List of research papers in the Journals notified on UGC website during the year 2020

Energy Sources, Part A: Recovery, Utilization, and Environmental Effects

Ready to submit?

Start a new manuscript submission or continue a submission in progress

Go to submission site

Submission information

- Instructions for authors
- Editorial policies

Editing services

- Editing services site

About this journal

- Journal metrics
- Aims & scope
- Journal information
- Editorial board
- News & call for papers

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Journal information

Print ISSN: 1556-7036 Online ISSN: 1556-7230

24 issues per year

Open access

You have the option to publish open access in this journal via our Open Select publishing program. Publishing open access means that your article will be free to access online immediately on publication, increasing the visibility, readership and impact of your research. Articles published Open Select with Taylor & Francis typically receive 95% more citations* and over 7 times as many downloads** compared to those that are not published Open Select.

Your research funder or your institution may require you to publish your article open access. Visit our Author Services website to find out more about open access policies and how you can comply with these.

You will be asked to pay an article publishing charge (APC) to make your article open access and this cost can often be covered by your institution or funder. Use our APC finder to view the APC for this journal.

Please visit our Author Services website if you would like more information about our Open Select Program.

*Citations received up to 9th June 2021 for articles published in 2016-2020 in journals listed in Web of Science®. Data obtained on 9th June 2021, from Digital Science's Dimensions platform, available at https://app.dimensions.ai
**Usage in 2018-2020 for articles published in 2016-2020.

Page and submission charges

There are no page or submission charges for this journal.

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Colour figure charges

Energy Sources, Part A: Recovery, Utilization, and Environmental Effects ›
Latest Articles

Reviews

Impact of liquid fuel injection timings on gaseous hydrogen supplemented - preheated straight vegetable oil (SVO) operated compression ignition engine

P. S. Ranjit ✉

Departmnet of Mechanical Engineering, Aditya Engineering College (A), Surampalem, India

Correspondence
✉ psranjit1234@gmail.com
View further author information

ala
d online: 01 Apr 2020
30/15567036.2020.1745333

ABSTRACT

Direct usage of straight vegetable oil (SVO) in transportation division is still a big challenge because of its unfavorable qualities, such as: high density, high viscosity, and lower calorific value. The present investigation address this issue with synchronous work of three components (i) preheating of the SVO with waste heat recovery framework, (ii) advancing the injection timing of liquid SVO in pre-heated mode from its manufacturer recommended timing, and (iii) supplementing with small dosage of gaseous hydrogen (GH_2). Experimental investigation was done on a Single cylinder, 4 S, Water cooled, naturally aspirated, In-direct Injection (IDI) diesel

Energy Sources, Part A: Recovery, Utilization, and Environmental Effects >
Latest Articles

101 Views 2 CrossRef citations to date 0 Altmetric

Reviews

Impact of liquid fuel injection timings on gaseous hydrogen supplemented - preheated straight vegetable oil (SVO) operated compression ignition engine

P. S. Ranjit & Venkateswarlu Chintala

Received 29 Jul 2019, Accepted 12 Mar 2020, Published online: 01 Apr 2020

Download citation https://doi.org/10.1080/15567036.2020.1745333 Check for updates

ABSTRACT

Direct usage of straight vegetable oil (SVO) in transportation division is still a big challenge because of its unfavorable qualities, such as: high density, high viscosity, and lower calorific value. The present investigation address this issue with synchronous work of three components (i) preheating of the SVO with waste heat recovery framework, (ii) advancing the injection timing of liquid SVO in pre-heated mode from its manufacturer recommended timing, and (iii) supplementing with small dosage of gaseous hydrogen (GH_2). Experimental investigation was done on a Single cylinder, 4 S,

Control Theory and Technology

Editorial board Aims & scope Journal updates

Control Theory and Technology is an international peer-reviewed journal, which provides a forum for the control scientists and engineers to exchange related knowledge and experience. It publishes high-quality papers on the theory and applications of control, with particular attention given to the emerging topics, original methods, and cutting-edge technologies in the area of systems and control. — show all

Editor-in-Chief

Yiguang Hong

Publishing model

Hybrid (Transformative Journal). How to publish with us, including Open Access

24,490 (2021)

Downloads

Latest issue

Volume 20

Issue 2, May 2022

Electronic ISSN 2198-0942
Print ISSN 2095-6983

Abstracted and indexed in

ACM Digital Library
Baidu
CLOCKSS
CNKI
CNPIEC
Chinese Science Citation Database
Dimensions
EBSCO Discovery Service
EI Compendex
Emerging Sources Citation Index
Google Scholar
INSPEC
Mathematical Reviews
Naver
Norwegian Register for Scientific Journals and Series
OCLC WorldCat Discovery Service
Portico
ProQuest Advanced Technologies & Aerospace Database
ProQuest-ExLibris Primo
ProQuest-ExLibris Summon
SCImago
SCOPUS
TD Net Discovery Service
UGC-CARE List (India)
WTI AG
Wanfang
zbMATH

Published: 17 January 2020

Stability and weighted sensitivity analysis of robust controller for heat exchanger

Sapna Gupta, Rajeev Gupta & Subhransu Padhee

Control Theory and Technology **18**, 56–71 (2020)

Abstract

This study presents a parametric system identification approach to estimate the dynamics of a chemical plant from experimental data and develops a robust PID controller for the plant. Parametric system identification of the heat exchanger system has been carried out using experimental data and prediction error method. The estimated model of the heat exchanger system is a time-delay model and a robust PID controller for the time-delayed model has been designed considering weighted sensitivity criteria. The mathematical background of parametric system identification, stability analysis, and H_∞ weighted sensitivity analysis have been provided in this paper. A graphical plot has been provided to determine the stability region in the (K_p,K_i), (K_p,K_d) and (K_i,K_d) plane. The stability region is a locus

[46] S. Bittanti, L. Piroddi. Non linear identification and control of a heat exchanger: a neural network approach. *Journal of the Franklin Institute*, 1997, 334(1): 135–153.

Author information

Authors and Affiliations

Department of Electronics Engineering, Rajasthan Technical University, Kota, Rajasthan, India

Sapna Gupta & Rajeev Gupta

Department of Electrical and Electronics Engineering, Aditya Engineering College (Autonomous), Surampalem, Andhra Pradesh, India

Subhransu Padhee

Corresponding author

Correspondence to Sapna Gupta.

Additional information

Sapna GUPTA received Bachelor's degree of Technology in Electronics and Communication Engineering from Rajasthan Technical University, Kota, India in 2012. She received the Master's degree of Technology in Electronic Instrumentation & Control from University college of Engineering, Rajasthan Technical University, Kota, India in 2014. Currently, she is pursuing the Ph.D. degree

International Journal of Innovative Technology and Exploring Engineering (IJITEE)
ISSN: 2278-3075 (Online), Volume-9 Issue-3, January 2020

Chunk by Chunk Irrigation of Farm Field -Through Wireless Sensing Technique

Shaik Vahida, Rayudu Srinivas, Rama Reddy T, Sheik Shabuddin, B.Durga Anuja

Abstract: Farming act as a heart to Indian economy and is a work of farmers. Farmers pursue certain set of stages to farm a field and irrigation is essential stage among all stages. Farmers are using so many irrigation methods to farm a field and the Irrigation methods must be in such way that, it have to boost plant development while minimizing salt inequities, leaf injuries, soil erosion, and water loss. To get good results in irrigation we should use good irrigation system. Now a days, farmers are using so many irrigation systems to pump water on the farm like traditional, modern and automated methods. Even though farmers facing problems like current shocks, standing long time and monitoring each and everything to pump water on the entire farm. In this paper modernistic sensor-based water pumping system is proposed to made irrigation easy to the farmers by chunk by chunk irrigation and each chunk is supervised with the help of soil moisture, temperate and humidity sensors. One more criteria, farmer need to concentrate while selecting an irrigation method is power supply, especially in Andhra Pradesh there is a regular power cuts in the nights.so that farmers can't go every time to monitor how the irrigation is in the nights. Because in the nights snack and poisonous insects will be there in farm field, so it will be dangerous to the farmer's life.so, by using proposed irrigation method irrigation will be easy in regular power cut areas, sloppy area and irrigation at night time.one more benefit from this proposed method is man power will decrease.

Keywords: Farming, Irrigation, Sensor, Power-cuts.

I. INTRODUCTION

In every country, Farming is the Prime area of economy and farming makes straight usage of natural resources. Farming sector is key to less industrialized nations and fewer importance in countries which have good industrialization. Till industrialization, most people worked in farming.

Revised Manuscript Received on January 30, 2020.
* Correspondence Author
Shaik Vahida*, Assistant Professor in Computer Science and Engineering Department, ACET, Surampalem, India. Email: vahida.shaik@acet.ac.in
Rayudu Srinivasa, Professor in Computer Science and Engineering Department,AEC,Surampalem,India.India.Email:rayudu_srinivas@rediffmail.com
Rama Reddy T, Professor in Computer Science and Engineering Department, AEC, Surampalem, India. Email:ramareddy@gmail.com
Sheik Shabuddin, Assistant Professor in Computer Science and Engineerin, Aditya College of Engineering and Technology, Surampalem, India. Email:shabuddin.sheik@acet.ac.in
B Durga Anuja, Assistant Professor in Computer Application Department, Govt Degree College for women's , Sri Kalahasti, India. Email:anujabalireddi@gmail.com

Before industry revolution most of the human beings worked as farmers and farmers cultivate maximum of their crops for their personal eating instead of buying. Currently, farming sector is the biggest income provider in India and is work of people we lived in rural areas of a country. And farming also play an important role to figure out the GDP of country. Maximum industries also use farming sector for raw materials. Over the past century a extraordinary alterations happened in farming practices as a result of the development of world market and improved technologies in farming sector [1].

In this farming sector farmer play a key role. Every human being eating food three times a day because of farmer only. Here farmer will follow some step like selection of crop, preparation of land, selection of seeds, sowing, irrigation, growth of a crop, fertilizing and lastly harvesting to cultivate the crop.in these all step one most important step is irrigation. Proper irrigation of farm field will result in good crop.so, we should select good irrigation method to get good results in farming in all aspects. And we need to consider the following thing before selecting irrigation method [2][3][4]

1. Manpower should reduce
2. Safe night time irrigation of farm field(to save farmer life from snacks and dangerous insects)
3. Based on crop type and season, irrigation should be done
4. SMS to information about irrigation work to the farmer to monitor from home itself

In this paper an automated method called "Chunk by Chunk Irrigation of Farm Field -Through Wireless Sensing Technique" is proposed which will act as good irrigation system by considering above things.

II. LITERATURE SURVEY

Here, a method is developed which will be better when compare with the following methods which are already in use with respect of man power reduction and save farmer life in night time while irrigation from snacks and poisonous insects.

A. Irrigation using traditional approaches

Pulley system, Chain Pump, Dhekli and Rahat are treated as traditional methods of Irrigation. These methods require animal or human labor to function. The first one is Moat, it contains drawing up water from a well to wet the farm field. Moat approach is cost effective and it consumes time and wastage of water will be avoided with this approach. And the next one is pump chain, this approach comprises of big dual wheels attached with a chain.

International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878, Volume-8 Issue-5, January 2020

Mechanical Properties of Glass Fiber Concrete with Different Dosages of Glass Fiber

T.Sai Krishna Teja, Tiriveedhi Sai Krishna, Syed. Nizamuddin Khadri

Abstract : Conventional concrete i.e. the concrete generally has low tensile strength with limited ductility and low resistance towards cracking. The micro cracks that are developed internally are inherent among concrete and can be explained with the help of propagation of that micro cracks due to its inferior tensile strength. Different fibers, added at a certain percentage of concrete known to improve the deformation properties of concrete along with the plasticity against crack resistance, such as flexural strength. Mainly concrete & ferroconcrete research has been moved to steel fibers, and glass fibers have recently become more available, with no corrosion problems associated with glass fibers. This article describes an experimental study of the usage of glass fibers in the structural concrete. High-dispersion CEM-FILL fiberglass of 14 µm diameter with an aspect ratio of 857 was used at a dosage of 0.33% to 1% by weight in concrete and its mechanical properties such as compressive strength, flexural strength and modulus of elasticity.

