A Novel Offset Feed Annular Ring Dielectric Resonator Antenna for Bandwidth Enhancement

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Abstract: *This article presents a design and analysis of novel offset feed annular ring dielectric resonator antenna for bandwidth increment technique. The proposed antenna design consists of a square-shaped question mark feed with an annular ring. The proposed design generates triple-band characteristics by changing the feed width. The proposed design operates in the following frequency bands 2.2-2.7 GHz, 3.13-3.94 GHz & 5.7-7.15 GHz with corresponding bandwidth of 22%, 23%, 21%. The applications of the proposed antenna are like Wi-Fi (2.4 GHz), mobile broadband, broadband radio service (3.5 GHz), Radars, commercial WLAN (6.8 GHz).*

Keywords: *Triple band, annular ring, Wi-Fi.*

I. INTRODUCTION

Dielectric resonator antenna is an antenna was proposed by Professor S. A. Long in the early 1980s.Now a days DRAs are more popular among all antennas. Dielectric resonator antennas are winning antenna elements as they offer several advantages over different types of antennas[1]-[6].Microstrip antennas offer more conduction losses, less bandwidth, and low radiation efficiency. To overcome the above problems, DRA is another approach for the researches in present growing technology. The bandwidth of DRA depends on different parameters such as the excitation method, shape, dimensional parameters, and dielectric constant of DRA material. By introducing the air gap in the middle of the ground plane and dielectric resonator can increase the bandwidth, making a cavity-backed dielectric resonator antenna to increase gain and bandwidth [7].

For many years, several bandwidth improvement techniques have been developed for DRAs. DRAs are mainly used at microwave frequencies and higher. One of the best methods for improving the bandwidth of cylindrical DRA is to detach a segment of the central chunk of the DRA to form halo or annular i.e. annular ring DRA.

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An annular ring-shaped DRA is another type of DRA. This antenna offers more bandwidth, low Q factor, fabrication is easy. The Annular ring DRA offers a firm configuration which does not use the parasitic elements to enhance the bandwidth [8-9].

In this design, the bandwidth is very less by taking the cylindrical DRA or rectangular DRA about (15%). So this annular ring DRA with the height of (8mm) is used for bandwidth enhancement. The material used for the substrate of the proposed antenna is FR4 . By introducing a circular patch along with the feed and adjusting the height of the annular ring, the bandwidth is increased. The article is orderd in the following manner :Antenna geometry, Antenna explanation, Results, Conclusion.

II. ANTENNA GEOMETRY

The feeding structure and proposed antenna are shown in Figs.1a and 1.b respectively. The proposed antenna is designed on an FR4 substrate (εr=4.4). The annular ring DRA, alumina (ε_r=9.9).By optimizing the dimensions of the feed (2.5mm) for best impedance matching (53.1Ω). The vertical strip is used to improve the gain. The dimensions of the proposed antenna are given in Table1.

III. ANTENNA EXPLANATION

By using CST microwave studio the evaluation of the proposed antenna is carried out.

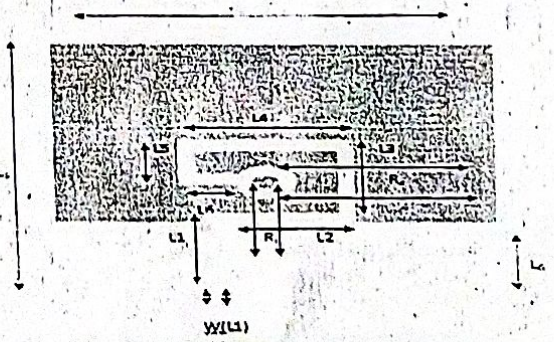

Fig.1.a . Feeding structure (stage4)

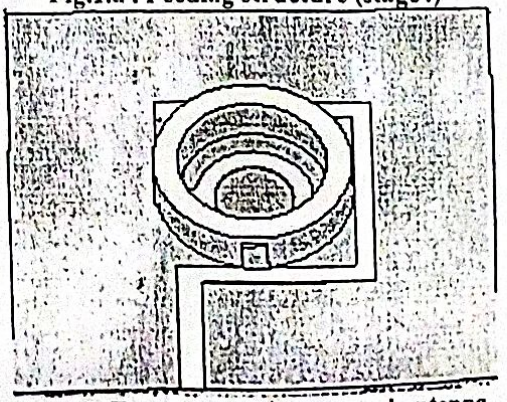

Fig.1.b. Top view of the proposed antenna

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Bandwidth Enhancement of Tri-band Rectangular Dielectric Resonator Antenna using Novel Offset Feed for WLAN/WIMAX Applications

D. Ramyasree, Y. Anusha, T. Harika, N. Siva Chathanya, T. Sowjanya, G. Divya

Abstract: In this article, a novel offset microstrip line feed Rectangular Dielectric Resonator Antenna is used for bandwidth enhancement. The parameters such as Bandwidth, Return Loss and Radiation efficiency are improved in the proposed antenna. A comparison is also shown for the proposed feed structure with and without conformal strips. The improvement in the bandwidth is observed from 25% to 65% by optimizing the antenna design parameters. It works in three frequency bands, that is, 2.03-3.69 GHz, 3.86-7.26 GHz, and 7.32-9.26 GHz. The proposed antenna is appropriate for WIMAX/WLAN applications.

Keywords: Annular ring, Conformal strips, Microstrip line, Rectangular DRA.

I. INTRODUCTION

The dielectric resonator antenna (DRA) has been widely studied due to its several advantages, like the small size (since DRA is made of high dielectric constant), ease of fabrication, high radiation efficiency, Wide control over size and low production cost[1].The DRA is made up of no conducting parts and has very small dissipation loss (So, it can handle high power)[2] and offers more bandwidth[3]. The rectangular DRA is preferred in this paper because it is characterized by three independent geometrical dimensions (length, breadth, height) this offers more design flexibility[2] as compared to the cylindrical DRA. Degenerative mode in RDRA can be avoided by properly choosing the aspect ratios (length/height and width/height). It is easy to fabricate from raw dielectric material. Due to these, the Rectangular DRA is more popular and better choice other than cylindrical and hemispherical. The paper is organized as follows: In Section II, Parametric Analysis of different shapes of feed. In Seetion III, Stage 3 with conformal strips. In Section IV, Conclusion.

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II. PARAMETRIC ANALYSIS OF DIFFERENT SHAPES OF FEED

Here in proposed design, DRA is placed over Novel offset microstrip feed as DRA is made up of non-conducting material like alumina[5], it does not suffer with conduction losses as Microstrip Patch Antenna does. Due to the hardness of the DRA material, it is difficult to drill a hole for co-axial probe feeding. So, microstrip line feed is preferred over co-axial probe feed because fabrication of microstrip linefeed is easy to fabricate and also provides good impedance matching to enhance the bandwidth of the proposed design, the feed shape is modified, which is explained as follows.

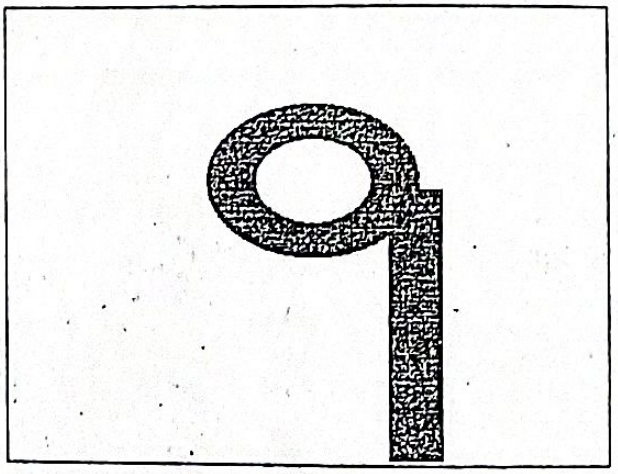

Fig1: Stage 1

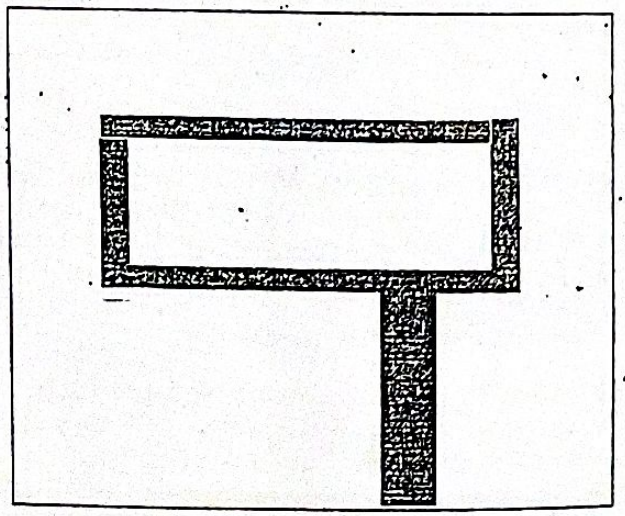

Fig2: Stage 2

Intoxicated/Sleepy Driver Detection on A Moving Car

K. Vasavi, Suneetha Emmela, K. Navya, L. Manjusha, Ch. Prathyusha

Abstract: *The main objective of this paper is that the ignition of car stops automatically. When the driver is intoxicated/sleepy before starting, after starting and while moving of vehicle, the car ignition will be stopped based on intoxicated driver position, gestures, voice recording, Eyeball movement and sleep mood. We introduced to predict the accident with the location tracking which is immediately sent to the server. This paper explores location, map matching and data associated with the positioning and predicts the accidents by intoxicated drivers in cars. This paper work provides safety and security of human beings not only for driver but to the passengers also.*

Keywords: *ANDON, Raspberry pi 3B+ with camera, Relay, Buzzer, GPS &GSM Modules.*

I. INTRODUCTION

Now-a-days every system is automated in order to face new challenges in the global market competition. Present days automated system has fewer manual efforts, operations, flexibility and accurate. At present, every domain prefers automated systems and they play a crucial role in competitive market. Automated systems in the field of electronics are giving satisfactory performance.

We usually come across intoxicated/sleepy and driving cases where drunk lash their cars under influence of alcohol causing damage to assets and life. So, here we propose a creative system to get rid of such cases. Our proposed system would be continuously monitoring the driver face. So, if a driver is drunk and tries to drive the vehicle, the ignition of the car will fail to start.

The raspberry pi 3B+ is a just like a computer developed in the UK by the raspberry pi foundation. All models feature a Broadcom system on a chip (Soc), which includes an ARM and an on-chip graphics processing unit (CPU). CPU ranges 700MHz TO 1.2Hz for the pi 3 and on-board memory ranges from 256 MB to 1GB RAM. Secure digitals SD cards are used to store operating system and program, HDMI and composite video output and a 3.5 mm phone jack for audio. Lowest level output is provided by a number of GPIO pins. Some model has an 8P8C ethernet port and Wi-Fi board configurations in 802.11.

The existing system detects methods of driver drowsiness and can be divided into three categories:

- First category is based on the information which displays drowsiness detection on LCD.
- Second category is the method of physiological gesture that includes EEG, ECG, EOG.
- Third category system is wheel chair operation.

II. PROPOSED TRACKING SYSTEM

This method is carried out to crack geographical information and sends an SMS alert about accident. So, the police can quickly locate the location through the GPS MODEM, after receiving the information. Then after conforming the location mandatory action will be taken. [1].

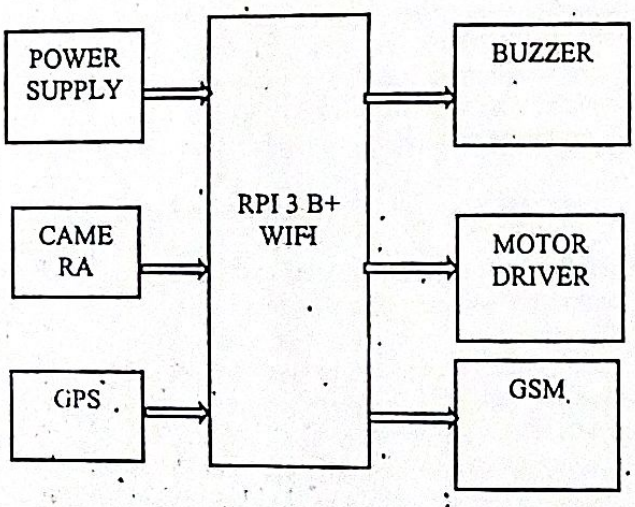

Fig1: Block Diagram

By using web camera, the images which are captured undergo image processing using open CV with the help raspberry pi. The captured images are used to detect the face and eyes by using Haar feature [3].

III. METHODOLOGY

Here the hardware and software of the GPS network were developed. The vehicle tracking system is an electronic device, which is installed in the vehicle such that tracking of vehicle will be easy and information can be sent to the family at that particular location.

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Generation of Electricity Using Hydrogen Fuel Cells

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ABSTRACT

The climatic changes that are becoming visible today are the major challenges for the Global Research Community. Electricity generation is the process of generating electric power from the sources of primary energy. which is found in nature. The main aim of this work is to hydrogen as an alternative source of energy. Hydrogen is the most abundant element in the Universe and thus, it is a never-ending source of energy. It is an energy carrier, which stores and delivers energy in the usable form, which can be produced from various domestic resources such as fossil fuels like natural gas and coal, biomass and water electrolysis. Also, Hydrogen fuel cell technology represents the alternative solutions for future clean energy systems. In the proposed work, hydrogen is converted into electric energy by using fuel cells, which do not produce any toxic gases. Fuel cells directly convert the chemical energy in hydrogen into electricity with pure water and potentially useful heat, as the only by-products. The proposed work also includes the current technologies used for hydrogen production from steam reforming, partial oxidation, auto-thermal processing and photoelectrolysis process.

Key words: Hydrogen fuel cells, Electrolysis, Fuel cell technology, Electricity generation.

1. INTRODUCTION

Hydrogen is the most abundant element on earth, which consists of only one proton and one electron. A fuel cell combines hydrogen and oxygen to produce electricity, heat and water. Fuel cells are similar to batteries, where both perform the energy conversion by a chemical reaction into the usable electric power. Fuel cells can produce electricity as long as hydrogen is supplied and these operate best when we supply pure Hydrogen[1]. Some fuels like natural gas, methanol, gasoline can also be reformed to produce the hydrogen required for fuel cells. Fuel cells can be used to produce power for an electric motor as well as directly producing electricity in place of a generator. In both the cases, they facilitate the replacement of a gasoline or diesel engine. Also, fuel cells do not produce any greenhouse gases or air pollutants. The product of the chemical reaction is only water and a small amount of heat. Fuel cells are mainly used as power sources in remote locations like spacecraft, remote weather stations, large parks, communication centres, rural locations such as research stations, military applications etc. The fuel cell system running on hydrogen is very compact and light weight. The annual production of hydrogen is estimated to be around 55million tons with its consumption increasing by approximately 6% every year. At the end of October 2019, there were around 80 fuel cell power plants operating in the United States with a total of 190MegaWatts of electric generation capacity. Both the electrolytic and plasma processes are highly efficient for hydrogen production, but these are considered as energy intensive processes.

2. OBJECTIVES

- To increase the electrical efficiency and durability of various fuel cells used for power production.
- To reduce the cost to a level competitive with conventional technologies.
- To increase the energy efficiency of production of hydrogen from electrolysis of water and renewable sources while reducing the capital costs.
- To reduce the rare earth elements, thereby reducing the greenhouse effect in the atmosphere.
- To reduce the dependence on imported hydrocarbons
- To contribute to economic growth and provide employment in country.