Keywords: Glass fiber, aspect ratio, indirect split tensile strength.

I. INTRODUCTION

There is increase in concrete use with an increase in development of infrastructure [1]. Due to this, the consumption of concrete is constantly increasing, and the main natural components that make concrete, i.e. small & coarse aggregates were depleted at a very rapid rate. This necessitates of the use of alternative materials that will be added to the cement without reducing its strength performance [2]. It is an idea to added ingredients which improve the performance. In this regard, several researchers have worked on the use of materials such as rice husk, sugar cane buggas & fiberglass, etc. On addition of a new fiberglass to standard concrete, you should keep in mind the short & long term interaction [3]. Ingredient with other elements, the effect on compression strength, flexural strength, performance, durability, permeability, tensile strength, bonding and uniformity [4]. Performance requirements are dependent on many other major factors such as type of mixing, mixing time, modes of transportation, placement, use of impurities, curing methods, and climatic factors [5]. This paper uses CEM-FIL anti cracking HD glass fibers having a modulus of elasticity of 72 GPa, of diameter of 14 µm, specific gravity of 2.68, length of 12 mm, and a aspect ratio of 857.10. Approximately, 212 million fibers per kg were used to prepare standard M30 concrete by replacing the fine aggregate by 1.5%. Fibers are available in large quantities and are a waste of the glass industry [6]. Thus, the use of such fibers not only increases the flexural strength of concrete, but also paves the way for easy disposal of industrial waste. In addition, the fibers are known to delay plastic shrinkage and shrinkage.

Revised Manuscript Received on January 15, 2020.
* Correspondence Author
T.sai krishna teja*, Civil engineering department, Hyderabad, India. Email: saikrishnat@aec.edu.in
Tiriveedhi sai krishna, civil department, Aditya engineering college, surampalem, india. Email: saikrishna_civil@aec.edu.in
Syed Nizamuddin khadri, civil department, Aditya college of engineering , surampalem, india. Email: khadri_civil@acoe.edu.in

II. MATERIALS AND METHODOLOGY

Natural sand adjacent to II zone that passes through 4.75 mm sieve and aggregates of nominal size 20 mm crushed stone are used as fine and coarse aggregates respectively. In this study, conventional OPC grade53 has used and the material properties are listed in the following table1.

Table1: Material Properties:

Material	Test for	Properties
Cement (OPC 53 Grade)	Specific gravity	3.4 Kg/m^3
	Fineness	2%
	Initial time	95 minutes
	Final time	185 minutes
	Consistency	31%
	Soundness	3mm
Fine Aggregate	Specific gravity	2.60 Kg/m^3
	Sieve analysis	Zone II
Coarse Aggregate	Sieve analysis	12.5-20mm
	Specific gravity	2.65 Kg/m^3
	Elongation index	12.5%
	Flakiness index	13.2%
	Water absorption	0.43%
Glass Fiber	Density	0.91
	Diameter	14µ
	Elasticity Modulus	72 GPA
	Water absorption	Nil
	Aspect ratio	857.1

Mix design for M35 Grade of concrete using glass fiber varying from 0.5 to 2.5% by weight in concrete were done by following the guidelines of IS 10262: 2009. The following Table 2 gives the adopted mix proportions per m^3 of M35 grade of concrete and Table 3 gives the quantity of fiber to be added for each batch mix [7].

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Optimal Allocation of UPFC and IPFC in Network Considering Sensitivity of Line Flows under Single Line Contingency

V. Srinivasa Rao, R. Srinivasa Rao, M. Ravindra

Abstract : This paper presents, optimal location for deployment of Unified Power Flow Controller (UPFC) and Interline Power Flow Controller (IPFC) in network considering sensitivity of line flows under single contingency. A sensitive approach is proposed which is considered based on Ranking Index (RI) and Performance Index (PI). A unitary change of power flow (PF) in each transmission line after outage of a branch element can be obtained from proposed index. The proposed Index is used to quantify loading level of network after a given outage. Contingencies are structured in descending order depending on value of proposed Index. Sensitivity factors are obtained by differentiating PF indices subject to parameters of UPFC and IPFC devices. Optimal deployment of UPFC and IPFC device is considered by the value of sensitivity factors attained by considering line outages in order of their severities which is given by proposed Index. The efficacy of proposed approach is computed and programmed on 5bus and IEEE 14bus networks under MATLAB environment.

Keywords : UPFC and IPFC, contingency analysis, sensitivity approach, ranking index, optimal placement.

I. INTRODUCTION

Due to severe contingencies or due to heavy loads, it will direct to a condition where the network is no longer present in secured operating region. Under these constraints, by applying controlling actions it is main objective of operator to bring back to normal secure state. The system leads in to unstable region due to delay of information or due to lack applicable control actions. In reality, contingencies such as line -outages lead to voltage constraint violations and results in to excess loading of the lines. The system can be recovered from this excess loading condition by reconfiguration of power system network and by controlling line parameters. However, the present transmission line infrastructure is not upgraded to the required level and hence it can lead to unstable condition. Because of meshed topology of electrical network and large quantity of equipment, the planning and operation of power system became very complex and research have been carried out on standard and abnormal conditions. One such abnormal conditions of power transmission network is the occurrence of contingencies. The contingency analysis is significant when future circumstances are uncertain. Thus, Contingency based forecast can give efficient energy management practices and helps to make more resilient power system. Also, it tends to minimize cost, improve energy efficacy, and develop the array of possible solutions compared with more firm planning. The sufficient generation has been running to meet up the load and that required transmission has been put up to transmit power to load. The equipment installed in network can fail, due to internal or external faults, such as transmission towers fall off, setting relay errors or lightning strikes. It is too expensive, to reconfigure a network design with adequate redundancy (i.e., reserve generation, additional transmission lines, etc.) so that load cannot be dropped due to internal or external faults rather, networks are reconfigured in such a way that dropping of load is adequately small. Thus, electrical networks are reconfigured to have adequate measurements and devices to endure all failure measures, but this cannot assure that the network can be 100% reliable. rectification is not possible.

In [1], the author presented Nonlinear program (NLP) and computed considering General Algebraic Modeling System(GAMS) and MATLAB parameters. It is known that FACTS devices are right solutions to enhance the stability of network and to minimize the congestion problems in overloaded lines and control voltages by governing their limits considering series and shunt impedance, voltage, current and phase angle [2]. The operation method of FACTS devices is suggested to improve steady-state security taking into consideration of line contingency problem [2]. Power systems are commonly designed and controlled based on N-1 constraint in security, which implies that system should remain secure under all first contingencies. It is suggested that, appropriate position and sizing of FACTS Controllers has enhanced system performance enormously [3]-[7]. PF in network is directed by allocating the FACTS devices in suitable lines in network without altering generation program and structure of system. There is much better significance of FACTS devices due to improvement in modernization of power electronics. The UPFC is the efficient FACTs device, PF controller as it can direct active and reactive PF in parallel or independently throughout lines and buses [8]-[12].

In [13], the author proposed two algorithms for optimal deployment of UPFC and wind farm in network to mitigate power congestion problem. UPFC can be utilized for bus and line voltage control through phase shifting, series compensation. UPFC integrates the properties of shunt and series controllers. IPFC device

Revised Manuscript Received on January 24, 2020.
* Correspondence Author
V. Srinivasa Rao, Department of EEE, Aditya Engineering College (A), ADB Road, Aditya Nagar, Surampalem, India.
R. Srinivasa Rao, Department of EEE, University College of Engineering, JNTUK, Kakinada, India.
M. Ravindra*, Department of EEE, Aditya College of Engineering, ADB Road, Aditya Nagar, Surampalem, India.

INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 9, ISSUE 02, FEBRUARY 2020 ISSN 2277-8616

Irrigation Made Easy: Block Wise Filling Of Firm Filed Using WSN System

Shaik Vahida, Rayudu Srinivas, Rama Reddy T, Sheik Shabuddin, B. Durga Anuja

Abstract: Agriculture is playing very crucial part in our everyday life and is a job of Farmers. Farmers follow some steps ladders to firm a field and one among is irrigation (is an essential step in the farming). Irrigation systems must inspire plant development while diminishing salt disproportions, leaf injuries, environmental conditions, and water loss. Loss of water will arise because of, wind drift, vaporation, run-off and water sinking deep below the root. To acquire noble results in irrigation we must use noble irrigation system. Now a days, farmers are using so many irrigation systems like traditional methods, modern methods and automated methods. Even though farmers facing problems to irrigate farm filed in sloppy areas. In this paper an automatic sensor based water pumping system is proposed to made irrigation easy to the farmers by dividing firm field into blocks and each block is monitored with soil moisture, temperate and humidity sensors to pump the water and the proposed method is more useful for irrigation in sloppy areas.

Keywords: Agriculture, Blocks, Irrigation, Pumping, Sensor, Slope Areas, Water, WSN.

1 INTRODUCTION

In Indian economy, Agriculture acting a vital part and is a work of farmers and farmers are responsible for the food we will eat daily. Farmers start work early, and in planting and harvesting season work till sunset. Even though modern agricultural equipment has made the work far less physically demanding than it was a few generations ago, most of a farmers are still preferring hands-on physical work. Farmers follow some steps in farming. In Farming life cycle essential step is irrigation. Active irrigation will affect the whole development process. The main motive to increase irrigation attempts is consistency. The manufacturer has a lot of governing over how to apply water and quantity of water to apply it. Over 70 per cent of the rural households depend on agriculture. Agriculture is an important sector of Indian economy as it contributes about 18% to the total GDP and provides employment to over 60% of the population. Indian agriculture has registered impressive growth over last few decades. The food grain production has increased from 68 million.[1] Agriculture is a job of Farmers and farmers are playing very crucial role in survival of human beings as they produce food and fiber for human beings. They make responsible usage of natural resources and advanced technologies to accomplish farming task. They have the ability to deal with different seasons, climatic variations, soil conditions, and the often harsh catastrophic events of wildfire, drought, and floods. In some areas farmers are very specialized in what and how they produce a limited number of products. Farming is an industry that depends everyday on the natural environment and the careful and responsible use of it. Without the conscious caring for the natural resources and wildlife any and all farming enterprises are doomed to failure. Farming practices often provide natural biologically active filter mechanisms for water as well as vegetative stabilization of soils. Farmers and farming societies offer an exceptional atmosphere to raise people.

They offer opportunities for young and old alike to gain experiences in basic lifelong values, an appreciation for success, as well as the heartache of life's most challenging occurrences.

Farming Life Cycle:

The following are eight essential steps followed by farmer to produce a food [2-3]

1. Selection of crop
2. Preparation of land
3. Selection of seed
4. Sowing of seed
5. Irrigation
6. Crop growth
7. Fertilizing
8. Harvesting

Irrigation is an important step in farming. Irrigation is nothing but amount of water to be given to the plants. We have so many tradition, modern and automated methods to irrigate the firm. But there is no such good method to irrigate the firm in slope areas. So, in this paper proposed a new method to irrigate a firm filed in slope areas.