3. VARIOUS METHODS TO PRODUCE HYDROGEN GAS

Hydrogen can be produced by various processing technologies such as thermal processing, electrolytic processing, photolytic processing and so on.

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LAYOUT DESIGNING OF LESS DELAY FULL ADDER BY EXPLORING NEW XOR AND XNOR GATES USING 32NM TECHNOLOGY IN VERILOG

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ABSTRACT- In this paper XOR-XNOR gates are used In many arithmetic and logical circuits. So, the combination of XOR and XNOR gates by using the full adder we also are used in transmission gate and CMOS inverter to reduce area and power consumption. So, the gates have been designed using 32 nm technology on micro wind 3.1: there is a layout is discussed in this paper. We also proposed circuits XOR and XNOR gates to be used in the full adder circuit. The proposed circuits are investigated in terms of area and power consumption and delay so the full adders are designed to reduce power consumption and chip area occupied by it.

INTRODUCTION:

In this paper, we propose a new design of XOR and XNOR circuits with CMOS inverter. The advantage of the transmission gate has to provide higher speed and lower delay. These circuits are being used in error detection and arithmetic circuits and code converter. The performance of complex logic circuits affected by the XOR and XNOR circuits in VLSI technology the MOS circuits are widely used in many fields. there are two types of mos. i.e NMOS and PMOS. So the NMOS transistor is "ON" when it is the high state.so the PMOS transistor is "on" when it is a low state.

The full adders are used for purpose of addition in many VLSI Circuit such has application with microprocessors, portable devices, etc... so these performances of parameters power consumption, chip area and delay depend on the design full adders and XOR and XNOR gates.

The proposed circuits are designed in the micro wind and the simulations result in the DSCH module. By using this we can see the layout in 2D and 3D of the proposed circuit and also can get resultant output waveforms. The speed and power of a circuits

1. XOR design:

The XOR circuit is consists of 4 transistors so the number of transistors to be designed .so these transistors to vary the area and power consumption and delay. So, in this paper to be considered the 4-transistor circuit.XOR circuit is consists of two inputs and one output. So, the inputs are in1 and in2. And the output is out1. The truth table is consisting of two inputs is the same and the output will be the low state. so the inputs are different and the output will be a high state.

In the below figure of the XOR circuit is designed the simulation of DSCH software. The simulation is continued with the XOR gate. So, the in1=0 and in2=0 so the PMOS transistor is on and the NMOS transistor is off in in1=0. So, the NMOS transistor is off and the PMOS transistor is on in in2=0 conditions. So, the output will be low state i.e. out1=0. So, the in1=0 and in2=1 so the PMOS transistor is on and the NMOS transistor is off in in1=0. So, the NMOS transistor is on and the PMOS transistor is off in in2=1 condition. so, the output will be high state i.e. out1=1. So, the in1=1 and in2=0 so the PMOS is off and the NMOS transistor is on in in1=1. So, the NMOS transistor is off and the PMOS transistor is on in in2=0 conditions. So, the output will be the high state.i.e out1=1. So, the in1=1 and in2=1 so the PMOS is off and the NMOS transistor is on in in1=1. So, the NMOS transistor is on and the PMOS transistor is off in in2=1 condition. So, the output will be low state.i.e.out1=0.so these conditions verified in the truth table.

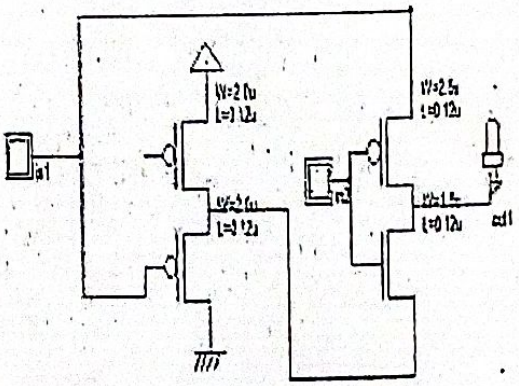

Fig1: XOR circuit diagram with 4 transistors

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AUTOMATED ELEVATOR-AN ATTENTIVE ELEVATOR TO ELEVATE USING SPEECH RECOGNITION

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Abstract - *Elevator has over time become an important part of our day-to-day life. It is used as an everyday transport device useful to move goods as well as persons. In the modern world, the city and crowded areas require multiform buildings. According to wheelchair access laws, elevators/lifts are a must requirement in new multi-stored buildings. The main purpose of this project is to operate the elevator by voice command. The project is operating based on voice, which could help handicap people or dwarf people to travel from one place to another without the help of any other person. The use of a microcontroller is to control different devices and integrate each module, namely- voice module, motor module, and LCD. LCD is used to display the present status of the lift. The reading edge of your project is the "voice recognition system" which genet's exceptional result while recognizing speech.*

Keywords: *Arduino UNO; Smart Elevator; Voice-Controlled; Bluetooth Module; Embedded System.*

1. INTRODUCTION

The elevator is very common for us nowadays. The use of elevators is expanding in different applications like those are used in carrying goods and carrying people vertically in tall buildings like offices, shopping malls, and other skyscrapers, with increasing technological advancement the reliability is getting worse. Some inventions are not even portable and require great efforts to handle. Therefore, we have decided to come up with a new idea, which is fascinating, as well as helpful. It tries to make it more automatic through your project Speech recognitions a technology in which the system understand the words but not it meaning of the words. Speech is an ideal best and ideal method for controlling the elevator. Automatic speech recognition is a technique by which a computer takes a speech signal and converts it into words. Microcontroller to gives an appropriate command to all attached devices uses those words.

1.1 ARDUINO:

Arduino is an open-source programmable circuit board that can be integrating into a wide variety of projects both simple and complex. The ardunio can interact with a large array of outputs such as LEDs, motors, and displays. Because of its flexibility and low cost.

1.1 WORKING PRINCIPLE:

The working of the Arduino microcontroller is where the proper connection is made by checking all input ports as well as the power supply connection. The output of the pins can be connecting with external devices. The program to be executed for the applications can be done by using Arduino software so the software can work on c and c++ programming language. By using, these programs can be uploading to the Arduino microcontrollers. we can control the speed, microcontroller by using the power jack cable the direction and also the number states of a motor program can be uploaded to the microcontroller, This Arduino ATMEGA328 software and again can be uploaded to the Arduino microcontroller are the most suitable microcontroller via power jack cable.

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Implementation of Low Area and Less Delay of Various Multipliers using Verilog

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Abstract -*Multiplier plays an important role in today's digital image processing and various other applications. To improve the performance of multipliers, there are mainly three accepts. They are Delay, Area, and Power. To improve the performance of multipliers is to decrease the area and delay. Here, we are increasing the performance in terms of area and delay. In this paper, we explain three multipliers. One of the three multipliers is the Array multiplier, it is the simplest method and high performance, but it suffers from high propagation delay because of the large number of partial products. Wallace tree multiplier technique is used to overcome the problem of Array multiplier. It has less delay and high performance because it decreases the number of partial products compare to the Array multiplier but it requires a large area. Dadda tree multiplier is the fastest multiplier and is used to overcome the problem of Wallace tree multiplier, its performance is also high, and it reduces the area partial products in early stages.*

Key words: Array multiplier, Wallace tree multiplier, Dadda tree multiplier, Delay, Area, Verilog, Xilinx-14-7 Version.

1. INTRODUCTION

Most of the digital circuits and digital signal processing systems are depends on the execution of the multipliers and they are important to increase the speed of any digital systems. Currently, multiplication time is still the dominant factor in determining the instruction cycle time of digital signal processing.

A basic multiplier can be divided into three parts: I. Partial product generation II. Partial product addition. III. Final addition.

Here we are using Verilog to build logic. We are using Verilog to design the code very easy and effective way. To design the Multipliers we are using Gates, Half Adders and Full Adders. Gates like XOR, AND and OR Gates are using to design in Half Adder and Full Adder.

For Example, A and B are the Multiplicand and Multiplier respectively. In every Multiplication, we Perform multiplication for each bit with shifting and adding operations.

```
A= 1011
B= 1001

     1011   Multiplicand
X    1001   Multiplier
-----------
     1011
     0000   } Partial product
    0000
   1011
-----------
  1100011   Final Result
```

Fig-1: Normal Multiplication

Here A is the Multiplicand and B is the Multiplier.

Multiplication is mostly used in the performance of some instructions in a fast manner or in an effective way to decrease the delay time.

2. ARRAY MULTIPLIER

Array Multipliers is well known due to its regular structure. These multipliers are fully based on adding and shifting operations. In every multiplier, partial product is the main thing that arranged in a specific manner by using adder and shifter.

Partial product is nothing but multiplying multiplier to the each of the multiplicands. The number to be multiplied is the "Multiplicand", and the number by which it is multiplied is the "multiplier". Usually, the multiplier is placed first and the multiplicand is placed second, however, the first factor is the multiplicand and the second is the multiplier.

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The Design of Ultra Wide Band Circular Monopole Antenna with Triple Band Notch Characteristics

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Abstract

Ultra Wide Band is the explication for the short-range wireless communication system. Electromagnetic interference with the co-existing narrow bands was the major problem in the UWB and to achieve better over, Ultra Wide Band antennas with Band Notch characteristics are designed. The FCC (Federal Communication Commission) has recommended the usa of unlicensed Ultra Wide Band spectrum frequency ranging from (3.1-10.6) GHz. This paper presents a Triple Band stop Printed circular Monopole Antenna with reduced ground structure. In this paper, the co-existing wireless communication bands like Worldwide Interoperability Microwave Access band (WIMAX); INST band and X-band will be notched by using notching techniques. The proposed antenna occupies a volume of 26 X 31 X 1.6 mm^3 is falsified with FR4-epoxy substrate. Based on methodologies, various shapes are etched on the radiator to reject WIMAX (3.3-3.7) GHz; INST (4.5-4.8) GHz; X-band satellite downlink frequency (7.25-7.85) GHz. A rectangular slot is etched on the patch to create a notch at WIMAX band, a couple of inverted L shaped slots are incorporated on either side of the patch to create notch at INST band and RSRR (Rectangular split ring resonator) is placed on the feed to create notch at X-band satellite services. The results show that the antenna operates from 2.8-10.8 GHz, the RE (Radiation Efficiency) is more than 90%, the peak gain is above 2.2-5.6 dBi, and considerably good radiation properties except at the notched bands. All the simulations are performed by using Ansoft HFSS software. The results depicts that the designed proposed antenna is well fit for UWB devices and reaches the fulfillments of UWB systems applications.

Keywords: Band-notch, interference reduction, Circular monopole antenna, UWB, Ansoft HFSS.

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e-AGROBOT- A Robot for Early Crop Disease Detection using Raspberry Pi

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Abstract

India is a farmland with population of three-fourth in the agriculture. As we know agriculture sector is rapidly diminishing day by day which mainly affects the enhancement of the Human Life. This project mainly deals with exploring of how robotics can be applied to various agriculture fields. The main strategy of this project is to improve efficiency and productive rate of agriculture crops. This can be done by replacing the human laborer's by active machines like robots by using latest technologies. In this project, we mainly introduce e-Agrobot a robot which mainly identifies the crop disease through image processing techniques using Raspberry Pi. It also performs operations like detection of presence of pests, spraying of pesticide,thereby providing safety to the farmers. The developed system involves a prototype which uses simple cost-effective electronic devices like Ultrasonic sensor, Raspberry-Pi and various motors which is an aid to the farmers about the plant health through IOT.

Keywords: Raspberry-Pi, Robot, Sensors, Crop disease detection, Image Processing, Pesticide spraying, IOT.

1. Introduction

The base of Indian economy is agriculture and still it is done in traditional way. There is need to replace it by advanced method to improve the performance and take high yield. The techniques which are preferred by farmers are time consuming, required large amount of manpower and are done in inappropriate way, which affects the quality of soil, quality of crop and amount of yield as the farming lands are reducing day by day. So, we have to replace this traditional way of farming which will help to grow more crops in small areas. Agriculture in India constitutes more than 60% of the occupation. It is considered as the main pillar of our Indian economy [1]. It is very important to improve the efficiency and productivity of agriculture to save cultivation of the farmers.

Robotics has been implemented in our project in which the diseased leaf is detected [1-4] and the fertilizer is sprayed on it [5]. The technique used for leaf disease detection is

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Supervised Classification of Satellite Image Processing using Neural Networks

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Abstract: Now a day's satellite image processing plays a major role. By using remote sensing technique, we can classify the satellite images like LISS (Linear image self-scanner), LANDSAT satellite image by using ERDAS imagine software. By using ERDAS imagine software, the classification of an satellite images will take more time. Rather than ERDAS imagine software we can use NEURAL NETWORKS in MATLAB software for classifying the satellite images by using the corresponding code with respect to the image by simply changing the file name. This paper includes the method like supervised and classification by using ERDAS imagine software and MATLAB code. The aim of this projects is to realize the image classification using NEURAL NETWORKS.

Keywords : Image Processing, MATLAB software, Supervised classification, hyper spectral satellite image.

I. INTRODUCTION

Remote sensing is defined as the collection of data and modifying pictures by using enhancement and restoration techniques.

Stages of Remote Sensing:

1.Emission of electromagnetic radiations from sun.
2. The energy can be transmitted from sun to the surface of the earth.
3. Electromagnetic rays from sun will interact with the earth's surface then it will get reflected and transmitted to the remote sensor.
4. The transmitted energy will be analyzed.

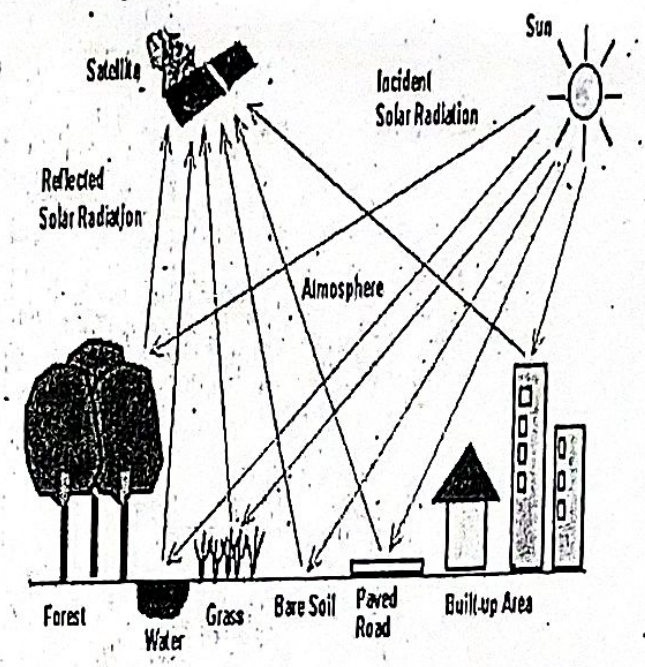

Fig 1: Stages of Remote Sensing

By using platforms, we can collect the data.
It can be classified into 3 types. They are
1.ground-based platform
2.airborne platform
3.satellite platform

1.1 Ground based platforms:

This type of platforms primarily located on the ground. Some of these platforms are placed at certain height with the help of the ground. Hence it is known as ground-based platforms. Cameras mounted on the vehicles, towers are the examples for the ground-based platforms.