2 LITERATURE SURVEY

The main motive to increase irrigation attempts is consistency. The manufacturer has a lot of governing over how to apply water and quantity of water to apply. To get good results in irrigation we should use good irrigation system. So many methods available for irrigations. In the following mentioned all traditional, modern and automated methods those using in present farming world.[2-3]

2.1 Traditional Methods of Irrigation

The following are the approaches of irrigation that were used in the past years. Even currently several minor farms in rural areas use these. Though they are inexpensive than the new

- *1 Shaik vahida, Assistant Professor in Computer Science and Engineering Department, Aditya College of Engineering and Technology, Surampalem, Kakinad, India, vahida.shaik@acet.ac.in*
- *2 Rayudu Srinivas, Professor in Computer Science and Engineering Department,Aditya Engineering College, Surampalem, Kakinad, India, rayudu_srinivas@rediffmail.com*
- *3 Rama Reddy T, Professor in Computer Science and Engineering Department, Aditya Engineering College, Surampalem, Kakinad, India, ramatreddy@gmail.com*
- *4 Shaik Shabuddin, Assistant Professor in Computer Science and Engineering Department, Aditya College of Engineering and Technology, Surampalem, Kakinad, India, shabuddin.sheik@acet.ac.in*
- *5. B Durga Anuja, Assistant Professor in Computer Application Department, Govt Degree College for women's , Sri Kalahasti, India. Email:anujabalireddi@gmail.com*

International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878, Volume-8 Issue-6, March 2020

Analysis of Blast Induced Ground Vibration under Varying Controlled Blasting Parameter

Abhishek Kumar Tripathi, Gadhi Durga Nookaraju, K. S. Siva Subramanian

Abstract: Mining activity plays a major role for economic development of any nation. The drilling and blasting are the two key operations in the mining industry. The execution of these operations generates some disturbances to the environment, like noise and vibration. Blasting is the process of reducing large rock mass into the smaller fragments for our convinces of further processing. In this study the blast induced vibrations are monitored in the form of peak particle velocity (PPV) for the different cases of varying hole spacing. In this study, the PPV was measured for the three different directions, namely, transitional, vertical and longitudinal and it was observed that the PPV for in transitional direction is decreasing with the increment in the hole spacing between two consecutive rows. Further, it was observed that peak vector sum (PVS) having an inverse relation with the hole spacing.

Keywords : Peak particle velocity, Hole spacing, Blasting, Peak vector sum.

I. INTRODUCTION

Mining is the first and foremost source of minerals and commodities on which all countries depend for improving their standard of living. Mined minerals play an essential role in maintaining the living activities of the mankind. Mining creates a direct or indirect impact in every industry of a country. Therefore, it could be considered as an economic driven industry in the country. In India, the GDP contribution of the mining industry lies in between 2.2% to 2.5% [1]. In the mining industry, the under-earth minerals can be extracted by two different mining techniques, namely surface and subsurface mining [2]. In surface mining, the drilling and blasting are the two essential activities which are used for rock fragmentation. In order to get the desired size of fragmented rock the selection of an appropriated blasting is very much necessary [3]. By using suitable blasting operation, the size of the fragmented rock can be controlled. The selection of an appropriate blasting operation not only provide the required fragmented size of the rock, but it also enhances the production of mining industry [4].

Revised Manuscript Received on March 16, 2020.
* Correspondence Author
Abhishek Kumar Tripathi*, Mining Engineering, Aditya Engineering College, Surampaelm, Kakinda, Andhra Pradesh, India. Email: abhinitrkl12@gmail.com
Gadhi Durga Nookaraju, Mining Engineering, Aditya Engineering College, Surampaelm, Kakinda, Andhra Pradesh, India. Email Email: 17a95a2604@aec.edu.in
K.S. Siva Subramanian, Mining Engineering, AMET University, Chennai, India. Email: hod_mining@ametuniv.ac.in

On the other hand, the blasting operation produces various hazards such as noise, ground vibration, fly rock and air over pressure [5]. These hazards, reduce the moral and safety of the miners and mining industry. Among all the mention hazards the generation of ground induced vibration is more serious because it can damage the surrounding structure, rock strength and may promote the chances of subsidence [6]. Due to the severity and impact of ground induced blast vibration on rock it can play a major role in the safe operation of blasting activities. Therefore, an adequate knowledge of ground induced vibration at the time of blasting is very much necessary for the safe blasting operation. The induced ground vibration during blasting can be measured in the form of Peak Particle Velocity (PPV) [7]. This PPV is nothing but the displacement value of ground particle with reference to time. It gives the maximum rate of change of ground displacement [8].

The Peak Particle Velocity mainly affected by controlled and uncontrolled blast parameters. The controlled blast parameters are burden, spacing, type of explosive and delay sequence. However, the uncontrolled parameters are the strength of the rock the density of the rock and rock type [9]. The uncontrolled parameters are mainly affected by the physical and mechanical properties of rock, whereas the controlled parameters are affected by the blasting operation [10]. In this research paper, a field investigation has been performed to study the blast induced vibration with reference to controlled blast parameter such as spacing between two consecutive holes. This study will help in designing the appropriate blasting scheme for the particular blast site.

II. BLAST INDUCED GROUND VIBRATION

At the time of blasting, when explosive in the holes are detonated a shock waves are produced in association with the gas pressure. These shock waves are also called as an elastic wave which travels in all directions and give rise to the ground vibrate. The excess amount of shock waves may cause damage to nearby structure and rock strata [11]. The ground vibration can be estimated in term of PPV. The PPV is the most elevated speed at which an individual earth particle moves or vibrates when the waves go through that earth particle [12]. A number of research work has been carried out to measure the peak particle velocity for the different blasting site. A study carried out on the twelve data set of a case study was analysed in order to get a get an accurate site-specific formulation for the peak particle velocity [13].

International Journal of Advanced Science and Technology
Vol. 29, No. 7, (2020), pp. 4662-4672

Finding the Occurrence of Chromite Reserve in Mineral Exploration Survey by Using Remote Sensing Technique

K.S. Siva Subramanian[1], Abhishek Kumar Tripathi[2*]

[1]*Department of Mining Engineering, AMET University, Chennai, India.*

[2]*Department of Mining Engineering, Aditya Engineering College, Andhra Pradesh, India.*

hod_mining@ametuniv.ac.in[1] , abhishekkumar@aec.edu.in[2]*

Abstract

The accurate estimation of the minerals is very essential task for any mining industries. In this regard the mineral exploration plays a key role in searching and estimating the valuable minerals for the mining industries. The main purpose this study is to find the probable source of the Chromite mineral resource and to conduct the complete geological survey of the selected study area. The concept of remote sensing technique is used in finding the probable occurrence of Chromite mineral reserve and the Advanced Space borne Thermal Emission and Reflectance Radiometer (ASTER) was used as an imaging instruments to create the detail map of land surface, temperature, reflectance and elevation. The preliminary exploration of the selected study area was completed successfully by using remote sensing technique. Based om the completed preliminary exploration an attempt has been made to drag the information about the occurrence of Chromite mineral reserves. The outcome of this study shown that the study area has the high potential chromite mineral zones but the second phase of mineral exploration was also recommended.

1. Introduction

Mining and mineral exploration is the backbone of any country. It helps in strengthen the economy of the country by providing significant amount of jobs and valuable mineral resources to the nation [1]. Before proceeding to the mining activity in any areas it is very much necessary to know the availability of the probable mineral in those areas. Mineral exploration is a practice which helps in finding the commercially viable concentrations of minerals or metals, for the mining industries. Since, the mineral exploration is a capital-intensive operation, therefore, a very accurate estimation of mineral deposit is very important [2]. This accurate estimation of mineral deposits helps the mining industry to grow economically by improving its volume. There are five essential steps in mineral exploration; these are selection of area, define the target, evaluation of the resource, defining the reserve and extraction. In defining and evaluation of mineral resource remote sensing can play an important role [3].

Remote sensing is one of the important tools of any mineral exploration techniques. In remote sensing technique the acquisition of information about any ground surface can be done without making any physical contact with the ground surface. This unique feature of remote sensing makes it an essential exploration technique during the exploration of mineral [4]. The efficient use of remote sensing not only save the time and money of mineral industries but it also provides an accurate useful information. Remote sensing plays a best role in discovering the high-value commodities such as diamonds and gold. The application of remote sensing in mineral exploration relies mostly on the capability of the sensor to identify lithological features and spectral signatures related to mineral deposits [5]. In this paper, the reconnaissance mineral exploration survey is carried out for the identification of probable Chromite mineral. The probable chromite occurrence can be detected based on spectral signatures of minerals and alteration zones associated with the deposits. Mineral alteration zones can be used as indicators for the identification of possible occurrence of ore deposits. The primary purpose of the paper is to carry out Geological Map Updation, Advanced Remote Sensing studies and then integrate the Geology, field data and Remote sensing data to demarcate prospect zones for Chromite deposits. The advanced Remote

ISSN: 2005-4238 IJAST

Driver Deviation and Drowsiness Detection Alert System

V.Ravi Kishore 1,K.S.B.Ambika 2 , G.Aparna 3 , Dr.SVVSR Kumar Pullela 4

1 Sr.Assistant Professor , Dept. of CSE, Aditya Engineering College(A), Surampalem, India, India
2 Sr.Assistant Professor, Dept. of CSE, Aditya College of Engineering & Technology College,Surampalem,
3. Sr.Assistant Professor , Dept. of CSE, Aditya Engineering College(A), Surampalem, India, India.
4 Professor & Dean, Dept. of CSE, Aditya College of Engineering, Surampalem, India.

ABSTRACT

Reliably various people lose their lives in view of deadly road incidents around the globe and sleepy driving is one of the principal drivers of street mishaps and passing. Exhaustion and little scope rest at the driving controls are consistently the primary drivers of certified disasters. In any case, starting signs of depletion can be recognized before a fundamental condition rises and along these lines, distinguishing proof of driver's shortcomings and its sign is advancing examination subject. By far most of the customary methods to recognize tiredness rely upon direct perspectives while some are intruding and may redirect drivers, while some require expensive sensors. Thusly, at the present time, light-weight, consistent driver's laziness acknowledgment structure is made and executed on the Android application. The structure records the chronicles and recognizes the driver's face in each packaging by using picture taking care of strategies.

Keywords: Intruding, Disasters, Sensors

I. INTRODUCTION

Utilizing python3 and AI the Drivers Deviation and Drowsiness location framework works. The framework will screen the driver's eyes and furthermore outward appearances by utilizing camera. We can recognize side effects of driver weariness sufficiently early to maintain a strategic distance from the individual from dozing. The Advancement of figuring innovation has given a superior way to building astute vehicle framework. Rest identification framework (tiredness location) for driver is one of the potential use of clever vehicle framework. Here we utilize AI to decide genuine human conduct during languor time of the driver. Along these lines, this task will be useful in identifying driver weariness.

At whatever point the driver nods off there will be an admonition yield as alert or pop-ups. So the individual in the driver seat right away wake up and can dodge serious wounds like mishaps. The Drowsiness is the essential reason for street mishaps in excess of an alcoholic driver. So it tends to be decreased to the more prominent degree by presenting the 'Rest Detection System' in the four wheelers or above.

Driver Deviation and Drowsiness Detection System is a constant rest discovery framework. The rest recognition framework consequently record, examine and process the outward appearances progressively. The Sleep Detection System likewise record articulations of eyes and example's of rest for certain timeframe. It shows the driver's real condition whether he is languid or feeling sleepy. On the off chance that a similar example rehashes for in excess of 20 edges, at that point the alarm message is given as a sound and furthermore a notice is passed. It makes the Driver to quickly wakeup and furthermore makes the person in question to get back in condition.

JOURNAL OF CRITICAL REVIEWS

ISSN- 2394-5125 VOL 7, ISSUE 19, 2020

ENACTMENT OF DEEP LEARNING METHODS FOR BIRD CATALOGING BY DEPLOYING CONVOLUTION NEURAL NETWORKS (CNN)

G. Aparna[1], V. Ravi Kishore[2], Dr. Ch.V.Raghavendran[3],SVVSR Kumar Pullela[4]

[1,2]Sr.Assistant Professor, Dept. of CSE, Aditya Engineering College(A), Surampalem, India.
[3]Professor, Dept. of IT, Aditya College of Engineering & Technology, Surampalem, India.
[4]Professor & Dean, Dept. of CSE, Aditya College of Engineering, Surampalem, India.

E-mail: aparna.ganni87@gmail.com[1], ravikishorev1985@gmail.com[2]

Received: May 2020 Revised and Accepted: August 2020

ABSTRACT: The species understanding is integral for ensuring biodiversity. Locating bird species is a challenging task often resulting in difficult levels. It is a difficult problem in identifying both humans and computers. To provide a handy tool for bird identification, we develop a deep learning platform and a tensor flow framework for pointing out. To develop such a system a bird data to set is required to classify an image. Winged animal pictures were ordered by a convolution neural system (CNN) to distinguish includes in the picture. The algorithm takes input image, assigns importance to various objects, and differentiates one from the other. In CNN, the Sigmoid function is used to obtain the probability of the image. Image converted to grayscale format and divided into certain pixels where more feature extraction takes place. After, the algorithm is trained good accuracy developed is the score sheet is obtained from it. The outcome acquired was of high effectiveness as the framework could undoubtedly distinguish flying creature animal groups from a picture transferred by the client.

KEYWORDS: Image recognition, convolution neural network, deep learning, web Application.

I. INTRODUCTION

A significant issue in biology, which is the investigation of cooperation's among creatures and conditions, is to screen feathered creature populaces. Classification of bird species-based image data. Winged creature viewing is a recreational movement that can give unwinding in everyday life and elevate versatility to confront difficulties. It can offer medical advantages and satisfaction got from getting a charge out of nature. Winged animals are especially helpful natural markers, as they react rapidly to changes in their condition. Winged creature characterization should be possible physically by watching highlights like shading, shape, and so on. Nonetheless, with a gigantic measure of information, this quickly turns into a troublesome and tedious procedure. Recognition of article parts is a difficult undertaking in view of complex varieties or comparable subordinate classifications and edges of items.

To develop a model and classification of image takes place by using a calculation called convolutional neural system (CNN) to capture the data from winged animal pictures caught beforehand and contrasted and the transfer picture. In the initial stage, the input is taken from user uploaded from the web application. Next, the feature vector of each part of the body is recognized, gathered and filter in light of figure(shape), length (dimension), and shading Finally, a CNN model was organized by means of flying creature images for highlight extraction with the thought of certain highlights and referenced attributes and along these lines the characterized, prepared information was put away to the server to recognize the objective article.

II. RELATED WORK

Various fine-grained acknowledgment datasets, for example, ImageNet, ILSVRC, and Caltech-256, have prepared a specimen by a broad assortment of information to remove worldwide highlights, for example, hues, surfaces, and shapes from multi-mark objects dependent on the profile, dimension, and shading. Next CNN model was prepared by fledgling pictures for highlight extraction with the thought of certain highlights and referenced attributes and in this way the ordered, prepared information was put away to the server to recognize the objective item [1]. Numerous methodologies have been applied for nonexclusive item acknowledgment [2]. A few strategies apply neighborhood part discovering that utilizes deformable component replicas and domain CNN for object zone [3], age of a jumping box, and the choice of explicit parts for picture attestation. Concurrent region and division are utilized to limit score affirmations enough [4] Discriminative picture pieces and randomization procedures were in vital to see modules of pictures and destroy over fitting [5]. The present work furthermore

Patch antenna design optimization using opposition based grey wolf optimizer and map-reduce framework

Ramakrishna Guttula *(Aditya Engineering College, Peddapuram, India)*
Venkateswara Rao Nandanavanam *(Bapatla Engineering College, Bapatla, India)*

Data Technologies and Applications
ISSN: 2514-9288
(International Standard Serial Number.)
Article publication date: 15 January 2020
Issue publication date: 24 March 2020

Abstract

Purpose

Microstrip patch antenna is generally used for several communication purposes particularly in the military and civilian applications. Even though several techniques have been made numerous achievements in several fields, some systems require additional improvements to meet few challenges. Yet, they require application-specific improvement for optimally designing microstrip patch antenna. The paper aims to discuss these issues.

Design/methodology/approach

This paper intends to adopt an advanced meta-heuristic search algorithm called as grey wolf optimization (GWO), which is said to be inspired by the hunting behaviour of grey wolves, for the design of patch antenna parameters. The searching for the optimal design of the antenna is paced up using the opposition-based solution search. Moreover, the proposed model derives a nonlinear objective model to aid the design of the solution space of antenna parameters. After executing the simulation model, this paper compares the performance of the proposed GWO-based microstrip patch antenna with several conventional models.

Findings

The gain of the proposed model is 27.05 per cent better than WOAD, 2.07 per cent better than AAD, 15.80 per cent better than GAD, 17.49 per cent better than PSAD and 3.77 per cent better than GWAD model. Thus, it has proved that the proposed antenna model has attained high gain, leads to cause superior performance.

Originality/value

This paper presents a technique for designing the microstrip patch antenna, using the proposed GWO algorithm. This is the first work utilizes GWO-based optimization for microstrip patch antenna.

Keywords

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Energy Sources, Part A: Recovery, Utilization, and Environmental Effects

Ready to submit?

Start a new manuscript submission or continue a submission in progress

Go to submission site

Submission information

- Instructions for authors
- Editorial policies

Editing services

- Editing services site

About this journal

- Journal metrics
- Aims & scope
- Journal information
- Editorial board
- News & call for papers

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Journal information

Print ISSN: 1556-7036 Online ISSN: 1556-7230

24 issues per year

Open access

You have the option to publish open access in this journal via our Open Select publishing program. Publishing open access means that your article will be free to access online immediately on publication, increasing the visibility, readership and impact of your research. Articles published Open Select with Taylor & Francis typically receive 95% more citations* and over 7 times as many downloads** compared to those that are not published Open Select.

Your research funder or your institution may require you to publish your article open access. Visit our Author Services website to find out more about open access policies and how you can comply with these.

You will be asked to pay an article publishing charge (APC) to make your article open access and this cost can often be covered by your institution or funder. Use our APC finder to view the APC for this journal.

Please visit our Author Services website if you would like more information about our Open Select Program.

*Citations received up to 9th June 2021 for articles published in 2016-2020 in journals listed in Web of Science®. Data obtained on 9th June 2021, from Digital Science's Dimensions platform, available at https://app.dimensions.ai
**Usage in 2018-2020 for articles published in 2016-2020.

Page and submission charges

There are no page or submission charges for this journal.

Colour figure charges

Energy Sources, Part A: Recovery, Utilization, and Environmental Effects ›
Latest Articles

151 Views | 6 CrossRef citations to date | 0 Altmetric

Research Article

Euglena Sanguinea algal biodiesel and its various diesel blends as diesel engine fuels: a study on the performance and emission characteristics

Nabam Hina Papu, Pradip Lingfa

Santosh Kumar Dash

b Department of Mechanical Engineering, Aditya Engineering College, Surampalem, India

Correspondence
santoshdash@aec.edu.in
https://orcid.org/0000-0002-0703-812X
View further author information

Received 14 Aug 2019, Accepted 15 Jul 2020, Pul

Download citation https://doi.org/1

Full Article | Figures & data | References | Citations | Metrics

Reprints & Permissions | Get access

ABSTRACT

In this study, the performance and emission characteristics of a single cylinder four stroke diesel engine have been studied by using *Euglena Sanguinea* algal biodiesel and its various diesel blends (ES10, ES20, ES30, ES40, ES40, ES50, and ES100). BSFC and EGT increase with the increase in the concentration of biodiesel in diesel. The average BTE dropped by 1.4%, 1.97%, and 4.3% for ES20, ES30, and ES40 blends

respectively compared to diesel. For emission parameters, average reduction in CO, HC, and smoke was 21.25%, 29.32%, and 7.5% for ES30, and 16.9%, 23.69%, and

Energy Sources, Part A: Recovery, Utilization, and Environmental Effects >
Latest Articles

Research Article

Euglena Sanguinea algal biodiesel and its various diesel blends as diesel engine fuels: a study on the performance and emission characteristics

Nabam Hina Papu, Pradip Lingfa & Santosh Kumar Dash

Received 14 Aug 2019, Accepted 15 Jul 2020, Published online: 27 Jul 2020

Download citation https://doi.org/10.1080/15567036.2020.1798566 Check for updates

ABSTRACT

In this study, the performance and emission characteristics of a single cylinder four stroke diesel engine have been studied by using *Euglena Sanguinea* algal biodiesel and its various diesel blends (ES10, ES20, ES30, ES40, ES40, ES50, and ES100). BSFC and EGT increase with the increase in the concentration of biodiesel in diesel. The average BTE dropped by 1.4%, 1.97%, and 4.3% for ES20, ES30, and ES40 blends respectively compared to diesel. For emission parameters, average reduction in CO, HC, and smoke

The International Journal of Electrical Engineering & Education

Project-based learning: Design of data acquisition module for greenhouse system

Debashish Mohapatra, **Subhransu Padhee**, haskar Patnaik

Department of Electrical and Electronics Engineering, Aditya Engineering College (Autonomous), Surampalem, Andhra Pradesh, India
View ORCID profile
See all articles by this author
Search Google Scholar for this author

First Published June 2,
https://doi.org/10.1177/

Abstract

This study provides a project-based learning case study of the design of data acquisition module for the greenhouse system. The project-based learning environment is provided to the final year undergraduate engineering students where the students try to develop a prototype of a greenhouse system equipped with various sensors and actuators. The learning target is to develop a fully functional laboratory prototype of the greenhouse with sensors and actuators and perform data acquisition and data logging operations in the greenhouse. In addition to the development of hardware prototype, the students are encouraged to learn the theory and modeling aspects behind the problem. The result of the project-based learning approach has been encouraging since the students were able to design the working prototype of the greenhouse with basic control functionalities.

Keywords

Data acquisition, greenhouse system, project-based learning

Thermal Science and Engineering Progress

Supports *open access*

Latest issue	**Volume 34** *In progress* • 1 September 2022

About the journal

Thermal Science and Engineering Progress (TSEP) publishes original, high-quality research articles that span activities ranging from fundamental scientific research and discussion of the more controversial thermodynamic theories, to developments in thermal engineering that are in many instances ...

View full aims & scope

3.7 weeks Time to First Decision	5.9 weeks Review Time
1.5 weeks Publication Time	19% Acceptance Rate

View all insights

Thermal Science and Engineering Progress

Supports *open access*

16 November 2021

Thermal Energy Usage in the Agricultural Sector

Edited by Arun Mujumdar, Joseph Kudadam Korese, Abozar Nasirahmadi, Barbara Sturm

16 September 2021

View all special issues and article collections

View all issues

2451-9049
ISSN

ScienceDirect

Thermal Science and Engineering Progress
Volume 19, 1 October 2020, 100581

Performance evaluation of square pyramid solar still with various vertical wick materials – An experimental approach

A. Saravanan [a] ✉, M. Murugan [b]

[a] Department of Mechanical Engineering, Aditya Engineering College, Surampalem, East Godavari (D.T), Andhra Pradesh 533 437, India

[b] Department of Mechanical Engineering, Aditya College of Engineering and Technology, Surampalem, East Godavari (D.T), Andhra Pradesh 533 437, India

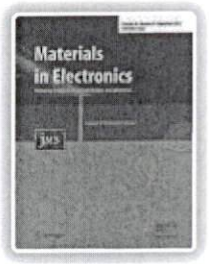
Received 11 March 2020, Revised 3 May 2020, Accepted 22 May 2020, Available online 28 May 2020, Version of Record 8 June 2020.

https://doi.org/10.1016/j.tsep.2020.100581

Highlights

- The theoretical and experimental analysis of square pyramid solar still was performed.
- Performance of still was evaluated for various depths of basin water.
- The productivity of condensate water was maximum for 2 cm basin water depth.
- Various wick materials were kept vertically in the solar still for enhancing the yield.
- Woolen fabric wick material has given the most optimum productivity among all the wick materials.

Abstract



Journal of Materials Science: Materials in Electronics

Editorial board Aims & scope Journal updates

The Journal of Materials Science: Materials in Electronics is an established refereed companion to the Journal of Materials Science. It publishes papers on materials and their applications in modern electronics, covering the ground between fundamental science, such as semiconductor physics, and work concerned specifically with applications. It explores the growth and preparation of new materials, as well as their processing, fabrication, bonding and encapsulation, together with the reliability, failure analysis, quality assurance and characterization related to the whole range of applications in electronics. The Journal presents papers in newly developing fields such as low dimensional structures and devices, optoelectronics including III-V compounds, glasses and linear/non-linear crystal materials and lasers, high Tc superconductors, conducting polymers, thick film materials and new contact technologies, as well as the established electronics device and circuit materials. — show all

Editor-in-Chief

Safa O. Kasap

Publishing model

Hybrid (Transformative Journal). How to publish with us, including Open Access

2.779 (2021)

Impact factor

2.401 (2021)

Five year impact factor

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

We're recognising extraordinary editors for their commitment and passion to their journals.