Fig 2: Ground Based Platform

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WOMEN'S SAFETY SYSTEM USING IOT

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Abstract - Today in the current global scenario, women are facing many problems like women's Harassment. We propose to have a System which is the integration of multiple devices, Hardware comprises of Portable system that endlessly communicates with a sensible phone that has access to the web. This paper covers descriptive details about the design and implementation of "System". The System consists of an Arduino UNO, GSM module (SIM900A), GPS module(Neo-6M), IoT module(ESP8266), Accelerometer Sensor(ADXL345), Buzzer, Panic Button, LCD . In this project, when a woman senses danger she has to press the Panic Button of the device. Once the system is activated, it tracks the current location using GPS (Global Positioning System) and sends an emergency message using GSM (Global System for Mobile communication) to the registered mobile number and nearby police station. IoT module is used to track the location continuously and update it into the webpage. Accelerometer Sensor can detect when she would fall, the buzzer is used as an alarm to alert the nearby people so that they may understand that someone is in need. The main advantage of this project is that this device can be carried everywhere since it is small and also provides safety to Women.

Keywords: Arduino UNO, GSM, GPS, Accelerometer Sensor, Panic Button.

1. INTRODUCTION:

In the present situation, women are competing with men in each prospect of society. girls contribute one-half to the event of our nation. however, the ladihavea worry of obtaining pestered and killed. of these styles of girls harassment cases are increasing day by day. thus it's important to make sure the protection of girls. During this paper projected model of a system can give a needed safety to girls. The projected model contains a device that will live positions endlessly additionally sends a message with location to a predefined range. IoT (internet of things) may be a comparatively new and fast-developing thought. By victimization IoT-based technology guardians, relatives and police will monitor and track totally different sensors prices and position of a tool. The system is simple for coming up with and moveable.

2. HARDWARE DESCRIPTION:

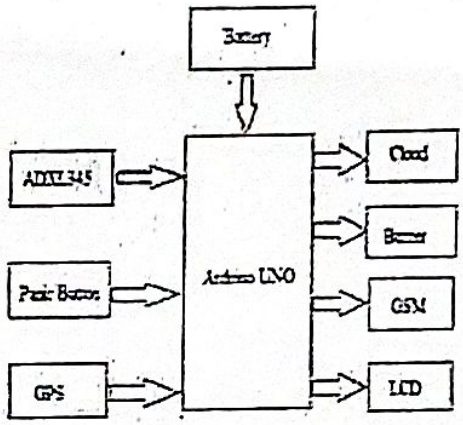

Fig-1: Block diagram

2.1 Arduino:

It is a board based microcontroller on ATmega328P. It has a 16 MHz quartz crystal, 14 digital input/output pins, a USB connection, a power jack. It has a reset button. Simply connect it to a computer with a USB cable get started with AC to DC connection. A typical ARDUINO UNO board can be used for many applications based on the coded program. "UNO" was opted to record the release of ARDUINO software. Theversion1.0 of the Arduino is the reference and now updated to later versions. The first in a series of USB ARDUINO boards was the UNO board and the reference model for the Arduino platform.

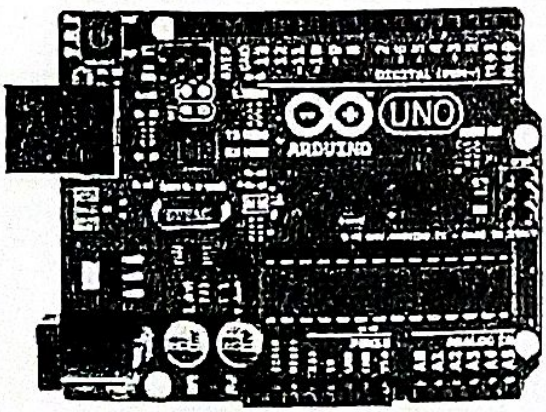

Fig-2: Arduino UNO

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A System and Method for Detection of Obstacles on Moving Vehicles on Either Side 360^0

Dipak Ranjan Jana, Turaka Sowmya, M.Leela Priyanka, N.V.Bhargavi, P.Sannihitha, P.Sandhya

Abstract-This work provides information to determine the sudden hazardous living or non-living materials in front of vehicles on either side, i.e.180 degree across will indicate the drivers for stopping the vehicles automatically with ANDON and BUZZER. Then the vehicle will automatically turn on either side safely. For Sudden detection of obstacles, specifically waterfall at certain height, rock rolling down, landslides, earthquake, animals, abnormal things and tree fallen on the road 90 degree on either side. ANDON and BUZZER system is for visual indication along with voice monitoring for indication to front and back vehicles. Successful display of distance and identified object will be displayed in the LCD. The mainly used components for this project are the use of preventing and corrective action through ARDUINO MEGA, ULTRASONIC SENSORS, VIBRATION SENSOR SW-420 and LDR MODULE.

Keywords-ANDON and BUZZER, Embedded, Landslides.

I.INTRODUCTION

Road accidents (RA) are responsible for 1.2 million deaths worldwide each year. RA will become the third largest contributor to the global burden of diseases after Ischemic Heart Diseases (IDA) and depression. So, we conducted retrospective study on road accidents in the hilly and highway areas. The problem of accident is very acute in highway and hilly areas transportation due to sudden moving or stationary objects approaching in front /left/right while driving. We identified landslides, sudden rock rolling, and rainfall on NH-229 on the Bhalukpong road, NH-29 (Connecting Assam and Nagaland) and NH-39 (Dimapur-Kohima). Here, the landslides, cloudburst, rock rolling happens all of a sudden and cannot be predicted, due to which many people lost their lives. It has been also noticed that while driving in NH-29, sudden approach of animals are seen due to which many accidents occur. To find out the sudden waterfall (or) ice burg fall on the road (or) sudden appearance of a huge amount of water with a height over the road at a degree of 90 degree either side(left/right).

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Sudden earthquake (or) landslide will be detected. In this Universe, now a days there occur a sudden problem due to act of God such as landslides, rock rolling, fall of Ice burgs, earth quakes on road. To eliminate this problem, we have used different type of embedded devices, which gives prior information, so that not only it gives corrective action but also it gives the preventive action.

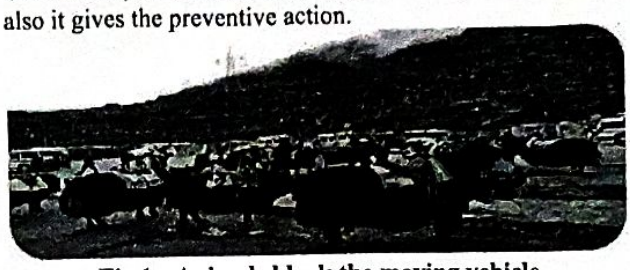

Fig.1 : Animals block the moving vehicle

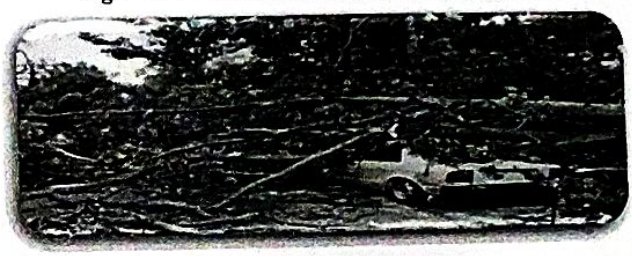

Fig.2 : Accident due to Tree-fallen

Fig.3 : Ice Bergs

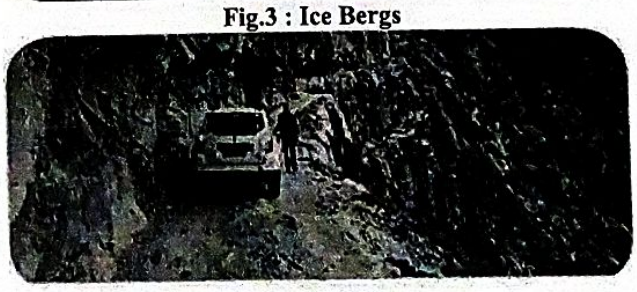

Fig.4 : Rock Rolling

II.RELATED WORKS

Anil Kumarjoshi et al. [1,2] proposed that developing countries like India where the hilly regions of north India (Uttarakhand) the accidents are caused due to poor infrastructure and unattended hazarded zones, the total number of road traffic accidents in hilly districts are the second major cause of accidents the main causes were bad weather conditions.

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REMOTE HEALTH MONITORING, HOME AUTOMATION AND ALARM SYSTEM USING RASPBERRY PI

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Abstract - Now a day's people are bu. with their schedules. Due to an irregular lifestyle, the health hazard is not an age-dependent factor in recent days. They have no time for regular health checkups. Doctors suggest the elderly and ill patients who are not in hospitals, for periodic checkups but it is a wastage of time for a simple health checkup and spending a lot of money. For this problem we find a solution using IoT. IoT is an internet-connected thing that can collect and share data. There are many things present in our daily life. These things sense and collect data and send to the internet. This data can be accessible by other things also. This project proposes the remote real-time health monitoring of patients from home only. Which monitors the vital parameters of the patient such as temperature, heartbeat, blood pressure, respiratio rate using sensors that are connected to Raspberry pi. The unique part of this proposed system is all these vital parameters are sending SMS to the doctor. Another advantage of this system is it occupies less space and also creates the optimum surrounding as per the patient's health condition.

Key Words: Heartbeat sensor, Respiration sensor, Blood pressure sensor, Temperature sensor, Raspberry Pi, Internet of things.

1. INTRODUCTION

Internet of things and h me automation are combined to create a great revolution in modern technology. Internet of things pushes our day to day life forward to home automation. IoT is a network of internet-connected objects like physical systems, vehicles, computing devices, mechanical and digital machines that are embedded with sensors, software, and network connectivity. These sensors sense and collect data and send them to the internet using processors and microcontrollers. Various industries, companies are using IoT to operate more efficiently, to better understand the customers to deliver intensify customer services, improve decision-making, and in turn increase the value of the business.

Health care is one of the most important issues. The Internet of things reduces the difficulty faced by patients and doctors. The automatic homecare is provided instead of the expensive hospital service. without visiting the hospitals for regular health checkup IOT technology find the solution that is from home only IOT combined smart health monitoring system using Raspberry pi is used.In this proposed system patient temperature, blood pressure, heartbeat, respiration rate all these parameters are collected from sensors. These sensors are interfaced with Raspberry pi through general-purpose input-output pins. Raspberry pi process all values collected from the sensors according to the instructions and display output on LCD in the human-understandable language. Raspberry pi supports python software and it has an inbuilt wifi module also. The health information of the patient is conveyed instantly through GSM to the doctor by sending an SMS. This system is employed in hospitals as well as in-home. The cost of the health observance and the space of the room is decreased. We develop a real-time health monitoring system to acquire the data and share the information with the doctor and relatives by remotely monitoring through the internet.

2. LITERATURE SURVEY

Jayeeta Saha has demonstrated a health monitoring system for hospital management to send SMS to relatives and doctors to remotely monitor the health condition of a patient via the internet using Raspberry pi with E-health sensor shield kit. But unlike our solution, it does not provide email and SMS alert to an emergency contact list.

Mohd. Abdul Muqeet has proposed that patient health conditions are continuously monitored if the required emergency alert is given. IoT also allows us to store patient's data on the cloud and the data is also visible anywhere from the world. patient history will be available for doctors to access from everywhere.

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Automatic wireless Monitoring and Controlling of Greenhouse using multiple sensors

T.Jyothirmai, P.Sireesha, P.Anusha, M.Venkata Padma, N.Vasavi, R.Lavanya

Abstract: *Many parameters like temperature, soil moisture, light intensity, Humidity, Carbon dioxide (CO2) leads to the healthy growth of plants in greenhouse environment. Observing only few of those leads to improper growth of plants and minimize the yields. Every grower cannot visit the field and observe the parameters continuously. In order to monitor the parameters and give the approximate control to the greenhouse, we proposed this system. This system continuously monitors the plants and communicate the information to the grower through wireless Sensor Network (WSN), thus reducing the risk of staying at the field. The proposed system has three stations - Transmitter Station (TS), Control Station (CS), and Communication Station (CMS). The ZigBee plays a major role by enabling communication between the three stations. This implementation supports the farmers to simplify the management and to increase the crop production. The overall system has shown the benefits in price, volume, and strength.*

Keywords: *Greenhouse Environment, Wireless Sensor Network, ZigBee*

I. INTRODUCTION

A greenhouse is structure with different types of transparent materials such as a glass or plastic materials. These structures range in small size from low cost industrialized sized buildings. The plants are created in adequate condition, particularly in some nations where the atmosphere is in troublesome conditions.

The framework can screen up these parameters namely light, soil moisture, carbon dioxide (CO2), humidity, and soil temperature. In this framework we design the system with multiple sensors for wireless monitoring and controlling of field.

The framework has four sensors and exchange information with the control station using ZigBee module. The transmission of data between the control station and the communication station uses a ZigBee module.

Wireless sensor network has the advantage of low cost, small size, flexibility the network application sensors. The framework has three sections they are transmitter station, control station and communication station.

II. BLOCK DIAGRAM

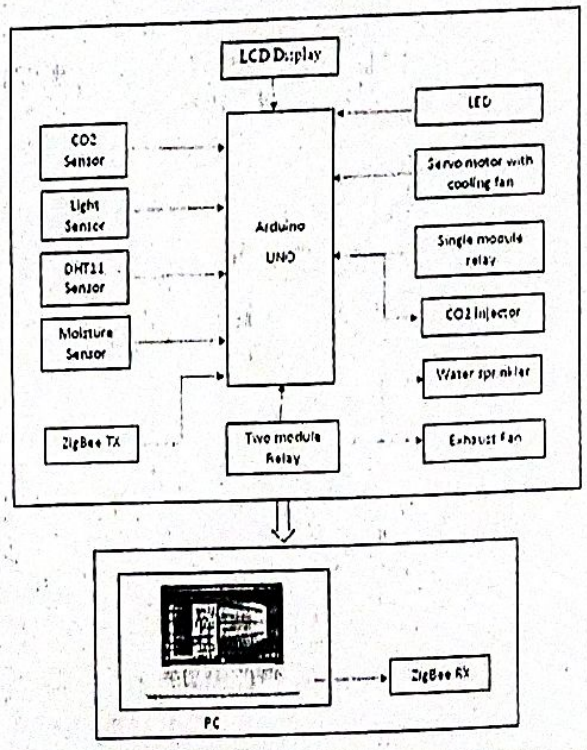

Fig: Block diagram for greenhouse monitoring and controlling

III. HARDWARE DESCRIPTION

The system is having mainly three categories: Transmitter Station (TS), Control Station (CS), and Communication Station (CMS). The complete system is shown above. The transmitter Station and control station are Arduino UNO based (Atmega328p micro controller) while the communication station is based on personal Computer (PC). All the stations described in the section.

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Generation of Electricity Using Hydrogen Fuel Cells

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ABSTRACT

The climatic changes that are becoming visible today are the major challenges for the Global Research Community. Electricity generation is the process of generating electric power from the sources of primary energy, which is found in nature. The main aim of this work is to use hydrogen as an alternative source of energy. Hydrogen is the most abundant element in the Universe and thus, it is a never-ending source of energy. It is an energy carrier, which stores and delivers energy in the usable form, which can be produced from various domestic resources such as fossil fuels like natural gas and coal, biomass and water electrolysis. Also, Hydrogen fuel cell technology represents the alternative solutions for future clean energy systems. In the proposed work, hydrogen is converted into electric energy by using fuel cells, which do not produce any toxic gases. Fuel cells directly convert the chemical energy in hydrogen into electricity with pure water and potentially useful heat, as the only by-products. The proposed work also includes the current technologies used for hydrogen production from steam reforming, partial oxidation, auto-thermal processing and photoelectrolysis process.

Key words: Hydrogen fuel cells, Electrolysis, Fuel cell technology, Electricity generation.

1. INTRODUCTION

Hydrogen is the most abundant element on earth, which consists of only one proton and one electron. A fuel cell combines hydrogen and oxygen to produce electricity, heat and water. Fuel cells are similar to batteries, where both perform the energy conversion by a chemical reaction into the usable electric power. Fuel cells can produce electricity as long as hydrogen is supplied and these operate best when we supply pure Hydrogen[1]. Some fuels like natural gas, methanol, gasoline can also be reformed to produce the hydrogen required for fuel cells. Fuel cells can be used to produce power for an electric motor as well as directly producing electricity in place of a generator. In both the cases, they facilitate the replacement of a gasoline or diesel engine. Also, fuel cells do not produce any greenhouse gases or air pollutants. The product of the chemical reaction is only water and a small amount of heat. Fuel cells are mainly used as power sources in remote locations like spacecraft, remote weather stations, large parks, communication centres, rural locations such as research stations, military applications etc. The fuel cell system running on hydrogen is very compact and light weight. The annual production of hydrogen is estimated to be around 55million tons with its consumption increasing by approximately 6% every year. At the end of October 2019, there were around 80 fuel cell power plants operating in the United States with a total of 190MegaWatts of electric generation capacity. Both the electrolytic and plasma processes are highly efficient for hydrogen production, but these are considered as energy intensive processes.

2. OBJECTIVES

- To increase the electrical efficiency and durability of various fuel cells used for power production.
- To reduce the cost to a level competitive with conventional technologies.
- To increase the energy efficiency of production of hydrogen from electrolysis of water and renewable sources while reducing the capital costs.
- To reduce the rare earth elements, thereby reducing the greenhouse effect in the atmosphere.
- To reduce the dependence on imported hydrocarbons
- To contribute to economic growth and provide employment in country.

3. VARIOUS METHODS TO PRODUCE HYDROGEN GAS

Hydrogen can be produced by various processing technologies such as thermal processing, electrolytic processing, photolytic processing and so on.

Detection and Prevention of Wheel Unbalancing and Tire Burst in Moving Vehicles

Dipak Ranjan Jana, Sumalatha Emmela, Ch.Monika, D.Archana, K.Thulasi Priya, K.Yamini

ABSTRACT- *Fatal accidents are increasing day-by-day due to the failure of wheel bearing, unbalancing of wheel and tyre bursting due to increase in the temperature. Bearing is the most important mechanical device on which the wheel performance of a vehicle depends. Lack of proper periodic maintenance of the bearing leads to the failure of bearing, which results in wheel misalignment. Hence, tyres with wheels come out from the axial in moving condition, which results in accidents. Bearing failure can also be due to bearing buckling, scratches, nicks, discoloration, corrosion and crack. This can be due to lack of lubrication or overheating etc. Also due to improper tyre pressure, harsh braking and increase in the temperature of the tyre, tyre gets heated up causing tyre bursting which leads to fatal accidents. The main objective is to detect tyre temperature and wheel alignment deviation, thereby providing indication through audio-visual system which prevents accidents of the vehicle and the driver from an injury or death. Hence, we have used ARDUINO UNO, ULTRASONIC SENSOR, LEDS, DHT-11 SENSOR and BUZZER.*

KEYWORDS: *Wheel Bearing, Unbalancing, Maintenance, Alignment*

I. INTRODUCTION

This paper focuses on a new idea to prevent vehicle accidents due to tyre bursts and wheel misalignment. Tyre bursts are common on highways where vehicles move at very high speeds which lead to fatal crashes when the vehicle loses stability.

Fig 1: Tyre Burst

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The new design prevents this stability loss due to improper tyre pressure [1], harsh braking and increase in temperature by providing an indication. There is no need for the driver to get panic as the vehicle will be completely stable.

This will completely avoid accidents and provides safety for the passengers. Similarly, wheel misalignment due to bearing failure is common. By providing an indication to the driver to stop the vehicle, prevention of driver from an injury or death can be done successfully. Also, the damage being done to the vehicle can be avoided.

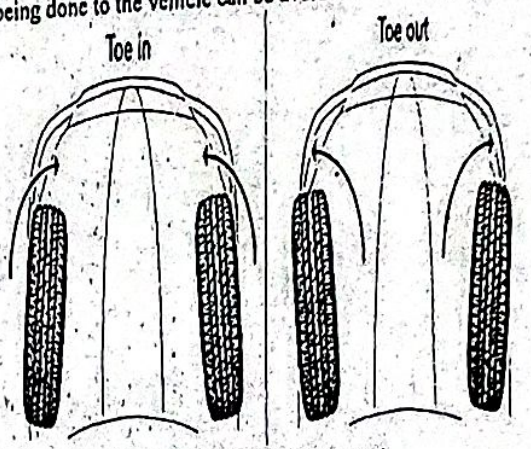

Fig 2: Wheel Misalignment

II. RELATED WORKS

Ryosuke Matsuzaki et al. discussed the key technologies of intelligent tires focusing on sensors and wireless data transmission. Intelligent tires are smart tires equipped with sensors for monitoring air pressure, applied strain, temperature, acceleration, wheel loading, friction and tread wear which improve the reliability of tires and tire control systems such as Anti-lock Braking Systems (ABS) [2].

S Patwardhan et al. presented the scenario of tire blow out and its effects on lateral control of automobiles in Intelligent Vehicle Highway Systems (IVHS) environment [3].

Mulla Minaz et al. proposed a TPMS system (Tyre Pressure Monitoring System) which detects the tyre pressure and gives indication to the driver about the tyre pressure. Sensor is used to detect the changes in the tyre pressure. This prototype is fully based on software version of Raspberry Pi [4].

Balakrishnan.T et al. stated the use of vehicle dashboard for the measurement of automobile wheel parameters such as camber and toe. The alignment of the wheel is monitored using accelerometer sensor which is fixed in the rear axle [5].

Accident Detection and Elegant Rescue System using Android-Real Time Location Tracking

K. Bhavani, Suneetha Emmela, K. Gowthami, M. Sandhya Rani, B. Deepika

Abstract: The measure of accidents happening in India are developing a tiny bit at a time. Crisis reaction time is inconceivably major, when it fuses occasions, for example, vehicle episodes. Most of the human lives are being lost thinking about road troubles. Quantifiable Analysis shows that in the event that we rot only 1-minute in mishap reaction time that can develop odds of sparing a person's life up to 6percent. Among all the occurrence cases, some can be constrained by taking certain preventive measures and some can be spared by giving a concise data to the misfortune's family. This work region work helps the misfortunes by giving 'some concise ramifications to their particular relatives furthermore perceives the guideline driver of the mishap. That is, either the disaster is intoxicated or fire setback has occurred, and so on. In like manner the proposed framework gives the constant zone following.

Keywords: Emergency victim, Emergency responder, Sensors, Tracking real-time location.

I. I.INTRODUCTION

The pace of occasion of setbacks in India has been growing immediately, when meandered from the latest unmistakable confirmation. India positions first in street misfortune passing's over the world, as revealed by the world street estimations, 2019. The age pack 25-30 was the most powerless towards death by street mishaps. Fig.1 gives the comparison of injuries and fatal deaths occurred in the years 2018 and 2019.

Accident Rate	Major injuries	Fatalities
JAN-JULY 2018	7,526	5,559
JAN-JULY 2019	6,522	2,979

Fig. 1. Comparison of Road Accidents in 2018 and 2019

So as to diminish the event of mishaps, we need to guarantee the vehicle area GPS beacon in business vehicles and driving test systems at RTOs. Likewise, amendment of back spots in parkways and fixing crash boundaries ought to be finished.

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There are 17 individuals who bite the dust each hour because of the street mishaps out of which 4 individuals pass on consistently in light of not wearing head protectors. There exist numerous frameworks which can recognize the area of the mishap, yet the fundamental drawback of those frameworks is that they couldn't distinguish the main driver of the mishap. Consequently, mishaps happen more than once because of similar missteps done by people. This work area work in like manner reduces the fire incidents by forewarning the people whenever they get the opportunity of escaping.

II. PROPOSED SYSTEM

The principle thought behind this exploration work is to structure and execute a mechanized framework that utilizes a PDA to identify vehicle mishaps. And afterward to report it to the closest accessible responders in order to decrease the causalities however much as could be expected. Likewise, this framework assists with diminishing fatalities by diminishing the reaction time of crisis administrations like Fire Brigade, Police Department and Medical crisis administrations.

Arduino assumes a fundamental job in the plan of framework. As the work done here is primarily implanted based, which utilizes both equipment and programming with a particular application, Arduino is for the most part favored as it is the reasonable segment. It is the most significant device to identify the mishaps and ready individuals during the crisis conditions [6].

GSM is used to follow the live domain of the individual being suggested. By utilizing GSM, the locale followed by the GPS can be sent to the relative's gainful [13]. Here, SIM800L GSM is utilized.

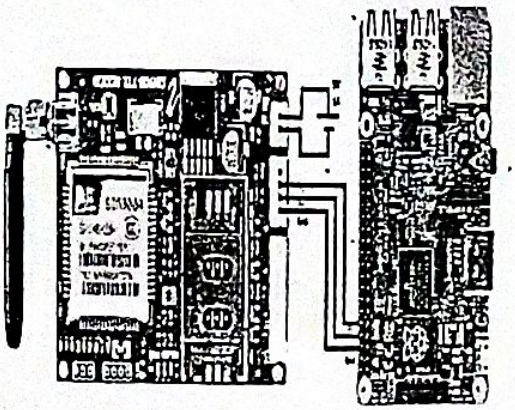

Fig.2 GSM Module

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Implementation of D Flip-Flop using CMOS Technology

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ABSTRACT

In this paper, D flip-flop has been designed and layout simulated using 32nm technology. This schematic of d flip flop has been designed using and its equivalent layout is created using Micro wind tools. The performance has been Analysed and compared in terms of area and power and delay. These proposed circuits are investigated in terms of area and power consumption and delay.

KEYWORDS: *Dfilpflop, layouts, MICROWIND and DSCH software*

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IJTSRD30554

1. INTRODUCTION

In VLSI technology the several past and years silicon CMOS technology has become a dominant fabrication process for relatively high performance and cost-effective VLSI circuits. The VLSI technology first transistor was developed by William B. Hackey in 1947. The integrated circuits are developed by the year 1960 and mainly there are four generations. So the small scale integration and large scale integration and medium scale integration and very large scale integrations. So the technology resolutions are developed in the number of transistors in an integrated circuit a single chip has been granted. Such a process in the risk chips in which it is possible to process 35 million instructions per second. So the technology is increased in terms of scaling and processing and enhancing by CMOS.

D flip-flop is bistable circuits which give the output in response to a reference pulse. So the data stored in flip flops on the rising and falling edge of the clock signal is applied. as the inputs to other sequential circuits. Those flip-flops are store data on both the rising and falling of the clock signal is termed as double edge triggered flip flops and those flip flops that store data either on the rising or falling edge are known single edge-triggered flip flops. So the latches and flip flops are the sequential circuits that store 1 and 0 state called logic states. Latches works on level-triggered while flip flops work on edge-triggered.

2. DESIGN ANALYSIS:

There are three sources of power dissipation in CMOS digital circuits. The first one is due to signal transistor, the second one is due to the leakage current and the last one is due to short circuit current which flows directly from the supply terminal to the ground. High leakage current places the most significant role of contributor in the power dissipation of CMOS circuit as the threshold voltage, gate oxide thickness on the channel length is reduced.

In this paper, the work is done on D-flip-flop using CMOS technology. There are many techniques proposed for flip flops and latches. In below figure shows 5 transistor D flip-flop with positive edge-triggered which later on reduces to 8 transistors and further reduced to 6 transistors in which 4 NMOS and 2 PMOS were used. The schematic design of D flip-flop is shown in below figure 1 in which the 5 transistors where 3 NMOS and 2 PMOS are used.

CERTIFICATE *of* PUBLICATION

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HAS SUCCESSFULLY PUBLISHED RESEARCH PAPER

Implementation of smart restaurant with E-menu card

JULY
2020

Dr. Alex R. Mathew | Johan Britto

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IMPLEMENTION OF SMART RESTAURANT WITH E-MENU CARD

ABSTRACT

Today's era is said to be the world of technology. So manyefforts have been taken by restaurants owners also to adopt information and communication technologies such as PDA, wireless LAN, costly multi-touch screens etc. to enhancedining experience. This paper highlights some of the limitations of the conventional paper based and PDA-basedfood ordering system and proposed the low cost touch screen based Restaurant Management System using an android Smartphone or tablet as a solution. The system consists of a Smartphone/tablet at the customer table contains the android application with all the menu details. The customer tablet, kitchen display connects directly with each other through Wi- Fi. Orders made by the customers will be instantly reach the kitchen module. This wireless application is user-friendly, improves efficiency and accuracy for restaurants by saving time, reduces human errors and provides customer feedback. This system successfully overcomes the drawbacks in earlier automated food ordering systems and is less expensive as it requires a one-time investment for gadgets.

Keywords

Smartphone;Automated;Wi-Fi; E-menu; Android Application;Intelligent;Ordering.

INTRODUCTION

The advancement of Information and Communication Technology has led to an increasing number of industries to use electronic media and corresponding application forinformation exchange. In the restaurant sector, Modern wireless device such as Personal Digital Assistant (PDA) has been adopted into restaurant system to replace the conventional way of taking orders using pen and paper. However, the PDA-based food ordering system has known limitations such as the requirement of training of attendants, the need of having attendants to operate, the inefficiency during peak hours and small screen size and the Multitouchable restaurant Management System has limitations such as touch screens used are of mostly capacitive type or resistive type which are costly. Hence by introducing an application loaded in an android Smartphone or tablet containing the menu details these limitations can be overcome.

Android is a software stack for mobile devices that includes an operating system, middleware and key applications. Android boasts a health array of connectivity options, including Wi-Fi, Bluetooth, and wireless data over a cellular connection (for example, GPRS, EDGE (Enhanced Data rates for GSM Evolution), and 3G). Android provides access to a wide range of useful libraries and tools that can be used to build rich applications. In addition, Android includes a full setof tools that have been built from the ground up alongside the platform providing developers with high productivity and deep insight into their applications.

The project mainly aims in designing completely automated menu in restaurants with the help of Android mobile phone using Wi-Fi module and a LCD to provide a user-friendly environment. There is no need of a person to take the order from the table. The menu will be displayed automatically on the customer mobile application using wireless Wi-Fi connectivity and we can directly order the menu with the help of press on the menu.

PROPOSED WORK

We propose this integration of touch technology in restaurants based on android technology. It is a wireless food ordering system using android devices. Android devices, in the past few years, have reached the pinnacle of popularity and have revolutionized the use of mobile technology in the automationof routine task in wireless environment.

System block diagram

The system block diagram of Touch and Order in restaurants is shown in figure. The android application on tablets at the tables. The tablets will be provided to customers, at their tables, allowing them to directly view the menu card and order immediately from their respective tablets. The tablets are the property of the establishment and are kept at each table.

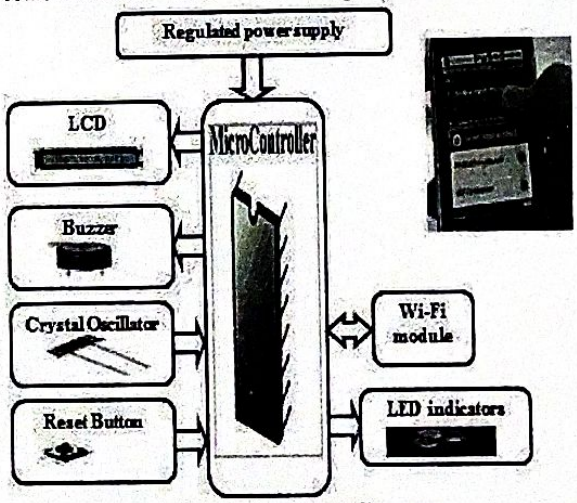

Fig1. System block diagram

System Overview

The microcontroller used in this project is ARM LPC2148. It is a 64 pin Microcontroller which comes under ARM 7 version of ARM controllers. This is intended for high end applications involving complex computations. It follows theenhanced RISC architecture.