View all updates >

For authors

Submission guidelines

Ethics & disclosures

Open Access fees and funding

Contact the journal

Calls for papers

Submit manuscript

Explore

Online first articles

Volumes and issues

Collections

Sign up for alerts

About this journal

Electronic ISSN 1573-482X

Print ISSN 0957-4522

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Abstracted and indexed in

Published: 24 August 2020

Naturally derived $FeTiO_3$ nanoparticles: analysis of optical properties

Dhineshbabu Nattanmai Raman ✉, Vettumperumal Rajapandi, Arunmetha Sundaramoorthy, Srither Satturappa Ravisekaran & Narendrakumar Annadurai

Journal of Materials Science: Materials in Electronics
31, 16951–16958 (2020)

Abstract

Eco-friendly metal titanates, which are abundant in nature, are widely used in our day-to-life in a variety of areas. This work is focused on the optical properties of $FeTiO_3$ (FT) nanoparticles prepared by acid extraction method from ilmenite sand. The prepared $FeTiO_3$ nanoparticles were analyzed by ultraviolet (UV) spectroscopy. Various linear optical parameters such as refractive index, extinction coefficient, absorption coefficient, real and imaginary parts of dielectric constant, loss tangent, optical conductivity, electron energy loss, and dielectric relaxation time were calculated in 1.5–6 eV energy range and discussed as a function of photon energy. The calculated values of the real part of complex permittivity and volume energy loss were higher than those of the imaginary part of complex permittivity and surface energy loss,

Technol. **117**, 1–60 (2012)

46. G.L. Tan, L.K. DeNoyer, R.H. French, M.J. Guittet, M. Gautier-Soyer, J. Elect. Spec. Relat. Phenom **142**, 97–103 (2004)

Author information

Authors and Affiliations

Department of Electronics and Communication Engineering, Aditya Engineering College, Surampalem, Andhra Pradesh, 533437, India

Dhineshbabu Nattanmai Raman

Department of Physics, Fodhdhoo School, Fodhdhoo, Noonu Attol, 04120, Republic of Maldives

Vettumperumal Rajapandi

Department of Electronics and Communication Engineering, K L E F (Deemed To Be University), Andhra Pradesh, Guntur District, 522 502, India

Arunmetha Sundaramoorthy

Department of Physics, Southern University of Science and Technology, Shenzhen, 518071, China

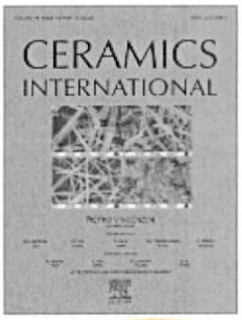
Srither Satturappa Ravisekaran

Department of Electronics and Communication Engineering, V V College of Engineering, Tisaiyanvilai, Tirunelveli, Tamil Nadu, 627657, India

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

ELSEVIER Search

Home > Journals > Ceramics International



ISSN: 0272-8842

Ceramics International

Publishing options: OA Open Access ↗ S Subscription ↗

↗ Guide for authors Track your paper ↗ Order journal

General Editor > Editorial board

P. Vincenzini

Ceramics International covers the science of advanced ceramic materials. The journal encourages contributions that demonstrate how an understanding of the basic

Read full aims & scope

Submit your paper

The Impact Factor of this journal is 5.532, ranking it 3 out of 29 in *Materials Science, Ceramics*

With this journal indexed in 12 international databases, your published article can be read and cited by researchers worldwide

View articles

ScienceDirect

Ceramics International
Volume 46, Issue 9, 15 June 2020, Pages 13695-13703

Synthesis of dysprosium/Mn–Cu ferrite binary nanocomposite: Analysis of structural, morphological, dielectric, and optomagnetic properties

R. Rajesh Kanna [a], K. Sakthipandi [b], A. Senthil Kumar [c], N.R. Dhineshbabu [d], S.M. Seeni Mohamed Aliar Maraikkayar [e], A. Sabah Afroze [a], Rajshree B. Jotania [f], M. Sivabharathy [b]

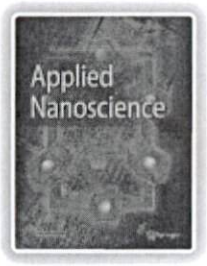
[a] Department of Electronics and Communication Engineering, Sethu Institute of Technology, Kariapatti, 626 115, Tamil Nadu, India
[b] Department of Physics, Sethu Institute of Technology, Kariapatti, 626 115, Tamil Nadu, India
[c] Department of Mechanical Engineering, Sethu Institute of Technology, Kariapatti, 626 115, Tamil Nadu, India
[d] Department of Electronics and Communication Engineering, Aditya Engineering College, Surampalem, 533437, Andhra Pradesh, India
[e] Department of Computer Science and Engineering, Sethu Institute of Technology, Kariapatti, 626 115, Tamil Nadu, India
[f] Department of Physics, Electronics and Space science, University School of Sciences, Gujarat University, Ahmedabad, 380 009, Gujarat, India

Received 2 November 2019, Revised 11 February 2020, Accepted 17 February 2020, Available online 18 February 2020, Version of Record 30 April 2020.

https://doi.org/10.1016/j.ceramint.2020.02.157

Abstract

Manganese–copper ferrite (MCFO) and dysprosium (Dy)-doped manganese–copper ferrite nanocomposites ($Mn_{0.5}Cu_{0.5}Dy_xFe_{2-x}O_4$) ($x$ = 0, 0.05, 0.10, and 0.15) were synthesized by sonochemical method. Crystal structure and the structural parameters of the MCFO were analyzed based on the doping concentration of Dy ion. It was observed that the average crystalline size of the synthesized nanocomposite decreases when the concentration of Dy increases. The existing spherical surface morphology of the MCFO and Dy-doped MCFO nanocomposites were obtained through scanning electron microscopy. In the UV spectrum, the pristine MCFO sample showed an absorbance peak at 743 nm whereas the absorbance values of Dy-doped ferrite nanocomposite considerably shifted (blue) toward a lower wavelength (231–222 nm). The dielectric parameters of all ferrite nanocomposites were studied in the frequency range of 100 Hz to 5 MHz. The dielectric spectrum revealed that dielectric constant and loss tangent decreased with increased doping



Applied Nanoscience

مدينة الملك عبدالعزيز
للعلوم والتقنية KACST

Editorial board Aims & scope Journal updates

Applied Nanoscience is a hybrid journal that publishes original articles about state of the art nanoscience and the application of emerging nanotechnologies to areas fundamental to building technologically advanced and sustainable civilization, including areas as diverse as water science, advanced materials, energy, electronics, environmental science and medicine. The journal accepts original and review articles as well as book reviews for publication. All the manuscripts are single-blind peer-reviewed for scientific quality and acceptance.

Applied Nanoscience has been recently accepted for **Science Citation Index Expanded**. Beginning from 2014 onwards, the journal content will be indexed and abstracted in **Science Citation Index Expanded** (also known as **SciSearch®**), **Journal Citation Reports/Science Edition**, and **Current Contents®/Physical Chemical and Earth Sciences**. The first **Impact Factor** will appear in mid-2017.

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Online first articles

Volumes and issues

Collections

Sign up for alerts

About this journal

Electronic ISSN
2190-5517

Abstracted and indexed in
Astrophysics Data System (ADS)
Baidu
CLOCKSS
CNKI
CNPIEC
Chemical Abstracts Service (CAS)
Current Contents/Physical, Chemical and Earth Sciences
Dimensions
EBSCO Applied Science & Technology Source
EBSCO Discovery Service
EBSCO STM Source
EI Compendex
Google Scholar
INIS Atomindex
Japanese Science and Technology Agency (JST)
Journal Citation Reports/Science Edition
Naver
OCLC WorldCat Discovery Service
Portico
ProQuest-ExLibris Primo
ProQuest-ExLibris Summon

Original Article | Published: 26 November 2020

A study of linear optical properties of ternary blends PVA/CMC/aloe vera biofilm for UV shielding

N. R. Dhineshbabu, R. Vettumperumal & R. Kokila

Applied Nanoscience **11**, 669–678 (2021)

Abstract

In this study, the solvent casting method was applied to prepare ternary blend PVA/CMC/aloe vera (60%/20%/20%) biofilms in the form of the freestanding polymeric film. The X-ray diffraction pattern revealed 93% of crystallinity of the polymeric film. The presence of functional bonding on the biofilms was analyzed by Fourier-transform infrared spectroscopy. The hardness and Young'smodulus of the prepared biofilms were examined by the nanoindentation technique. Ultraviolet (UV) absorption spectroscopy study showed that the PVA/CMC/aloe vera (PCA) blended biofilm absorption was around 280 nm, indicating a well-defined $n - \pi^*$ electronic transition. From the UV spectroscopy study, the absorption coefficient; Urbach energy; direct, indirect, and forbidden bandgap; optical and dielectric constant, and loss tangent of the PCA biofilm were calculated. Viscoelastic behavior of the

Department of Electronics and Communication Engineering, Aditya Engineering College, East Godavari Dist, Surampalem, 533437, Andhra Pradesh, India

N. R. Dhineshbabu

Department of Physics, Fodhdhoo School, NoonuAttol, 04120, Republic of Maldives

R. Vettumperumal

Department of Nanoscience and Technology, K. S. Rangasamy College of Technology, Triuchengode, 627513, Tamil Nadu, India

R. Kokila

Corresponding author

Correspondence to N. R. Dhineshbabu.

Ethics declarations

Conflict of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Additional information

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Rights and permissions

Reprints and Permissions

Results in Physics

Open access

Submit your article | Guide fo

Menu | Search in this journal

Latest issue	**Volume 40** *In progress* • September 2022

About the journal

Results in Physics is an open-access journal offering authors the opportunity to publish in all **fundamental, applied and interdisciplinary** areas of **Physics**. Papers of **theoretical**, **computational**, and **experimental nature** are all welcome. ***Results in Physics*** accepts **high-quality** papers that are **scienti...**

View full aims & scope

$1550 ⓘ
Article Publishing Charge for open access

3.6 weeks
Time to First Decision

5 weeks
Review Time

1.3 weeks
Publication Time

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

FEEDBACK

Results in Physics

Open access

Submit your article | Guide fc

Menu Search in this journal

View all special issues and article collections

View all issues

Related journals

Reviews in Physics

Journal of Computational Physics: X

SoftwareX

Physics Open

Scientific African

2211-3797
ISSN

FEEDBACK

ScienceDirect

Results in Physics
Volume 19, December 2020, 103487

Cadmium substitution effect on structural, electrical and magnetic properties of Ni-Zn nano ferrites

P. Anantha Rao [a], Vemuri Raghavendra [b], B. Suryanarayana [a], Taddesse Paulos [c], N. Murali [a] ✉, P.V.S.K. Phanidhar Varma [a], R. Giri Prasad [d], Y. Ramakrishna [a], K. Chandramouli [a]

[a] Department of Engineering Physics, Andhra University College of Engineering (A), Andhra University, Visakhapatnam, India
[b] Department of Physics, Aditya College of Engineering and Technology, Surampalem, India
[c] Department of Physics, College of Natural Science, Arba Minch University, Ethiopia
[d] Department of Petroleum Technology, Aditya Engineering College, Surampalem, India

Received 15 August 2020, Revised 25 September 2020, Accepted 6 October 2020, Available online 12 October 2020, Version of Record 15 November 2020.

https://doi.org/10.1016/j.rinp.2020.103487

Highlights

- Increased crystallinity nature: Indicating its increasing stability.
- Decreased magnetic saturation and increased coercive force: Useful in memory devices.
- Decreased frequency of the vibration from FT-IR: Decreasing the tensile stress means applicable for sensible sensors.