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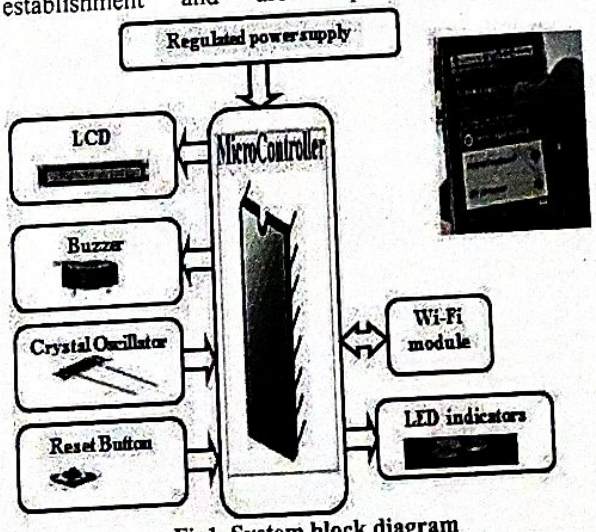

Fig1. System block diagram

System Overview

The microcontroller used in this project is ARM LPC2148. It is a 64 pin Microcontroller which comes under ARM 7 version of ARM controllers. This is intended for high end applications involving complex computations. It follows theenhanced RISC architecture.

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Background Subtraction Method based Smart Parking System using Image Processing

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Abstract: Now a day's population is increasing day by day. Due to increase in population usage of vehicles and the traffic at parking lot also increases. For this reason getting a parking spot is very difficult and time consuming for the car drivers. So to reduce this difficulty we are proposing a system called "Baground subtraction method based smart parking system using image processing". This paper is mainly concerned to develop smart parking system on a credit card sized computer and camera is fitted at a parking lot to show availability of a parking place. The image processing can be performed on a Raspberry pi interface with Things view cloud platform through an API to detect cars. Rasperry Pi posts data to the Things view cloud, Showing that the internet of things(IOT) based parking system. Availability of parking slot can be viewed in drivers mobile and they can book the parking slot from their mobile by using an app.

Keywords : Raspberry pi, Image Processing, Car detection, Background Subtraction, Availability of parking slot.

I. INTRODUCTION

The worlds urban population is increasing rapidly and it is expected to exceed more than five billions. Most of the urban growth will take place in developing regions particularly in smart cities. Currently, over half the global population live in cities for moneymaking and to lead a luxury life which increases the pollution and traffic conditions at parking spaces. In heavy populated cities which become more problematic. Mostly in public place few parking slots lead drivers to put huge effort and time taking process to park their vehicles.

The limited parking area is still to be decided problem. Enhance parking lots is one solution to minimize the problem. But for Enhancing parking lots we have to use large number of sensors or image processing. Image processing can be used in enhancing but is kept under the control of light. But by using sensors in the parking area system will easily detect non-vehicles but are counted as vehicle objects. Identifying empty parking slots is the main task for smart parking system but by using sensors reliability in identifying the empty slots is less and also by using image processing system becomes less accurate due to shadows.

To reduce the above mentioned problems we use background subtraction method for detecting vehicles and identifying empty spaces in a parking lot. By fixing the pi camera and lights at parking lot we can reduce shadow problems and also we can produce high accuracy in detecting empty slots. The application of Background Subtraction method for detecting vehicles and empty spaces in parking area using smartphone application is discussed in this paper. We also enquired experimentally and tested different camera view angles for accurate results. We present the use of this method on still images from a single camera node. It is scalable for use with large parking facilities.

II. HARDWARE AND SOFTWARE REQUIRED

Hardware Required:

- Raspberry pi
- Camera
- Servomotor
- LCD

Software Required:

- Raspbian sketch OS

III. HARDWARE PLATFORM

The hardware used in this paper is raspberry pi and a camera. Raspberry pi is a on board minicomputer that plugs into a monitor, TV or Laptop using HDMI to VGA cable. Raspberry pi also uses a standard keyboard and mouse. It is small in size and cost is very less compared to a computer. In this paper we use a Raspberry pi3 model B in which an SD card is inserted into a slot provided on backside of the board. Image processing is performed on the Raspberry pi interfaced with the Things view cloud platform through API.

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Smart Agriculture to Measure Humidity, Temperature, Moisture, Ph. and Nutrient Values of the Soil using IoT

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Abstract: *Smart Agriculture now-a-days reducing various problems in farming. Farmers get required information and relative data to monitor the plants growth by the use of "INTERNET OF THINGS (IOT)", which connects the different sensors, actuators and other embedded devices. To provide quality crops based on soil nutrient level and its moisture content along with Ph. factor, also been maintained. Hence, in this project all those parameters are detected and controlled with the help of micro controller. Humidity sensor to detect the moisture content, where colour sensor is used to determine the percentage of soil nutrients (N_2, P4 &K). It will analyse soil nutrient content present in soil at real time and Ph. sensor is used to determine the Ph value of the soil. Monitrring of these it provides the proper fertility to the soil depending upon the soil nutrients. GSM is used to display the information to the farmers. Thus it reduces the growing of husk in terms of wastage and thereby getting good quality and healthy crops.*

Keywords: *Internet of Things, Soil sensor, Ph sensor, Moisture sensor, Colour sensor and embedded system.*

I. INTRODUCTION

Plants [5] play a crucial role in the survival of human life in such a way that they provide oxygen when we need it. Meanwhile, Agriculture is also a beneficiary factor for living beings because it forms the basis for food security. To get a better crop, the most important things that should be there in the land that has accurate fertilizer, better irrigation facilities and best methods for cultivation. An adequate amount of fertilizer can help plants to produce better yield and quantity to meet the needs of world economy that is increasing the raise in need of food and its production. Over 58% of the rural population depends on agriculture for their livelihood and its export constitutes 10% of the country's exports.so, the farmers and even the nation's economy will be reduced if there are no proper yields due to lack of knowledge of the soil nature and unavailability of water. Therefore, the Indian government must take precautions for better and profitable agriculture. This project is a smart farming system based on IoT (Internet of Things) which has brought changes to every field of common man's life by making everything smart and intelligent.

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This project aims to innovate a smart IOT based agriculture guides the farmers by the updated data like Temperature, Moisture, Humidity, pH value and Nutrient detection of soil which will enable them to do smart farming and increases the overall productivity of crops. Thus, it makes the farmers yield good profits and produce crops. This project proposed using Arduino technology, a breadboard with different sensors and live data will feed to the Farmers mobile phones via, SMS.

II. LITERACY SURVEY

Most of the farmers[4] and land managers have the soil analyzed for finding Nutrients, Temperature and other parameters of the soil. Throughout the 1990s, people used to test and analyze the soil physically to measure the soil parameters. It is very difficult and time taking process and also not accurate. At present, IOT technology helps to monitor and analyze the basic parameter of the soil based on the sensing. Soil consists of weathered rock fragments, organic matters, and Minerals. It provides a "Home" for countless microorganisms and plant roots. Its depth varies from few inches to several feet. Soil provides water, Nutrients, suitable minerals and physical support for the plants. Roots located in the soil are primary resources for getting nutrients from the dead cells, tissues and minerals present in the soil. Carbon dioxide (CO_2) and water (H_2O) are the basic sources for the life of plant.

This project evaluated the variations of wired sensor networks and their potential for the advancement of various agricultural application improvements. It features the main agricultural and cultivating applications and examines the appropriateness of wired sensor networks towards improved performance and profitability[3].

Through sensor networks, agriculture can ome easier, can be attached to the Internet of things, which enables us to make connections among agronomists, farmers, and crops instead of the geographical differences. With the help of this methodology which gives real-time data through message about the lands and crops that will enable farmers to make the right decisions.

The significant advantage is an implementation of Wired Sensor Network will reduce the usage of
Water fertilizers maximizing the yield of the crops and further will help in experimenting with the weather conditions of the field. It fluctuates Control of the entire deployed framework in a single system. Which will make it simple to deal with and better understanding the results by users.

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Generation of Electricity Using Hydrogen Fuel Cells

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ABSTRACT

The climatic changes that are becoming visible today are the major challenges for the Global Research Community. Electricity generation is the process of generating electric power from the sources of primary energy, which is found in nature. The main aim of this work is to use hydrogen as an alternative source of energy. Hydrogen is the most abundant element in the Universe and thus, it is a never-ending source of energy. It is an energy carrier, which stores and delivers energy in the usable form, which can be produced from various domestic resources such as fossil fuels like natural gas and coal, biomass and water electrolysis. Also, Hydrogen fuel cell technology represents the alternative solutions for future clean energy systems. In the proposed work, hydrogen is converted into electric energy by using fuel cells, which do not produce any toxic gases. Fuel cells directly convert the chemical energy in hydrogen into electricity with pure water and potentially useful heat, as the only by-products. The proposed work also includes the current technologies used for hydrogen production from steam reforming, partial oxidation, auto-thermal processing and photoelectrolysis process.

Key words: Hydrogen fuel cells, Electrolysis, Fuel cell technology, Electricity generation.

1. INTRODUCTION

Hydrogen is the most abundant element on earth, which consists of only one proton and one electron. A fuel cell combines hydrogen and oxygen to produce electricity, heat and water. Fuel cells are similar to batteries, where both perform the energy conversion by a chemical reaction into the usable electric power. Fuel cells can produce electricity as long as hydrogen is supplied and these operate best when we supply pure Hydrogen[1]. Some fuels like natural gas, methanol, gasoline can also be reformed to produce the hydrogen required for fuel cells. Fuel cells can be used to produce power for an electric motor as well as directly producing electricity in place of a generator. In both the cases, they facilitate the replacement of a gasoline or diesel engine. Also, fuel cells do not produce any greenhouse gases or air pollutants. The product of the chemical reaction is only water and a small amount of heat. Fuel cells are mainly used as power sources in remote locations like spacecraft, remote weather stations, large parks, communication centres, rural locations such as research stations, military applications etc. The fuel cell system running on hydrogen is very compact and light weight. The annual production of hydrogen is estimated to be around 55million tons with its consumption increasing by approximately 6% every year. At the end of October 2019, there were around 80 fuel cell power plants operating in the United States with a total of 190MegaWatts of electric generation capacity. Both the electrolytic and plasma processes are highly efficient for hydrogen production, but these are considered as energy intensive processes.

2. OBJECTIVES

- To increase the electrical efficiency and durability of various fuel cells used for power production.
- To reduce the cost to a level competitive with conventional technologies.
- To increase the energy efficiency of production of hydrogen from electrolysis of water and renewable sources while reducing the capital costs.
- To reduce the rare earth elements, thereby reducing the greenhouse effect in the atmosphere.
- To reduce the dependence on imported hydrocarbons
- To contribute to economic growth and provide employment in country.

3. VARIOUS METHODS TO PRODUCE HYDROGEN GAS

Hydrogen can be produced by various processing technologies such as thermal processing, electrolytic processing, photolytic processing and so on.

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Dual Filter Based Images Fusion Algorithm for CT and MRI Medical images

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ABSTRACT: In this our methodology depends on two filters the first is the laplacian filter and the subsequent one is the guided filter, here the laplacian filter is utilized for denoising the detailed coefficients and the subsequent filter guided filter is utilized for refinement of both approximation and detailed coefficients of computer tomography(CT) and magnetic resonance imaging(MRI). In this first both the input image were converted in to frequency domain by utilizing wavelet transform then we acquired approximation coefficient and detailed coefficient and another two coefficient of computer tomography(CT) and magnetic resonance imaging(MRI) . Images Presently two weight maps are acquired after the procedure of comparison. The comparison is done between the two approximation coefficients and two detailed coefficients and dependent on this coefficients guided filter is planned. Here guided filter will manage a image relating to the weighted maps and the weight maps are smoothed based on guided filter and this is mainly utilized as an information image. Subsequently the weighted fusion algorithm will fuse the both CT and MRI pictures. The full clear fused image is possibly acquired when the CT and MRI images are refined by inverse wavelet transform. From the above outcomes, it is very well may be seen that the proposed framework gives better outcomes when contrasted with existing framework. Just as the proposed framework will give maximum amount of contribution in detail way.

Keywords: Fusion, Guided Filter, Weighted Fusion, haar wavelet Transform, Laplacian Filter.

I.INTRODUCTION

Fundamentally clinical diagnosis utilizes two kinds of techniques.one is CT and another is MRI[1]. The principle goal of the CT is to examine the human body. The CT check gives differential outspread ingestion and densities relying upon the X-beams. X-beams comprises of delicate tissues and hard tissues . Hard tissues has high thickness of resolution and soft tissues has low thickness resolution.

CT gives the data about the lung analysis and interestial lung diseases. For this CT filter utilizes high thickness of resolution. X-ray gives the data about the apprehensive system, muscle, feet by utilizing low thickness of resolution. The CT and MRI strategies are entirely unexpected to each other. For instance CT filtering utilizes both delicate and hard tissues and MRI utilizes just delicate tissues[2]. The CT and MRI strategies will intertwine the images of new patient. The fused image will gives the data about the size, location and state of the image. The main goal of using radiotherapist is to obtain the values of CT and MRI images and the values of fused image. By doing this we get more accuracy. This exactness will push the patient to accuracy the objective treatment. Here the host images are deteriorated by multi goals coefficient. These coefficients will pick the fusion calculation to get the resultant picture. The fusion calculation will give contribution about the commotion delicate and weighted normal fusion. This calculation will deliver the outcomes in simple manner. Fundamentally image fusion calculation is utilized in image preparing field. But in this different filter to be embraced for better performance. These filters will smooth the image just as edge extractions and image enhancement. After playing out

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A NOVEL EXTENSION OF THE CLASSICAL CONTEXTUAL MULTI-ARMED BANDIT WITH BCTS ALGORITHM FOR ONLINE LEARNING IN ONLINE AI RELATED SYSTEMS

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ABSTRACT

Artificial intelligence is the wisdom displayed by computers, unlike the actual intelligence exhibited by humans and animals. However, in certain situations, electronic incentives may not be the only driving criterion, because there are external restrictions and/or goals placed by laws, beliefs, desires or ethical standards. We detail a novel online agent that learns about a set of behavioral limitations through observation and uses these learned limitations as a guide when making decisions in an online setting while still being reactive to reward feedback. To characterize this specialist, we propose to embrace a novel augmentation to the classical con-textual multi-armed bandit setting and we give another calculation called Behavior Constrained Thompson Sampling (BCTS) that takes into account web based learning while at the same time complying with exogenous constraints. Our specialist learns a constrained strategy that actualizes the watched behavioral constraints exhibited by an instructor operator and afterward utilizes this constrained arrangement to control the prize based online investigation and abuse. We portray the upper bound on the normal lament of the contextual bandit calculation that underlies our operator and furnishes a contextual analysis with true information in two application areas. Our analyses show that the planned specialist can act inside the arrangement of behavior constraints without altogether debasing its general prize presentation.

KEYWORDS:
Behavior Constrained Thompson Sampling, Artificial intelligence, classical contextual multi-armed bandit, the Behavior Constrained Contextual Bandits Problem.

1. INTRODUCTION

In online decision-making environments, an individual may choose one of many potential acts, e.g. suggesting a film to a single person or offering medication to a participant in a clinical trial. Both of such behavior is related to a meaning, e.g. a user profile, and an input indicator, e.g. a compensation or ranking. Is only seen with the preferred alternative. In such electronic decision-making environments, the agent will know the implicit trade-off between experimentation, which includes finding and recognizing the benefit of behavior, and manipulation, which requires obtaining as much incentive as possible from practice.

We consider situations maybe where the behavior of the online operator ought to be confined in its decision of activity for given setting by-laws, qualities, inclinations, or moral standards (Russell, Dewey, and Tegmark 2015). All the more accurately, we apply a lot of behavioral requirements to the specialist that is autonomous of the prize capacity. For example, a parent or watchman gathering may need a film recommender framework (the agent) t to not prescribe specific kinds of motion pictures to kids, regardless of whether the suggestion of such motion pictures could prompt a high prize (Balakrishnan et al. 2018). In clinical settings, a specialist may need its determination emotionally supportive network to not suggest a medication that ordinarily works in light of contemplations identified with the patients' personal satisfaction.

Numerous choice problems where an operator is receptive to online criticism are displayed as a multi-armed bandit (MAB) problem (Mary, Gaudel, and Preux 2015; Villar, Bowden, and Wason 2015). In the MAB setting there are K arms, each related with a fixed however obscure prize likelihood circulation (Lai and Robbins 1985; Auer, Cesa-Bianchi, and Fischer 2002). At each time step, a specialist plays an arm, i.e., prescribes a thing to a client, and gets a prize that follows the

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Adsorption of Cr (VI) From Polluted Water Using Activated Carbon Prepared From Lagenaria Siceraria

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Abstract

The action of performing charcoal was from an idea of removal of chromium from polluted water in present days. The absorption characteristics of charcoal come from Lagenaria Siceraria plant stems for removal of chromium from polluted solutions. In surface chemistry the characteristics of absorbed substances were a structure of analysis by FTIR, SEM- EDAX, and XRD. An adsorption experiment has been performed in order to increase initial concentration, PH, in absorbed substances and contact time for removal process. The metal ion has PH dependent to a lesser elongation, ionic strength. A structure of data that is moving continuously was found to follow pseudo- second order of a data structure model. In thermodynamics the scope of an activity such as activation enthalpy, activation entropy, activation Gibbs free energy, and activation energy from an idea and possible of mechanism is also suggested.

Key Words: Characterization studies, Chromium (VI), Adsorption, Adsorption isotherms and Kinetics, Lagenaria Siceraria activated carbon, Chromium (VI) , application.

I. INTRODUCTION

There is a long search for sustainable chemistry in a centre stage. Heavy metals are dangerous to environment present in waste waters. There removal before waste water is visible. These substances are harmful to the environment. Chromium is poisonous metal used in liquid waste discharged in industries. These substances are present in paints, colored substances, leathers and metal fishing. Chromium has several oxidation numbers.

There is a variety of treatments for chromium have been described containing waste waters which include exchange of ions, reverse osmosis, the action or process of precipitating a substance from a solution, electro chemical reduction of conversion of reduced species, electro coagulation involves waste water treatments, and solid phase extraction is a mixture of separating to physical properties and chemical properties, resin chelation, polymer based membrane, cementation process binding together particle, electro kinetic remediation is a process using a direct current to remove heavy metals from soil are the methods to accomplish the small size of metal concentration.

Brazilian pine - fruit shell is a food residue, banana peel, carica papaya, Anaebana is a bacteria, vetiveria of small grasses, and date tree leaves are the techniques to removal of metals from wastage. These raw plant materials are absorbed organic compounds such as cellulose of complex organic polymers, Pectin is a soluble poly saccharide present in ripe fruits, lignocellulose is a complex of cellulose present in a solution.

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Load and Energy Aware Adaptive Zone Routing Protocol for MANET

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Abstract

In Mobile Ad Hoc Networks (MANET), during zone based routing, the zone radius should be adaptively varied depending on the overhead, energy consumption and packet reception rate. The load of the border nodules needs to be considered. This research work proposes Load and Energy Aware Adaptive Zone Routing Protocol (LEA-AZRP). In this protocol, zone leader is selected based on the nodule load. Then the proactive routing is applied within each zone and reactive or on-demand route discovery is applied across the zones. The zone radius is adjusted depending on the packet reception rate and data delivery time. Based on the relative mobility of the nodule, load and residual energy, the zone leader selection and zone construction are processed. By simulation results, it will be shown that the LEA-AZRP achieves higher throughput with reduced energy consumption.

20-21

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Review Article

FUZZY BASED SCHEDULING AND LOAD BALANCING FOR ZONE ROUTING PROTOCOL (ZRP) IN MOBILE AD HOC NETWORKS

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Abstract

This paper proposes Fuzzy based power scheduling and load balancing technique for ZRP in Mobile Ad Hoc Network (MANET). In this technique, the duty-cycles of the border nodes are adaptively adjusted based on the queue state, predicted residual energy and distance to border nodes. During each round, the nodes are in active state and then enter into the sleep mode based on estimate duty-cycle length. Then the zone leaders (ZL) are adaptively changed whenever its load exceeds.

Keywords: border node, duty cycle, fuzzy, load balancing, power schedule, queue state, residual energy.

Abbreviations: MANET, mobile ad hoc network; ZRP, zone routing protocol; ZL, zone leader.

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INTRODUCTION

MANET is a group of active, automated and radio fortified nodes deprived of any substructure. MANET need every single intermediary node to perform as forwarders, getting and advancing data to every another node. This sort of network is commonly positioned in numerous situations in which immediate connectivity turns out to be the on-going need, either in alternative circumstances such as a calamitous emptying condition or in an unplanned gathering for performances [1]. Due to frequent node mobility, network disconnections and link failures are common in this network [2]. Hence, routing becomes a critical job in MANET [3].

ZRP [14] handles issues by combining the best properties of both proactive and reactive routing protocols [4]. But still, many issues exist in ZRP which are to be solved. Data forwarding is performed by each node with maximum power thus ignoring its position in the zone. If the distance between the source and destination node is minimum, it leads to power wastage. On the other hand, if the distance is high, the destination may lie outside the zone radius. While increasing its broadcast attempts to determine the border node, the bandwidth consumption of source node will increase [5].

Location Based Topology Control approach was proposed by Niranjan Kumar Ray et al [6]. It combines topology control and power management techniques to reduce the transmission power of each node. Nodes are put into sleep mode based on the traffic load such that the network is not disconnected.

Zone based Collision Guided (ZCG) protocol has been developed by Shadi S. Basurra et al [7]. ZCG uses parallel and broadcasting techniques for route determination. The determined routes have high connectivity and lesser energy consumption. It splits the network into various zones in which reliable leaders are elected

A new routing algorithm was proposed by Indrajit Bhattacharya et al [8], which uses ZRP and Minimum Estimated Expected Delay (MEED) protocols. In this algorithm, the data is transmitted to the destination, within a specific deadline

The routing protocol proposed by Bency Wilson et al [9], combines both proactive and reactive routing methods. Like ZRP, it applies proactive routing inside the zones and reactive routing outside the zones. The speed and locations of each node are monitored continuously. This approach results in increased bandwidth utilization, reduced power consumption and less routing overhead.

Nassir Harrag et al [10] have proposed an algorithm Particle swarm optimization (PSO) and ZRP, to adaptively adjust the zone radius of each node. It enhances the performance of ZRP by reducing the delay, increasing the delivery ratio and reducing the control overhead.

A Genetic Zone Routing Protocol (GZRP) was proposed by Sateesh Kumar et al [11]. It applies Genetic algorithm for IERP and IARP components of ZRP. It determines multiple paths to the destination to perform load balancing. GZRP outperforms the existing ZRP to provide scalability and robustness.

An improved ZRP has been proposed by Xueqin Yanga et al [12]. It divides the network into various clusters and proactively selects the cluster head in each cluster.

An enhanced IERP has been proposed by Yurin Ogawa et al [13]. The node id of each zone is stored in a Bloom filter, which is exchanged between the border nodes. The bloom filter assists in forwarding the routing packet to the specified link, thereby reducing the control overhead.

MATERIALS AND METHODS

This paper proposes Fuzzy based power scheduling and load balancing technique for ZRP in MANET. In this technique, the duty-cycles of the border nodes are adaptively adjusted based on the queue state, predicted residual energy and distance to border nodes. During each round, the nodes are in active state and then enter into the sleep mode based on estimate duty-cycle length.
Then the zone leaders (ZL) are adaptively changed whenever its load exceeds.

In ZRP, a routing zone (RZ) with radius r is constructed for each node, individually, (ie) Each zone consists of nodes within r hop distance at the maximum. Hence zones may overlap each other. ZRP contains a proactive and reactive routing modules: IntrA-zone Routing Protocol (IARP) and IntEr-zone Routing Protocol (IERP). IARP manages a routing table for all nodes which belongs to its RZ. IERP applies route discovery

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Data Deduplication Strategies in Cloud Computing

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B. Haritha

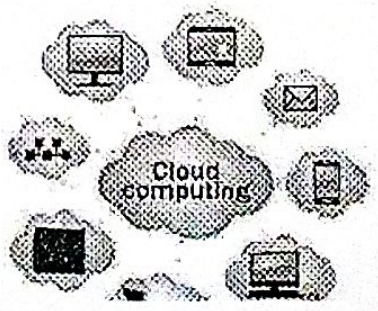
Abstract:- Cloud computing assumes an essential job in the business stage as figuring assets are conveyed on request to clients over the Internet. Distributed computing gives on-request and pervasive access to a concentrated pool of configurable assets, for example, systems, applications, and administrations This guarantees the vast majority of undertakings and umber of clients externalize their information into the cloud worker. As of late, secure deduplication strategies have bid extensive interests in the both scholastic and mechanical associations. The primary preferred position of utilizing distributed storage from the clients' perspective is that they can diminish their consumption in buying and keeping up capacity framework.

By the creating data size of appropriated registering, a decline in data volumes could help providers reducing the costs of running gigantic accumulating system and saving power usage. So information deduplication strategies have been proposed to improve capacity effectiveness in cloud stockpiles. Also, thinking about the assurance of delicate documents. Before putting away the records into the cloude stockpile they frequently utilize some encryption calculations to ensure them.In this paper we propose stratagies for secure information deduplication

Keywords:- Data De-Duplication, Cloud Computing.

I. INTRODUCTION

- **Cloud:** It is a technology of distributed data processing through internet technology in which some extensible information resources and limits are given as an assistance to number of external customers.
- **Cloud Computing:** Cloud Computing is a delivering computing power(CPU, RAM, Network Speeds, Storage OS software) a service over the internet with out physically having the computing resources at the customer location.
- **Example:** AWS, Azure, Google Cloud



The reimbursement of cloud computing:

- Less IT infrastructure and computer costs for users
- superior execution
- Less preservation issues
- Time to time software updates
- Enhanced compatibility between Operating systems
- endorsement and mending
- High Performance and Scalability
- More storage space ability
- Higher data protection

❖ *Types of Clouds*

There are four distinctive cloud models.

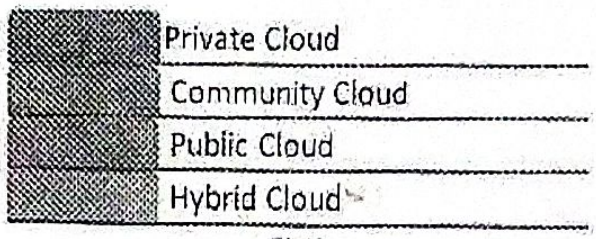


Fig 2

- **Private Cloud:** In this cloud compute components are deployed with in one particular association. This method is often used ,Where the processing assets can be represented, claimed and worked by a similar association for intra-business collaborations.
- **Hamlet cloud:** In this cloud computing resources are applied for a organizations and community .
- **Public Cloud:** This sort of cloud is utilized for company to Consumer type collaborations. Here the registering asset is claimed, administered and worked by government, a scholarly or business group.
- **Hybrid Cloud:** This kind of cloud can be utilized for both sort of connections - B2B (Business to Business) or B2C (Business to Consumer). This association technique is called half and half cloud as the dealing out assets are leap together by various mists.

❖ *Cloud Computing Services*

- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)
- Desktop as a Service(DaaS)

➢ *SaaS (Software as a Service)*

Software as a service is a plan of action of software licence .In this the applications are facilitateda vendor or expert association and made open to consumers over the web.

ISSN No:-2456-2165

Data Deduplication Strategies in Cloud Computing

MD. Jareena Begum
B. Haritha

Abstract:- Cloud computing assumes an essential job in the business stage as figuring assets are conveyed on request to clients over the Internet. Distributed computing gives on-request and pervasive access to a concentrated pool of configurable assets, for example, systems, applications, and administrations This guarantees the vast majority of undertakings and number of clients externalize their information into the cloud worker. As of late, secure deduplication strategies have bid extensive interests in the both scholastic and mechanical associations. The primary preferred position of utilizing distributed storage from the clients' perspective is that they can diminish their consumption in buying and keeping up capacity framework.

By the creating data size of appropriated registering, a decline in data volumes could help providers reducing the costs of running gigantic accumulating system and saving power usage. So information deduplication strategies have been proposed to improve capacity effectiveness in cloud stockpiles. Also, thinking about the assurance of delicate documents. Before putting away the records into the cloude stockpile they frequently utilize some encryption calculations to ensure them.In this paper we propose stratagies for secure information deduplication

Keywords:- Data De-Duplication, Cloud Computing.

I. INTRODUCTION

- **Cloud:** It is a technology of distributed data processing through internet technology in which some extensible information resources and limits are given as an assistance to number of external customers.
- **Cloud Computing:** Cloud Computing is a delivering computing power(CPU, RAM, Network Speeds, Storage OS software) a service over the internet with out physically having the computing resources at the customer location.
- Example: AWS, Azure, Google Cloud

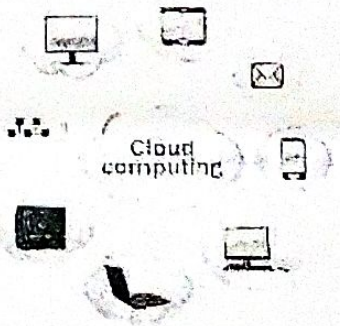


Fig 1:- Cloud Computing

The reimbursement of cloud computing:

- Less IT infrastructure and computer costs for users
- superior execution
- Less preservation issues
- Time to time software updates
- Enhanced compatibility between Operating systems
- endorsement and mending
- High Performance and Scalability
- More storage space ability
- Higher data protection

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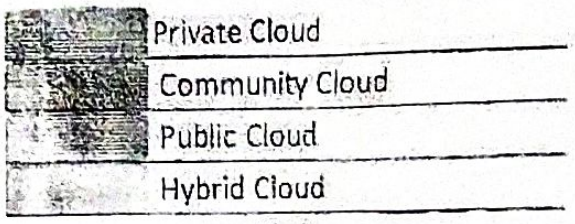

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A DETAILED MACHINE LEARNING ANALYSIS WITH AUTOMATED CLONE VALIDATION, INTEGRATED CLONE CODE DETECTION SYSTEM

VENKATESWARI GAVINI, S KRUPAMAI YENDRAPATI

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ABSTRACTS

In large software ventures, appropriate source code reuse can make advancement more productive, yet a ton of copy code and mistake code reuse can be a significant reason for troublesome framework upkeep. Productive clone code detection for large undertakings can help deal with the task. Thusly, when a client needs to locate a specific kind of clone in a large undertaking, they should dissect it over and again utilizing different instruments to change the choices. We present learning-based detection procedures where everything for speaking to terms and sections in source code is mined from the store. We assessed our novel learning-based methodology for code clone detection concerning practicality from the perspective of software maintainers. Our code examination bolsters a system, which depends on profound learning, for automatically connecting designs mined at the lexical level with designs mined at the syntactic level. Notwithstanding, the greater part of the clone detection techniques are hard to perform on versatile investigation that changes particularity or affectability as indicated by the kind of clone to be distinguished. In this examination, we propose a clone detection framework dependent on the automatic clone validation. . Lex based symbolic examination models and worldwide arrangement calculation based clone detection models had the option to recognize precise matches as well as different kinds of clones by setting lower bound scores. Utilizing highlights of the automatic clone validation.to kill works that can't be clone up-and-comers ahead of time, arrangement investigation was conceivable in any event, for large tasks, and the execution time was anticipated. For clone capacities, we pictured the coordinating region, which is the aftereffect of arrangement examination, to speak to clone data all the more proficiently. Results confirm that our learning-based methodology is reasonable for clone detection and a viable procedure for specialists.