International Journal of Advanced Science and Technology
Vol. 29, No. 7, (2020), pp. 12973 - 12978

Study on the Load Analysis of Strata Using Lod Cell in Underground Coal Mines

Abhishek Kumar Tripathi and Nalluri Satish Kumar
Department of Mining Engineering, Aditya Engineering College, Andhra Pradesh

Abstract

The failing of the strata in underground coal mines is one of the popular hazards during the coal winning operation. The main objective of this paper is to study the strata behaviour of underground coal in association the goaf edge distance (GED). An extensive case study was performed to study the variation of load on the strata under varying GED condition. The outcome of the study revealed that the load on the strata increase with the reduction in the value of goaf edge distance. This increase load value on the strata increases the pressure on the strata which brings the strata under the danger zone. Therefore, a systematic support system is recommended in the paper while performing the coal winning operation near the edge of the goaf.

Keywords: Strata, coal winning, load, goaf edge distance.

1. INTRODUCTION

Coal is a fossil fuel which helps in the development of development of the country. The development of any country is primarily depended on the availability of electrical power supply. Coal is one of the most important fossil fuels which aids in the generation of electrical power. In India, 60% of the total installed electrical power is based on coal. Therefore, the efficient extraction of coal from the mines is very necessary [1]. In general, there are two method for the extraction of coal from the mines such as open cast and underground method. In India the production of coal from open cast mines is more famous than the underground mines [2]. Even though, the open cast mines are cost effective than the underground mines still the many Indian coal mines are practicing the underground mines method due to the greater depth of the coal seam. Coal is a fossil fuel which helps in the development of development of the country. The development of any country is primarily depended on the availability of electrical power supply. Coal is one of the most important fossil fuels which aids in the generation of electrical power. In India, 60% of the total installed electrical power is based on coal. Therefore, the efficient extraction of coal from the mines is very necessary [3]. In general, there are two method for the extraction of coal from the mines such as open cast and underground method. In India the production of coal from open cast mines is more famous than the underground mines. Even though, the open cast mines are cost effective than the underground mines still the many Indian coal mines are practicing the underground mines method due to the greater depth of the coal seam [4].

There are two underground coal mining methods namely, Bord and Pillar (B&P) and Long wall [5]. In this paper the study of strata behaviour in B&P working was conducted. In bord and pillar (B&P) method of working the pressure developed on the strata is essentially based on three main factors, such as depth of thee working from the surface, area of development and area covered by the B&P method. In bord and pillar working, the maximum pressure experiences by the pillar is due to the overlying weight of the strata which consists mainly shale and sand stone [6]. Optimization of safety and recovering during underground coal mining involves a number of measurements through instrumentation and monitoring. Generally, the strata behaviour in underground coal mines are analysis theoretically and modelling do not yield reliable results. This happens because the differences in the characteristics of the surrounding rock mass between real and theoretical assumptions [7]. Thus, the physical measurements of strata behaviour in B&P working is more important than the theoretical modelling. This is the reason why most of the strata control norms are based on empirical formulations. These empirical formulations require quite dependent on the field measurements parameters. However, the field measurements of the parameters during underground mining are extremely challenging. Hazardous nature of instrumented site during

ISSN: 2005-4238 IJAST

JOURNAL OF CRITICAL REVIEWS

ISSN- 2394-5125 VOL 7, ISSUE 19, 2020

AGE INVARIANT FACE RECOGNITION TECHNIQUES: A CRITICAL REVIEW STUDY

M.RajaBabu[1], Dr.K. Srinivas[2], Dr.H. Ravi Sankar[3]

[1] Research Scholar, JNTUH & Associate Professor, Aditya Engineering College, AP, India.
[2] Professor, VR Siddhartha Engineering College, Vijayawada, AP, India
[3] Sr. Scientist, CTRI, Rajamahendravaram, AP, India

E-mail: raajababu.makineedi@gmail.com[1], vrdrks@gmail.com[2], hravi.sankar@icar.gov.in[3]

Received: 14 April 2020 Revised and Accepted: 8 August 2020

ABSTRACT: Face recognition (FR) has drawn intensified interest and attention in the domain of computer vision.FR has been researched for the last three decades but, still it is a challenging research area because the face recognition accuracy is limited by the variability of personal appearances, variant poses, facial expressions, illumination, and aging. Age Invariant face recognition (AIFR) is a significant problem that has not been extensively studied until recently. In this paper, we survey some well-known techniques for cross-age face recognition. We present a comparative analysis of various approaches in terms of robustness to aging. Also, the important facial aging databases together with their number of images per each subject are briefly described. Finally, we present the discussions on the experimental results from these methods, challenges, conclusions, and guidelines for future work.

KEYWORDS: age progression, Age invariant face recognition, Deep learning, Generative method, Discriminative method, Convolutional Neural Network

I. INTRODUCTION

Despite major progress in AIFR techniques in the past decades owing to advances in face modeling and analysis, AIFR remains a challenging and unsolved problem. The difficulty of this problem emerges from the way that the appearance of human faces can undergo large variations due to the aging process as shown in Fig.1. Published approaches to AIFR are constrained and still, they are far from expectations. A couple of survey papers on facial identification that addresses the problems caused by variations in pose, illumination, and expression [1][2][3], have reported improved recognition rates on difficult datasets, even better than human performance. The aging process impact on the performance of FR is more when compared with other appearance variations. One of the solutions to resolve this problem is periodically updating the training data for every six months or one year through a data acquisition process. However, updating facial images frequently is a tedious and time-consuming task. Earlier literature available on cross-age facial recognition[4][5][6] broadly includes holistic based and feature-based approaches. This survey encompasses some of the approaches and solutions of AIFR in recent years that significantly improve the recognition accuracy. The remainder of this paper is structured as follows. In section 2, a survey of the methods and results on currently used facial aging datasets are presented. Section 3 discusses the existing challenges and promising future directions in this research. The last section concludes the study.

Figure 1. Face variations of an individual by age

International Journal of Advanced Science and Technology
Vol. 29, No. 9s, (2020), pp. 4701-4710

Study of the Dependence of Blast Induced Ground Vibration on Charge per Hole and Rock Strength

Abhishek Kumar Tripathi, G. Durga Nookaraju and Satyajeet Parida
Department of Mining Engineering, Aditya Engineering College, Andhra Pradesh

Abstract

The objective of this study is to examine the influence of control and uncontrol blast parameters on the blast-induced ground vibration. The blast-induced ground vibration can be measured in the form of peak particle velocity and peak vector sum. In this paper, the effect of control blast parameter, such as charge per hole was considered, on the blast induced ground vibration was studied. This study showed the proportional relation with blast-induced ground vibration. It was observed that the PPV value was higher in the longitudinal direction as compared to the other two directions at the time of the variation in charge per hole. Further, the effect of rock strength on the blast-induced ground vibration was also examined which showed that the higher strength rock produces more ground vibration at the time of blasting.

Keywords: *Blast induced ground vibration, peak particle velocity, blasting, rock strength, charge per hole*

1. INTRODUCTION

Mining industry is the backbone for the economic development of any nation. The wealth of the nation can be expressed with its mineral resources which helps in the effective industrial development of the country [1]. As these minerals are situated under the earth (within the earth crust) of sufficient depth, therefore, it is very difficult to access such minerals commodity. The surface and subsurface mining activities are the two possible ways to extract these under earth minerals. The surface mining activities have drawn a huge attention in last one decade because of its ease in operation and high mineral recovery efficiency. Drilling and blasting are considered to be the two essential mining operations by any surface mining industry. Drilling is the process of making holes in to hard surfaces and involves disintegration of rock mass. At the time of drilling, there are different types of forces, which act between the drill unit and rock interference and helps in obtaining the effective drilling results. The drilling results depend on the type of drill bits used and the mode of energy used for the drill operation [2]. Drilling of holes for the insertion of explosive charge is the very first step in any blasting operation. The blasting operation is the process of converting a huge rock mass in to small piece of fragments with the help of suitable explosive charge. During the process of blasting the energy produced by the explosives helps to fragment bigger size rock masses into smaller sizes [3]. The adoption of systematic and suitable blasting techniques helps in getting the required size of fragmented result [4].

The blasting operation, not only plays an important role in mining but it also performs some essential tasks in tunneling, excavation and civil constructional activities [5]. It is the most economical way to break large size rock masses. In blasting, whenever any explosive charge (which is inserted in blast hole) is initiated, comparatively a smaller amount gets used for the real task i.e. fragmentation of rock mass and a larger amount gets wasted in the form of gas, heat, pressure and shock waves. The mechanism of blasting explains that, whenever the explosive charge explodes in the blast hole (on the earth's surface), the generated pressure, due to the initiation of explosive, produces blast waves due to which, the particles surrounding the blast hole move and produce ground vibration [6]. This generated vibration is mainly caused by the explosion induced shock waves in the ground surrounding the blast hole [7]. Here a notable fact is that, 70 to 80 % of the energy gets wasted in the form of blast induced ground vibration (BIGV) and fly rock, dust and noise generation, which can be labelled as the side effects of blasting, whereas the rest, very small amount of energy is utilized for rock breakage [8]. The generation of these side effects have adverse impacts on the environment. Among all the generated side effects ground vibration has the most dangerous and instant impact on the surrounding civil structures. The generated BIGV can cause serious damage to the surrounding structures. As per the study conducted by various researchers [9],[10], the generated BIGV can be quantified by PPV (peak particle velocity) and frequency. The PPV is considered as the basic parameter to assess the level of BIGV. The PPV in simple terms, can be presented as the physical movement of ground particles during blasting operations, with respect to time [11]. The value of PPV mainly depends on the amount of charge per delay and the distance of the point in concern from the blast source [12]. As the rock is a 3D object, the PPV generated in the rock also consists of three directions, namely transitional, vertical and

ISSN: 2005-4238 IJAST

PalArch's Journal of Archaeology of Egypt / Egyptology

STUDY ON CROSS LINGUISTIC FEATURE WITHIN DRAVIDIAN AND ENGLISH SCRIPT TO ESTABLISH THE SOURCE OF QUESTIONED DOCUMENT

Om Dubey [1], *Abhishek Kumar Tripathi* [2], *Neha Nair* [3], *Jeremiah Justus* [4], *Donkina Nagesh* [5]

[1,3,5] Godavari Institute of Engineering and Technology (A), Andhra Pradesh, India. [2] Aditya Engineering College, Surampalem, Kakinada, Andhra Pradesh, India. [4] Kristu Jayanti College (A), Bangaluru, Karnataka, India

Email: [1] omforensic@gmail.com, [2] abhishekkumar@aec.edu.in

Om Dubey, Abhishek Kumar Tripathi, Neha Nair, Jeremiah Justus, Donkina Nagesh: Study on Cross Linguistic Feature within Dravidian and English Script to Establish the Source of Questioned Document -- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(9). ISSN 1567-214x

Keywords: Dravidian language, Tamil Script, Questioned documents, Regional language effect, Telugu Script, Malayalam Script.

ABSTRACT

This paper presents the influence of Dravidian language and its acquired characteristics on the secondary language. In this paper the three Dravidian languages, namely, Tamil, Malayalam and Telugu were considered for studying the regional language features on English language (secondary language). The present study has been conducted by taking handwriting exemplar of 565 subjects and focus has been made on the Handwriting features of secondary language due to primary language. The main objective of the work is to observe what effect, if any, between two well- known scripts of the Handwriting of the same subject is carrying. The observations of this paper have shown that writer carrying the individual characters from the primary language while writing the secondary language. Handwriting and its uniqueness are a result of our subconscious mind and the same is observed in this study where the writer has picked up his or her frequently used individual characters from his or her primary language into the English script. This study will be useful in proving the authorship of questioned document where only one of the handwriting samples is available (i.e., either Regional or English) and the other handwriting's authorship needs to be identified.