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A COMPREHENSIVE ANALYSIS ON INDUSTRIAL NETWORKING CYBERSECURITY ISSUES BASED ON LI-FI WITH GREEN CLOUD COMPUTING

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Y Sireesha Krupamai
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Abstract

Industrial networking has numerous issues dependent on the sort of enterprises, data storage, data centers, and cloud computing, and so forth. Green data storage improves the scientific, business, and industrial profile of the networking. Future businesses are searching for cybersecurity arrangements with the ease assets in which the vitality serving is the principal issue in industrial networking. To improve these issues, green data storage will be the need since data centers and cloud computing manages data storage. In this examination, we have chosen to utilize sun powered vitality source and diverse light beams as approaches incorporate a crystal and the Li-Fi procedures. In this methodology, light beams sent through the crystal which permits us to transmit the data with various frequencies. This methodology gives green vitality and most extreme insurance inside the data center. Therefore, I have represented that cloud administrations inside the green data center in industrial networking will accomplish better security with minimal effort vitality through this investigation. Finally, we need to reason that Li-Fi improves the utilization of green vitality and insurance which are points of interest to current and future industrial networking.

Keywords— Green data storage; green cloud computing; Li-Fi; green data center; cybersecurity issues; industrial network.

I. INTRODUCTION

The green data storage and rapid transmission are the normal focuses on industrial networks. Light Fidelity (Li-Fi) is a vitality-efficient innovation developed for indoor applications yet it might be converged with Wi-Fi. Researchers previously demonstrated that they accomplished the rates of 224 gigabits for every second. This innovation accomplishment positively significantly alters how we utilize Industrial networking. Keeping green in industrial networking relies upon innovation improvement as well as relies upon human conduct which is driving us to consider the cybersecurity and security issues. Even though Li-Fi gives solid security to get to data from the outside of the data center, there are some cybersecurity issues inside the data center [1]. Utilizing light, we accomplish the enlightenment and transmission with a similar vitality which might be expected as green vitality since it ensures the data too without additional expense. As to, Li-Fi gives numerous points of interest that expansion quality, speed, most extreme assurance, and so forth. In each case, efficiency goes up because green vitality got from the Sun commands the green data storage, cloud computing, and data center.

Li-Fi (short for light fidelity) is a remote correspondence innovation that utilizes light to transmit data and position between gadgets. The term was first presented by Harald Haas during a 2011 TEDGlobal talk in Edinburgh.[1]

In specialized terms, Li-Fi is a light correspondence framework that is equipped for transmitting data at high speeds over the obvious light, bright and infrared ranges. In its current state, just LED lights can be utilized for the transmission of obvious light.[2]

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AN EFFICIENT STUDY ON GRADUATE STUDENTS ACADEMIC PROGRESS PREDICTION IN INDIA USING MACHINE LEARNING METHODOLOGIES

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Abstract

Machine-learning procedures were utilized to respond to the focal inquiry: does exceed expectations in perusing tests. a decent indicator of precisely anticipating the passing rate in FPC214 Fundamentals of programming Class assignments, for example, perusing tests (RQ), tests (Q) and Assignments (A), Tests (T), and midterm (MT) were planned. The indicator factors broke down are High GPA (>4.0), RQ, Q, and passing DS215 Data Structures and these were utilized to create two classifiers: CART with cross-approval and Random Forest. The CART and the Random Forest models distinguished Q, and Q and RQ, individually as the best indicator, even though test and perusing test accounted separately, for just 5% and 15% of the absolute weight. This recommends understudies who give the time and exertion into doing the understanding assignments and consequently passing both the RQ and Q are probably going to use comparable exertion and time in different class assignments and arrangements towards tests and assessments.

Keywords

Supervised machine learning, random forest, decision tree, GPA.

I. Introduction

Dweck advised that understudies with development mentalities will in general beat understudies with fixed outlooks [1]. The outlook is the trademark mental disposition that decides how one would decipher and react to circumstances [2]. The embodiment of dweck's work is that understudies with a development outlook accept that characteristics, for example, knowledge, character, and character can be created through the procedure of difficult work, exertion, and great systems. Development attitude understudies accept that these characteristics are possibilities that can be accomplished by going up against difficulties, benefitting from botches, and driving forward notwithstanding misfortunes. Likewise, dweck contended

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DESIGN AND IMPLEMENTATION OF PARALLEL FFT PROCESSOR FOR LTE SYSTEM USING RADIX-2

[1]K.SAHITYA, [2]K.MADHU SREE, [3]B.SIRISHA, [4]J. BHARGAVI, [5]K.PRANEETHA, [6]B. MAHA LAKSHMI

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ABSTRACT: In this paper, we describe a processor architecture tailored to FFT algorithm. The proposed design supports all FFT sizes, namely 128–2048/1536, required by the LTE applications. This architecture is based on the Transport Triggered Architecture, which was customized with a set of function units, designed especially for the application at hand. The processor has been synthesized on a standard cell technology and both energy-efficiency and performance have been evaluated. The proposed system is programmable but shows energy-efficiency comparable to fixed-function ASIC implementations.

KEY WORDS: Fast Fourier Transform (FFT), LongTerm Evolution (LTE), Application Specific Integrated Circuit (ASIC), Parallel Architectures, Software-defined Radio (SDR), Transport-Triggered Architecture (TTA).

I.INTRODUCTION

Interest towards efficient implementation of Discrete Fourier Transform (DFT) started in 1965 from the famous Fast Fourier transform (FFT) algorithm . Still, after almost half a century, remains very high due to fundamental useful properties of DFT. The recent boost of such interest is due to communication applications, in particular Long Term Evolution (LTE) and Software Defined Radio (SDR). In these applications, very efficient implementations of DFT are needed in order to support extremely tight, mutually contradicting constraints such as hard real-time requirements on top of low-power, low-cost, and flexible HW platforms. In LTE, computation of DFTs of a series of OFDM symbols is needed with the speed of 66.67μs per symbol. Each symbol is a vector of complex numbers of the length N, where N may take one of the following values: N = 128, 256, 512, 1024, 1536, or 2048. At the same time, the design should be really low-power and low-cost to be useful, since, the main target devices are portable consumer electronics such as mobile-(smart-)phones, laptops, etc. On the other hand, business models require flexible programmable implementations.

An important use case is SDR, where SW implementation of several radios, one of them typically being LTE, should be supported on top of a shared HW platform. Therefore, in SDR, even wider range of FFT sizes need to be supported under even tighter requirements. Thus, there is a great demand for efficient, very high-speed programmable implementation of FFTs of various sizes, including the sizes that are not powers of two. There is a vast amount of different implementations of FFT, e.g., to mention only few most recent publications related to communication applications. In particular, mixed-radix4/2 , and mixed-radix4/2/3 variable length FFT implementations were proposed . In most of the publications, either special purpose (fixed or reconfigurable) FFT HW architectures or SW FFT implementations on existing processor architectures are proposed. Conventionally, HW implementations are thought to provide better time and power performance but poor flexibility while the SW implementations are thought to provide high flexibility but poor performance in terms of execution time and power consumption. In this work, we propose a new customized Transport Triggered Architecture (TTA) based processor for programmable implementation

RESEARCH ARTICLE OPEN ACCESS

Implementation of Digital power saver

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Abstract:
The main objective of power saver is to reduce overall power consumption at public and private sector.MCS52series89C52 micro controller is used in the construction of power saver. The micro controller operates different loads according to time schedule programmed in EEPROME by reading the data from real time clock (RTC) for time and date. According to the user requirement the time schedule and connected load voltage can be programmed. 20 intervals per day can be used in the operation of each and every load. Different loads can be programmed according to the different timings according to day selection. Day selection is considered as primary. For practical purpose for different voltages with one 300VA transformer are taken. According to the requirement the load input voltages can be altered.

Keywords — Micro-controller, RTC, EEPROM.

I. INTRODUCTION

This project is designed to reduce the power consumption for domestic are commercial areas. Micro- controller, RTC, EEPROM and 3 relays are used in this project design. The program is written in the micro controller reads the schedule from EEPROME and operates the channel relays subsequently. Time information from RTC is continuously read by the micro controller and compraes with the EEPROM schedule according to which 3 relays are operated. Any channel can be programmed to ON or OFF at any time.[1]

A. *Requirements of project:*

- Software
  Keil software
- Hardware
  AT 89C52 Micro controller
  RTC
  EEPROM
  Power regulators

II. HARDWARE DESCRIPTION:

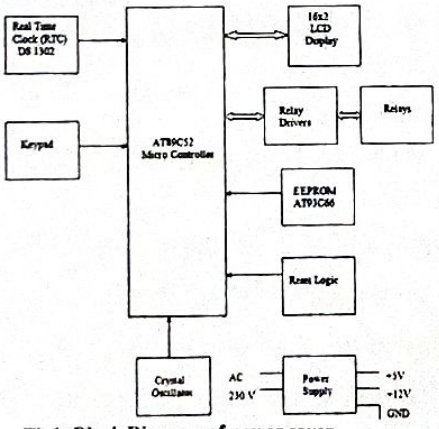

Fig1: Block Diagram of power saver

The entire electronics component such transistor, integrated circuits, etc generally requires DC for their operation. So AC supply is then stepped down. Now this stepped down AC is converted to DC supply by rectification process. There may be some ripples coming out of rectifying unit bypassed by connecting the capacitor in parallel. Then 12v supply given to the LM7805C51 regulator. Now as micro-controller, LCD module, relays and other certain ICs requires 5V DC supply for their operation we need a regulator uninterrupted 5V DC supply. Every circuit requires power for its operation. Here we require +5v dc to operate Micro-controller, Relays and certain ICs. The supply voltage of 230v ac is step downed to 12v by using the step-down Transformers. As the circuit requires only the dc supply the in fed ac is converted to dc by using the rectifying unit. This block involves production of 5V DC supply for whole circuit. [2]

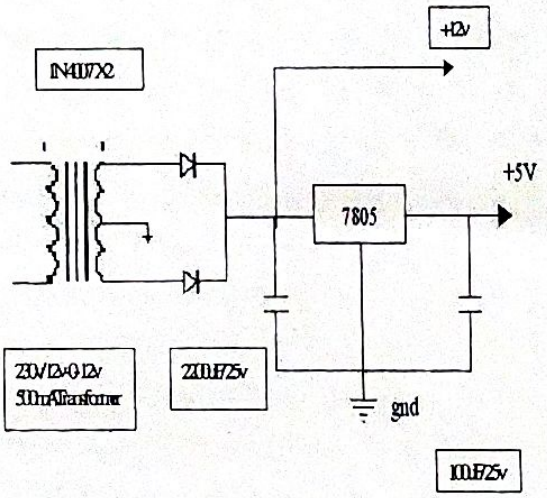

Fig2: Power supply

B. *AT89C52 micro-controller:*

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APERTURE COUPLED CYLINDRICAL DRA WITH RECTANGULAR PARASITIC ELEMENT FOR GAIN IMPROVEMENT

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Abstract: *An aperture coupled cylindrical DRA with rectangular parasitic elements is proposed in this paper. The proposed MIMO system is operating at 7.93GHz frequency. Using ROGERS 3010 as upper substrate and ROGERS 5870 as lower substrate with alumina (99.5%) lossy as DRA material the proposed antenna is designed. The proposed design has improved its performance in parameters like bandwidth and gain in the working frequency range 4 – 8 GHz. It provides high isolation up to 25.69 dB at frequency 7.93GHz. The proposed antenna is used in fixed satellite services which allows users in a specific area to make and receive phone calls.*

Keywords: Parasitic elements, Isolation, Bandwidth, Gain, DRA.

1. INTRODUCTION

Dielectric resonator antennas (DRA's) have largely being emphasized in last two decades because of several attractive features such as small size and light weight [1]. Due to several advantages over the micro strip antenna such as wide impedance, bandwidth, gain, DRA's have been introduced as vigorous candidates for wireless communications [2]. Moreover, present wireless communication devices require reconfigurable antennas because of various features in terms of frequency, radiation pattern, VSWR that provide to improve overall system performance [3]. Recent studies on DRA's have indicated the DRA's have some intriguing advantages such as wider bandwidth and lower loss compared to Micro strip antenna [4]. Parasitic elements in DRA antennas have been investigated from the view point of increasing the gain of the antenna [5]. [6] In this paper parasitic elements are placed next to the fed DR, which are usually of different same dielectric constants of same sizes. However, [7] illustrates the concept of gain enhancement by using parasitic elements in an H – plane asymmetric by placing parasitic elements on one side of active elements. A Yagi – uda is a directional antenna consists of a row of parallel straight cylindrical conductors of which only is driven by a source and all others are parasitic elements (Director and Reflector) [8].

2. CONCEPT AND DESIGN

The proposed design consists of two element array with pentagon shaped DRA with one reflectors and three directors. Reflectors are placed after the

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A Study on the Writing Skills of Toni Morrison | Original Article

— K. Krishna Kumari*, in *Journal of Advances and Scholarly Researches in Allied Education | Multidisciplinary Academic Research*

ABSTRACT

Toni Morrison uses a language full of metaphors and images to present the patriarchal oppression in her books. In an interview with Nellie Y. McKay, Morrison observes, –I tend not to explain things very much, but I long for a critic who will know what I mean when I say ‗church' or ‗community,' or when I say ‗ancestor,' or ‗chorus.' Because my books come out of those things and represent how they function in the [B]lack cosmology.

Morrison's writing requires that the reader have some knowledge of the African American community and its traditions. For this reason, she does not provide the details she assumes the reader already knows. She wants the reader to intervene, fill in the missing gaps and be able to understand the unwritten words of an oral language. Marc C. Conner argues, –The reader is not told where the conversation is taking place—at a card table, in the kitchen, or over a backyard fence. Morrison leaves spaces for the reader to fill. She knows that there will be ‗holes and spaces' in the text that are caused by writing down an oral language, but Morrison also expects the reader to fill in those gaps with communal knowledge.