JOURNAL OF CRITICAL REVIEWS

ISSN- 2394-5125 VOL 7, ISSUE 17, 2020

Analysis of Fingerprint Pattern Distribution Framework of Telugu Population in India

Abhishek Kumar Tripathi[1], Om Dubey[2], D. Nagesh[3], Neha Nair[4]

[1]Assistant Professor, Aditya Engineering College, Surampalem, Kakinada, Andhra Pradesh, India

[2]Seniour Lecturer, Godavari Institute of Engineering and Technology (A), Rajahmundry, Andhra Pradesh,India

[3]Lecturer, Godavari Institute of Engineering and Technology (A), Rajahmundry, Andhra Pradesh, India,

[4]Lecturer, Godavari Institute of Engineering and Technology (A), Rajahmundry, Andhra Pradesh, India,

[1]abhishekkumar@aec.edu.in,[2] omforensic@gmail.com, [3]donkinanagesh@gmail.com, [4]nehanair1001@gmail.com

Received: 24 April 2020 Revised and Accepted: 04 July 2020

ABSTRACT: Fingerprint and its comparison have been consequential in a criminal investigation as well as to settle civil disputes. The present study was conducted on the Telugu population having the sample loads of 1660 digit which consist of 73 Males and 93 Females. In the present research work, it was observed that the Ulnar loop patterns showed the highest number of repetition than the other patterns. It was observed that the Ulnar loop fingerprint pattern was reported to be the maximum repetition frequency of 835 times and on the other hand, the Tented arch pattern was recorded as the minimum repetition frequency of 36 times. Further, the female subjects in the Ulnar loop pattern were reported the higher percentage of repetition of 52.04% than the male subject of 48.08%. The outcomes of the present research work will help the Investigating agency by confining the area of investigation in the event that specific unique pattern is recuperated from the area of wrongdoing.

Key Words: Telugu population, Dermatoglyphics, Pattern distribution, fingerprint pattern, Individuality, Forensic Science, Criminal investigation, Crime Scene.

I. INTRODUCTION

Fingerprint pattern can play a pivotal role in finding the main culprits during the course of a criminal investigation. Fingerprint could be one of the crucial evidences at the crime scene apart from various types of evidence, namely, biological, chemical, trace and impression evidences. An impression / Pattern is a type of evidence of the crime scene where tire impression, footwear impression, foot mark, tool mark and fingerprints are being analyzed. The fingerprint impression can be found on the various surfaces such as pliable, fragile and rigid objects. There may be two types of impression visible and latent. The visible impression is one which doesn't need development, whereas the latent impression requires a proper enhancement or treatment by the use of chemical reagent or physical development powder [1].

The study of science and technology in the fingerprint is known as Dactyloscopy or Dactylography [2]. The study of epidermal ridges and the patterns formed by them is known as Dermatoglyphics [3]. The term Dermatoglyphics was coined by the anatomist Harold Cummins of Tulane University, which means skin carving (Krishan, 2009). Population distribution based on the fingerprint pattern can be an important evidence in ruling out or including the individual in population specific manner. A study conducted by [4] confirms the variation in a fingerprint pattern of individuals from different geographical origin. In the similar study, the Indian population has been subject for the study of Fingerprint patterns and different segment of the population has been chosen to be the subject of study. One such study has been performed in the Marathi population and it concluded that Ulnar Loop was the most common pattern among them, which was recorded to be 51.3% [5].

Fingerprint distribution has shown the varying nature with reference to the geographical origin. A study has been carried out by [6] showed the global variation of fingerprint pattern. In the same study it was observed that the two persons can be same by Anthropology wise, but their fingerprint impression has been an eminent identity

International Journal of Advanced Science and Technology
Vol. 29, No. 7, (2020), pp. 4883-4893

From Epidemic to Pandemic- Covid-19- Psychological, Social and Environmental Impact- A Qualitative Study

[1]SUNITHA V, [2]G ANBURAJ, [3]M SANDRA CARMEL SOPHIA, [4]GOPICHAND G
[1]Assistant professor (Senior), SSL, Vellore Institute of Technology, Vellore, Tamilnadu, India
[2] Assistant Professor, SSL, Vellore Institute of Technology, Vellore, Tamilnadu, India
[3]Professor of English, Aditya Engineering College, Surampalem, Andhra Pradesh, India
[4]Assistant Professor, SCOPE, Vellore Institute of Technology, Vellore, Tamil Nadu, India

Abstract

Corona virus has shaken the entire globe and India is no exception to this. Minimal human interaction, social distancing, quarantine, isolation, lockdown are the terms that were being repeatedly pronounced and heard. The lockdown started in the month of March, 2020 and is being extended till May 2020. This paper discloses the psychological, social and enviroinmental impact of the pandemic. The findings divulge the responses collected from the survey. It has helped to comprehend the various aspects connected to Covid-19 and the ways to cope with the crisis.

Key words- *Covid-19, Corona virus, Psychological, Social, Environmental, Impact*

I. INTRODUCTION

From epidemic Corona virus hazard has become pandemic. It has scrapped its way into almost every continent, including our state of mind; Nation-wide lockdown has been prescribed in India. People are entangled in quarantine; it may be self-isolation at home or instructed quarantine to avert contamination. The objective of this study is to explore people's psychological impact on COVID-19 situation. The social and environmental aspects of the lockdown were also the point of focus and discussion.

II. LITERATURE SURVEY

Ellepola, A. Rajapakse's (2020) research paper on the foreseeable psychological impact of Covid-19 in Srilanka is based on the published literature on infectious diseases and disasters and clinical experience of the authors. It states that susceptible health care workers, quarantined persons, affected people require special attention. Improving psychological outcome is necessary by various clinics, training programs and workshops. A study on previous cases like these, identification of anguish at an earlier stage will prove to be effective in treating the present crisis in hand. Elders are vulnerable to anxiety disorders. There could be depression of anxiety disorders, symptoms of frustration, exhaustion and work related problems among the general public. Infodemics is another issue that is spoken in the article where people collect too much information from various sources and couldn't come to a conclusion. Psychological sequel post Covid 19 is something that needs to be taken immediate care of. Thus there would be major health implications causing prolonged psychological problems. Duration of the impact is prolonged as the spread is continuing globally. Stigmatization, unemployment, financial hardships could spoil the psychosocial interactions of people and further complicate the picture.

Sijia Li , Yilin Wang. Jia Xue Nan Zhao ,and Tingshao Zhu (2020) in their paper on "The Impact of COVID-19 Epidemic Declaration on Psychological Consequences: A Study on Active Weibo Users"

ISSN: 2005-4238 IJAST

A Novel Approach to provide more Security for Multi-Click Recognition based Textual Graphical Scheme (SMCR-TG)

Nalla Akhila[1], Divya Lalita Sri Jalligampala[2], Udayabhanu N P G Raju[3], A Sri Sudha[4]
[1]*Sr. Assistant Professor, Dept. of CSE, Aditya Engineering College, Surampalem, India,*
[2]*Assistant Professor, Dept. of CSE, Aditya College of Engineering and Technology, Surampalem, India,*
[3]*Assistant Professor, Dept. of CSE, Aditya College of Engineering, Surampalem, India,*
[4]*Assistant Marketing Manager, Reportstack, Pune*

Abstract

Nowadays password plays a vital role for User Authentication. To provide more security to information, password should be lengthy and typical. In order to avoid attacks whenever password becomes lengthy it becomes difficult for the users to remember that harder passwords. To overcome this technique called SR-MCR-TG is used which was an alternative to textual passwords. As it is easy to remember pictures than the textual passwords. In this paper, we have proposed an enhanced approach for graphical password based system named SMCR-TG, which offers much compensation to the existing system.

Keywords: *Graphical Password, Security, authentication, SMCR-TG*

1. Introduction

Information security plays an important role for protecting system data or information. So for Identification of a person a process called Authentication is required and most of the commonly used passwords are alphanumeric. In order to resist from brute force attack most of the users prefer strong passwords which is combination of numerical, letters and symbols [1]. As Textual passwords are tough to memorize, different graphical password authentication schemes were developed.

2. Categorization of Authentication Methods

Authentication techniques are of three types. Token based, Biometric based, and Knowledge based authentication

2.1. Token Based Authentication

It permits users to enter their userid and secret password to attain a token which gives access for user to obtain a particular resource without using their credentials. Token based authentication requires users to attain a token before they're granted network entry.

2.2 Biometric Based Authentication

For identification of a person Biometric Based Authentication uses human body characteristics like iris, retina, finger prints, signature and voice [7]. In token based authentication the user may forget the token otherwise key may be cracked so most of the authentication systems are biometric based as it is more secured because the body organs of a person cannot be accessed without their authorization but it requires hardware.

Journal of Critical Reviews

ISSN- 2394-5125 Vol 7, Issue 12, 2020

ARTIFICIAL INTELLIGENCE AIDED DIAGNOSIS OF CHRONIC KIDNEY DISEASE

Sripada Rama Sree*, Sripada N S V S C Ramesh

Professor, Department Of Cse, Aditya Engineering College Surampalem, Ap, India
E-Mail: Ramasree_S@Aec.Edu.In
Assoc. Professor, Department Of Cse, Aditya College Of Engineering & Technology, Surampalem, Ap, India
E-Mail: Ramesh.Snsvsc@Acet.Ac.In

Received: 18.03.2020 *Revised: 20.04.2020* *Accepted: 21.05.2020*

Abstract

Disease Diagnosis is the most tough processes and requires sophisticated techniques to overcome the inefficiencies. The Artificial Intelligence Aided Machine Learning Techniques came into existence to deal more effectively with the arising problems related to medical diagnosis. As medical diagnosis is totally based on human abilities, uncertain factors and ambiguous symptoms, there is always a flaw in diagnosing the diseases. Machine Learning Techniques prove to be a more effective solution to this. This paper aims to present a brief outline of the classification of patients suffering from or not suffering from Chronic Kidney Disease, based on a standard data set available publicly. The classification is done using models developed using nine different machine learning algorithms like the Linear Regression, Generalized Regression, Discriminant Analysis, Classification Tree, Regression Tree, Support Vector Machine, K-Nearest Neighbours, Ensemble methods using Subspace and Rusboost. The models are trained and tested using different samples in 20 iterations. These models are evaluated using eleven various evaluation metrics for machine learning algorithms. After experimentation, it was observed that Models developed using Support Vector Machines have shown a high classification accuracy when compared to other models in more iterations and are best suited for classification problems.

Keywords— Disease Diagnosis, Machine Learning techniques, UCI CKD Data set, Linear Regression, Generalized Regression, Classification Trees, Regression Trees, Ensemble methods, SVM, K-Nearest Neighbours, Confusion Matrix.

DOI: http://dx.doi.org/10.31838/jcr.07.12.159

INTRODUCTION

Chronic Kidney Disease indicates an abnormal functioning of the kidney. As the disease propagates gradually, it shows fewer symptoms or indications at the early stage, whereas it is the stage in which the chances of cure are highest. Owing to the ill-defined or vague symptoms, diagnosis by humans can be highly erroneous. The other factors, which may produce an error in a human diagnosis can be negligence, fatigue, lack of experience, confusion, etc. To overcome this, a well-trained Artificial Intelligence (AI) Models can be utilized.

The Models can be created using the available data and different AI techniques or the Machine Learning (ML) techniques. The training to the models can be given by sets of repeatedly verified data. In manual diagnosis, the concerned personnel has to mine the information required from a huge collection of medical data, which can be controlled by few clicks in computer-based diagnosis using Artificial Intelligence as mentioned in the paper published by Gharehchopogh et. al (Farhad Soleimanian Gharehchopogh, 2013). Therefore, using such Artificial Intelligence aided computer-based diagnosis techniques, the future reference to data already analyzed is a way much easier than the manual diagnosis. These models can now be used for diagnosing if a patient suffers from a disease or not very easily.

LITERATURE REVIEW

Few works related to the area of Thyroid Disease diagnosis have already been done by Razia (Razia et al., 2020), Mukherjee (Mukherjee, 2016), Appiah (Appiah et al., 2015). The literature presented here gives diverse approaches to categorize and assess the test cases of different diseases by the use of a variety of learning algorithms. The key utilization of the classification techniques or algorithms or practices is to envisage the target class precisely for every sample in the data set. The latest study is concentrated on the utilization of these classification techniques in the field of bioinformatics or general medicine science. The center of attention of this review is to study the different approaches used for the prediction and classification of diseases suffered by humans.