Adsorption of Cr (VI) From Polluted Water using Activated Carbon Prepared from Vincarosea Apocynaceae

O.Sreedevi, K.Ravindhranath

Abstract— The performance removal of chromium (VI) from polluted water is discussed in this paper. The sorption characteristic of Nitric Acid activated carbon derived from Vincarosea Apocynaceae plants through oxidation process and was proposed for the removal of Cr (VI) from polluted solutions. The surface chemistry characteristics of the prepared adsorbent were analysis by XRD, FTIR and SEM-EDAX. The effects are determined for removal of chromium they are initial concentration, PH level and adsorbent dose. The metal ion removal was pH dependent and, to a lesser extent, ionic strength. Kinetics data were found to follow the pseudo-second order kinetic model. Activation thermodynamic parameters, such as activation enthalpy (ΔH^*), activation entropy (ΔS^*), activation Gibbs free energy (ΔG^*) and activation energy(E), have been evaluated and the possible adsorption mechanism also was suggested.

Key Words: Vincarosea Apocynaceae Activated Carbon, Chromium (VI), Adsorption Isotherms and Kinetics.

I. INTRODUCTION

Nowadays, heavy metals are among the most important pollutants in source and treated water and becoming a severe public health problem. The main problem in this entire world is heavy toxic metals are obtained while water is contaminated [1]. In the environment, the species of metallic are increased because of the domestic effluents, agriculture run off and mining activities [2]. Coming to aquatic water, it consists of four oxidation states they are di, tri, penta and hexa states. These states are combined to the trivalent chromium and hexavalent state. Trivalent chromium acts as the micro nutrients which is essential for glycolsis whereas hexavalent chromium is 500 times more toxic than the trivalent chromium. Thus, the presence of Cr (VI) ions in the environment is posing serious problems and causing great public concern [3]. These tissues will irritate the plan and animal's skin because of the oxidant agent is strong. This agent easily passes to the skin from the environments of aquatic [4]. According to USEPA, the permissible level of Cr (VI) in drinking water should be less than 100µg/L [5].

Many physical-chemical methods, included reduction [6], ion exchange [7], precipitation [8] and membrane separation [9], have been proposed for Cr(VI) removal from industrial effluent. However, these methods are often inefficient and/or cost disadvantageous when they are used to remove heavy metal ions from solution [10]. Adsorption methods were found to be more effective and attractive due to its lower costs and the higher efficiency of heavy metal ions removal from waste water [11].

To obtain good adsorbent in the water, mainly active carbons are used and consist of mainly adsorptive sites. To remove the chromium ions from polluted water, active carbons are used and active carbons plays important role in the adsorption process. There will be huge number of waste products and expensive natural materials to perform the operations. There will be no expensive regeneration for this disposed one. Hence the capacity of contaminant sorption is very high and available at low cost [13]. Here various types of studies are given, they are seaweeds [17], Eucalyptus Bark [15], Peanut Husks Carbon [19], Beech Sawdust [14], Bagasse Fly Ash, Coir Pitch [18], Green Algae [16], Activated Slag, Zeolite Tuff [20], Fabric Cloth, etc. All these studies need some high sate adsorbents. Here the operational cost is reduced by 36%, capital cost is reduced by 20% and at last the total cost is reduced by 28%.

Some adsorbents are required which are very effective in an economical way. Basically, to remove chromium (VI) an adsorbent is used, the adsorbent is named as Vincarosea Apocynaceae. This adsorbent is indicated in the literature survey. Vincarosea Apocynaceae belongs to the family of Vincarosea Apocynaceae which consists of Apocynaceae carbons. Hence from waste water the chromium is removed based on this Vincarosea Apocynaceae adsorbent. To estimate the behavior of adsorption in chromium (VI), thermodynamic functions are used. This is obtained at different temperatures. Here we investigate the parameters like temperature, pH concentration and agitation time. Classical methods are introduced by using new techniques. The new techniques are given as FT-IR, SEM, and EDX & XRD. By using NVAC, the chromium (VI) is removed from the polluted water.

II. MATERIALS AND METHODS

2.1 Chemicals And Reagents

By using the double stilled water, the investigation for chemicals and reagents is done. Based on the grade of A.R the entire investigation process is performed. Hence from this solutions are prepared.

2.2 Materials Of Adsorbent

In India, the evergreen shrub is growled by using the Cape periwinkle. sadabahar or Rosea periwinkle is the

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Design and Implementation of 16-Bit Baugh-Wooley Multiplier

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Abstract

In this paper we centered upon the Design and Implementation of 16-bit Baugh-Wooley multiplier . Different electronic gadgets dependent on VLSI innovation have been important to the examination network from a very long while. These incorporate plans for adders and multipliers. This postulation focuses on a multiplication of marked number with two's complement shape, in particular the Baugh-Wooley multiplier and the device for this reason for existing was Xilinx ISE 14.2. The Baugh-Wooley multiplier with its fundamental writing survey and its Mathematical figuring for 16-bit multiplier was given reference to 4-bit engineering as in writing. It very well may be seen that the circuit comprises fundamentally of a few full-adders so a decent full-adder arrangement in Verilog-HDL straightforwardly adds to the productivity of the Baugh-Wooley multiplier. In this way the full-adder can be acknowledged in Xilinx ISE 14.2. At long last we plan in Xilinx and investigate the simulated result . The plan was observed to be proficient than the current structure of multiplier for two's complement numbers.

KEYWORDS *- Baugh-Wooley Multiplier ,Fulladder, VLSI, Xilinx.*

I. INTRODUCTION

Multipliers assume an imperative job in the present verilog programming and different applications. With advances in innovation, numerous analysts have attempted and are endeavoring to plan multipliers which offer both of the accompanying structure targets – fast, low power utilization, consistency of format and henceforth less territory or even blend of them in one multiplier along these lines making them reasonable for different rapid, low power and reduced VLSI implementation.The regular increase strategy is "include and move" calculation. In parallel multipliers number of halfway items to be included is the primary parameter that decides the execution of the multiplier. To diminish the quantity of incomplete items to be included, Modified Baugh-Wooley calculation is a standout amongst the most mainstream calculations. To accomplish speed enhancements Wallace Tree calculation can be utilized to decrease the quantity of consecutive including stages [1].

Further by consolidating both Modified Baugh-Wooley calculation and Wallace Tree method we can see favorable position of the two calculations in a single multiplier. Anyway with expanding parallelism, the measure of movements between the fractional items and middle of the road wholes to be included will build which may result in diminished speed, increment in silicon region because of anomaly of structure and furthermore expanded power utilization because of increment in interconnect coming about because of complex steering. A multiplier is one of the key equipment obstructs in most DSP frameworks. Typical DSP applications where a multiplier plays an important role include digital filtering, digital communications and spectral analysis.

II. TYPES OF DIGITAL MULTIPLIERS

The multiplier architectures can be generally Classified into following categories:

- Serial multiplier
- Parallel multiplier
- Serial-parallel

A. Serial multiplier

The least troublesome method1 to perform increase is to incorporate arrangement of incomplete items. The successive multipliers use a dynamic development estimation. They are essential in structure in light of the fact that both the operands are entered consecutively. Hence, the physical circuit requires less equipment and a base proportion of chip area. In any case, the speed Performance of the consecutive multiplier is a result of the operands entered progressively.

B. Parallel multiplier

Most exceptional computerized frameworks join a parallel increase unit to complete rapid numerical tasks. A microchip requires multipliers in its arithmetic logic unit and an digital signal processing system requires multipliers to actualize calculations, for example, convolution and sifting. Parallel multipliers present fast execution, however are costly as far as silicon region and power utilization in light of the fact that in parallel multipliers both the operands are contribution to the multiplier in parallel way [2].
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Extensive Survey of Hybrid Routing Protocols in MANET

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Abstract: - In Mobile Ad hoc Networks (MANETs), proactive protocols involve huge storage overhead because of routing table size and reactive or on-demand routing protocols involve high latency. Hybrid routing protocol combines the advantages of both proactive and reactive protocols. Though lot of surveys has been done on hybrid routing protocols on MANET, mostly the survey was on zone routing protocol (ZRP) and its variants. In this paper an extensive survey has been made on hybrid routing protocols in MANET. It classifies the hybrid routing protocols as zone based, multi path based and Ant colony based. It presents the detailed description of each work under each category. A comparison table is also presented with advantages and disadvantages of each work.

Keywords: - MANET: Proactive: Reactive and Zone routing protocol.

I. INTRODUCTION

In mobile ad hoc network (MANET), mobile devices are formed as self-organizing, self-creating and self-administering wireless network. A MANET is a collection of mobile platforms called as nodes that can dynamically be set up anywhere and anytime without using any pre-existing network. It is considered as a self-governing system in which mobile nodes are connected by wireless links and moving randomly. The system may be operated independently or integrated with gateways to a fixed network [1].

There is a compromise between table driven and on-demand routing protocols. Proactive or table driven protocols have less latency and more traffic, while reactive or on-demand protocols have more latency and less traffic. Hybrid routing approach is introduced to overcome the shortcomings of both reactive and proactive routing approaches. It merges the advantages of both proactive and reactive approaches. It uses table maintenance technique of proactive and route discovery mechanism of reactive protocols, so as to avoid overhead issue and latency in the network. Hybrid routing approach is relevant for large networks. This broad network is divided into sets of zones. Proactive and reactive approach can be applied inside and outside the zone respectively. There are numerous popular hybrid routing approaches for MANET like Zone Routing Protocol (ZRP), Zone-Based Hierarchical Link State Routing Protocol (ZHLS), Dynamic Source Tracing Protocol (DST) and Distributed Dynamic Routing Protocol (DDR) [3].

II. EXISTING SURVEY ON HYBRID ROUTING PROTOCOLS

Lot of survey works have been done related to hybrid routing protocols in MANET. This section presents some of the existing survey works on hybrid routing protocols.

Ibikunle Frank et al [1] have examined three hybrid routing protocols in MANET. They are, Adaptive Distance Vector (ADV) routing protocol, Zone Routing Protocol (ZRP) and Sharp Hybrid Adaptive Routing Protocol (SHARP). The performances of these protocols were compared with each other using NS2. ADV shows better performance than ZRP and SHARP in terms of packet delivery ratio and average end-to-end delay.

Gaurav Kadyan et al [2] have compared Zone routing protocol (ZRP), Core extraction distributed Ad-hoc routing protocol (CEDAR) and Secure Zone routing protocol (SZRP). They have considered two metrics for evaluation they are, Average routing load and average route

Advanced and Distributed Relative Segment and Opportunistic Routing for Congestion Control and Traffic Management in MANET

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Abstract

Mobile Ad-hoc Network (MANET) is a multi-hop hybrid wireless network with mobile nodes that can move independently. The network depends on the node assistance for providing the packet routing. Routing is the basic operation in ad-hoc networks. The routing algorithm should be robust, adaptive, and in a self-organized way. The node mobility increases the complexity of routing because the greater the mobility of the nodes, the more the chances of link breakage. Re-routing in a mobile ad-hoc network is costly and would result in flooding which forms congestion in the network due to the lack of infrastructure. There are different types of routing algorithms to process efficient data communication between nodes in wireless networks. Very few algorithms have addressed the problem of congestion and routing mobility. In this paper, an approach called Advanced and Distributed Relative Segment and Opportunistic Routing (ADRSOR) for congestion control and traffic management is proposed for mobile ad-hoc networks. Traffic data from the networks is analyzed. If traffic increases, throughput significantly increases with respect to dynamic data transmission. This approach is extended to support dynamic topology maintenance and traffic management. Simulations are done in NS3. Throughput, time, and end-to-end delay are the performance metrics used to assess the efficiency of the proposed approach. The proposed work is compared with the state of the art works available in the literature.

Index Terms: Network communication, traffic management, mobile ad-hoc networks, routing, throughput, congestion control.

1. INTRODUCTION

Mobile Ad-hoc Networks (MANET) are the networks which are self deployable and the deploying is purely on ad-hoc basis. They find applications in diversified fields i.e., war zone communication, crowd control, emergency services, and traffic management. In MANET, topology maintenance and data flow control are two important issues addressed by various researchers. Hybrid wireless network consists of both infrastructure (topology) wireless networks and mobile ad-hoc networks. In recent years, usage of wireless devices like mobile phones, laptops, and tablets is increasing at a phenomenal rate and hence the techniques of topology interface and also ad- hoc infrastructural interface are getting improved. For the efficient maintenance of infrastructure and ad-hoc interfaces, hybrid data transmission is widely required. Basic representation of the mobile ad-hoc network is shown in Figure 1.

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Determination of Olanzapine with DDQ by charge transfer complexaction using UV spectrophotometric method

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Abstract: The simple and sensitive spectrophotometric method for the determination of Olanzapine reacts with 1ml of DDQ (2, 3 –dichloro -5, 6-dicylano-1, 4-benzoquinone) by charge –transfer complex method. In this method the drug Olanzapine as n-electron donors with acceptor 2, 3 dichloro-5, 6- dicyano 1,4- benzoquinone (DDQ) to form reddish pink color charge-transfer complexes. This reaction is instantaneous and quantitative. The drug maximum absorbance at 450 nm and Beer's law limit was obeyed at 30-150 µg/ml. The optical characteristics of the proposed method such as molar absorptivity, sandell's sensitivity, slope and intercept were $5.16x10^3$ $L.mole^{-1}$ cm^{-1} , 0.00161 $\mu g.cm^{-2}$,0.0050 and -0.005 the correlation coefficient is 0.9999 for Olanzapine respectively. The developed method was found to be simple, specific, robust, accurate and precise for the determination of Olanzapine.

Key words: Olanzpine, chloroform, methanol, DDQ and UV-Spectrophotometric method.

Date of Submission: 03-12-2018 Date of acceptance: 20-12-2018

I. Introduction

Olanzapine is an atypical antipsychotic, approved by the U.S. Food and Drug Administration (FDA) for the treatment of schizophrenia and bipolar disorder [1]. Chemically olanzapine is 2-methyl- 4-(4-methyll-1-piperaziny1) – 10H- thin (2, 3-b) (1, 5) benzodiazepine. Its trade names are lazed, zypadhera, zappers and molecular formal is C_{17} H_{20} N_4 S and molecular weight is 312.439 olanzapine melting point is 195^0C(383 F) Olanzapine is used for schizophrenia and bipolar disorder [2].

Olanzapine tastes ranging from 2.5 to 20 milligrams. Zyprexa (and generic olanzapine) is available as an orally dis integrating water which rapidly dissolves in salive. It is also available in 10 milligram vials for intramuscular injection.

The principal side effect of olanzapine is weight gain which may be profound in some cases and for associated with dearrangements in the blood lipid sugar profiles. Extrapyramidal side effects may include tremors and muscle rigidity

Various methods have been reported in literature for the estimation of olanzapine and other combination drugs which includes UV spectrophotometric method [3-5], HPLC [6-9], GC [10] and FIA [11]. A few visible spectrophotometric methods [12, 13] have been reported.

The spectrophotometric method is based on the reaction of olanzapine 2, 3 –dichloro5, 6- dicyano-1, 4-benzoquinone (DDQ) to form a red colured charge – transfer complex. The red coloured solution is used to determine the olanzpine spectrophotometrically. The reaction sequence can be shown in scheme 1.

II. Experimental

2.1 Instrumentation

A Shimadzu UV-visible double beam spectrophotometer (model 2450) with 1 cm matched quartz cells was used for the spectral measurements.

2.2 Chemicals and reagents

All the chemicals used were of analytical grade. Double distilled water was used for all the experimental studies.

2.3 DDQ solution (1% w/v)

DDQ (2, 3-dichloro5, 6-dicyano-p-benzoqunone) (Loba Chem., India) solution is prepared by dissolving 100 mg in 100 ml of distilled water.

2.4 Olanzapine solution

An accurately weighed 50 mg of olanzpine is dissolved in methanol and the volume was adjusted to 50 ml with methanol. Further dilution is made to obtain the working concentration of 100 µg /ml. 2.5 Spectrum of

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