J Lena and R Swain (Jena & Swain, 2018) classified a Chronic Kidney Disease (CKD) data set using the Naïve Bayes and Multilayer Perceptron classification techniques to predict the output class for each sample of the dataset and evaluated it using some criteria. The dataset used for the purpose and the percentage of samples used for training and testing was not mentioned.

Y. Wu, H. Wang and F. Wu (Wu et al., 2017) used random forest classifiers to classify tuberculosis and sarcoidosis based on the available medical reports of patients. As various medical data formats, maintained at various isolated systems were used, feature selection was difficult to classify the disease.

In the paper by Y. Udovychenko, A. Popov and I. Chaikovsky (Udovychenko et al., 2015), applied the k-Nearest Neighbour algorithm for classification of Myocardium Current Density Distribution Maps (CDDM). CDDMs covering most of the possible cases of patients suffering from ischemic heart disease were compared with healthy heart persons. The selection of the value of 'k' in the k-NN classifier was done mainly to optimize the classification accuracy. The main criteria for selecting a value of k in k-NN is to optimize the functions like precision, specificity, accuracy and sensitivity of classification.

In the work done by D. Chauhan et. al (Chauhan & Jaiswal, 2016), a model for classification and detection of Lung Cancer diseases based on a machine learning approach was projected. Though, the approach obtained good results, but a considerable expertise in computation was necessary for execution in addition to the standard datasets considered for comparing the working of the proposed model. A prediction model based on PCA and LDA with user-friendly features was developed. The proposed method was developed and validated in MATLAB with ICA and SURF method.

Hannan (Hannan et al., 2010) have worked on diagnosis of heart diseases using Neural Networks like GRNN & RBNN, Kumari (V. Anuja Kumari & R.Chitra, 2013) worked on classification of diabetes diseases using Support Vector Machines, Subas (Abdulhamit Subas, Emina Alickovic, 2017) have diagnosed Chronic Kidney Disease using Random Forest, Siwy (Siwy et al., 2017) have diagnosed Chronic Kidney Disease using urinary proteome analysis, Charleonnan (Charleonnan et al., 2016) have worked on analysis of kidney disease using few machine learning techniques and Sinha (Parul Sinha & Poonam Sinha, 2015) have used KNN and SVM for chronic kidney disease prediction.

https://doi.org/10.37896/aj9.9/040

ISSN NO: 1301-2746

Performance Evaluation and Simulation of a Nine-Level Voltage Source Inverter

G.V.S. Uma Shankar, M. Suresh, G. Arun Prasad, P.S.D. Bhima Raju, T. Abhilash, M. Srinivas Reddy

[1,2,3,4]Department of Electrical and Electronics Engineering
Aditya Engineering College, Surampalem, Andhra Pradesh
[5]Accendere Knowledge Management Services, [6]Department of Electrical and Electronics Engineering, MLR Institute of Technology, Hyderabad

Abstract. A nine-level inverter topology with a minimum component count and higher reliability is proposed in this paper. The presented topology employs a T-type converter (T^2C), a two-level cell, an H-bridge circuit, and two dc power supplies. This topology has the advantage of operating two-level cell switches and half of the H-bridge switches at low-frequency. This reduces the switching losses in the proposed topology compared to other configurations. The operating modes of the proposed inverter are analyzed in detail during zero, positive, and negative levels. The proposed topology is gated using sine-triangle Pulse Width Modulation in MATLAB/Simulink environment and the output results are illustrated.

Keyword — ***multilevel inverter, T-type converter, nine-level, pulse width modulation (PWM), total harmonic distortion***

1 Introduction

Multilevel inverter (MLIs) topologies are finding their applications in several areas such as AC drives, FACTS, renewable energy sources [1-2]. Although Neutral point clamped (NPC), Flying capacitor clamped (FCC) and Cascaded H-bridge (CHB) converters [3-6] are the standard MLI topologies, the component count in these topologies increases drastically w.r.t the number of levels in the output voltage. In order to alleviate the limitations in standard topologies, new MLIs with a reduced number of components are developed and are suggested in many applications [7-9]. From the past few decades, many such Voltage Source Inverters (VSIs) have been reported using several combinations of power semiconductor devices, isolated dc supplies and other devices [10-12]. In particular, the lower switch count symmetric H-bridge (HB) inverter requires eight switching devices and four dc power supplies [13], or two dc power supplies and 12 switching devices [14] to produce a 9-level (9-L) PWM voltage. Lower switch count asymmetric HB circuit employs the different magnitudes of independent dc supplies [15], [16]. Further, the reduced device count modified converter uses ten switching devices and four same magnitude dc power supplies to output the 9-level voltage [17].

The proposed converter offers a reduced count of switching devices, reduced number of dc power supplies, and lower off-state voltage stress across the switching devices. This script is detailed as follows: IInd Section explores the working of the proposed inverter, and its operating modes, in Section III, the modulation scheme with improved spectral performance is shown, in IVth Section, the simulation results at different values of modulation indices are discussed and Vth Section, discusses the conclusion.

2 System Configuration

Fig. 1 depicts the proposed single-phase 9-L circuit operating with the inverter principle, using ten switching devices and two independent dc sources. All the switching devices used in the proposed configuration are of bi-directional conducting devices with uni-directional voltage sustaining ability. The switches S_4 and S_5 are joined in anti-series to achieve the bi-directional voltage blocking capability. The switches S_1 and S_2 form a two-level cell and controlled at the fundamental switching frequency (f_m). The switches S_7 and S_8 also operate at the switching frequency equal to f_m that results in reduced switching losses of the configuration. The dc supplies can be obtained either from rectifier circuits, battery banks, or pv arrays.

https://doi.org/10.37896/aj9.9/038
ISSN NO: 1301-274

Comparative Analysis of Thyristor based and PWM based Controlled Rectifier

Matsa Srija, P Sai Madhuri Meghana, K Durgendra Kumar*

Department of Electrical and Electronics Engineering

Aditya Engineering College, Surampalem, Andhra Pradesh

Abstract: This paper provides different control aspects and fault detection aspects of a PWM rectifiers and thyristor based phase controlled converters. A comparative analysis of firing angle control of 3-phase phase controlled converter and sinusoidal PWM based control of 3-phase controlled converter has been discussed and simulated.

Keywords: Phase controlled converter, firing angle, PWM

Introduction

Control and fault detection of phase controlled converter are one of the most important parameter in power electronics. Phase controlled rectifier can be controlled either by using delay angle or by using PWM technique. In delay angle based control, there is only one pulse per half-cycle in input current of converter. So 3rd order harmonic is encountered which is difficult to eliminate. PWM based control technique, the output voltage is controlled by varying pulse width.

New synchronization method for phase controlled converter for weak AC source has been discussed in [1,7]. A generalized firing angle control and microprocessor based firing angle control of phase controlled converter has been discussed in [2,3,4,6,8,9,13]. Phase locked loop control of thyristor converter has been discussed in [5]. Harmonic issues generated due to unbalanced source has been discussed in [10]. Fault diagnosis and control of thyristor phase controlled converter has been discussed in [12,14].

This paper provides a comparative analysis of firing angle control scheme and sinusoidal PWM based control of PWM rectifier. Fault diagnosis aspect and different control aspects have also been discussed.

https://doi.org/10.37896/aj9.9/041
ISSN NO: 1301-274

Analysis of V-Clamp based seven-level Inverter

[1]D. Sneha Deepika, [2]K. Netaji Mahendra, [3]V. Srinivasaraju, [4]K. Rambabu, [5]T. Abhilash, [6]T. Bhargav Ramu

[1,2,3,4]Department of Electrical and Electronics Engineering
Aditya Engineering College, Surampalem, Andhra Pradesh
[5]Accendere Knowledge Management Services, [6]Department of Electrical and Electronics Engineering, MLR Institute of Technology, Hyderabad

Abstract— ***A seven-level inverter topology with the minimum component count is presented in this paper. This topology is based on novel V-clamp structure. All branches of the V-clamp structure withstand a single-level voltage of the DC-bus capacitors during its turn-off process. Therefore, the switching devices are modulated as simple as one switch and the dynamic voltage unbalancing issue is avoided. In this paper, the operating principle and the modulation method of the V-clamped converter are analyzed in detail. In addition, the simulation results for various modulation indices are presented in detail. The operating modes of the proposed inverter are analyzed in detail during zero, positive, and negative levels. The proposed topology is gated using sinusoidal Pulse Width Modulation in MATLAB/Simulink environment.***

Keywords— *multilevel inverter, seven-level, pulse width modulation*

1. Introduction

Conventional multilevel topologies, such as the neutral point clamped converter (NPCC), flying capacitor converter (FCC), cascaded H-bridge converter (CHBC), as well as the modular multilevel converter (MMC), have been well studied and commercialized in the past decades [1-3]. However, when the voltage levels increase, the number of clamping diodes in the NPCC and flying capacitors (FCs) in the FCC rises tremendously [4,5]. Furthermore, the NPCC suffers from indirect clamping of the inner devices when the voltage level is higher than three [4]. The CHBC and MMC are easier to expand the voltage levels due to their modular design [5]. But the CHBC needs a phase-shifting transformer to provide isolated DC sources, which results in substantial investment and volume [6-9]. The MMC shows good prospects for HVDC transmission. But the complex controls (e.g., capacitor voltage balancing control and circulating current suppression control) and relative high primary investment make the MMC less attractive in medium-voltage applications [10-12].

The proposed converter offers the benefits of a reduced number of switching devices, a reduced number of dc power supplies, and lower off-state voltage stress across the switching devices. This script is detailed as follows: II[nd] Section explores the operation of the proposed inverter, and its operating modes, in Section III, the modulation scheme with improved spectral performance is shown, in IV[th] Section, the simulation results at different values of modulation indices are discussed and V[th] Section, discusses the conclusion.

2. System Configuration

Fig. 1 shows the proposed three-phase seven-level inverter using switching devices, clamping diodes, and dc-link capacitors with a single independent dc source. All the switching devices used in the proposed configuration are of bi-directional conducting devices with uni-directional voltage sustaining ability. The dc supplies can be obtained either from rectifier circuits, battery banks, or pv arrays.

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

https://doi.org/10.37896/aj9.9/042
ISSN NO: 1301-274

A Seven-Level Inverter Topology for Medium-Voltage Applications

[1]K. Maheswari, [2]K. Lakshmi Gayatri, [3]B. Sridhar, [4]P.S.D. Bhimaraju, [5]T. Abhilash, [6]Ch. Srivardhan Kumar

[1,2,3,4]Department of Electrical and Electronics Engineering
Aditya Engineering College, Surampalem, Andhra Pradesh
[5]Accendere Knowledge Management Services, [6]Department of Electrical and Electronics Engineering, MLR Institute of Technology, Hyderabad

Abstract— **In this work, a novel 7-level voltage source inverter (VSI) topology is proposed for high power medium-voltage (MV) applications. The proposed circuit has a fewer number of components compared to the existing advanced 7-level configurations. All the switching devices possess the same voltage rating. Sinusoidal modulation (SPWM) technique is developed for the proposed topology to control the flying capacitor voltages. The behavior of the proposed converter is tested in both steady-state and dynamic conditions in MATLAB/Simulink.**

Keywords— *multilevel inverter, seven-level, pulse width modulation*

https://doi.org/10.37896/aj9.9/043
ISSN NO: 1301-274(

Design and Implementation of VSI for Trinary Sequence

[1]K. Lakshmi Mounika, [2]M. Venkatesh, [3]A. Venkata Prasad, [4]B. Veeranarayana, [5]T. Abhilash, [6]A. Shubhangi Rao

[1,2,3,4]Department of Electrical and Electronics Engineering
Aditya Engineering College, Surampalem, Andhra Pradesh
[5]Accendere Knowledge Management Services, [6]Department of Electrical and Electronics Engineering, MLR Institute of Technology, Hyderabad

Abstract— **This paper introduces a multilevel inverter (MLI) circuit that uses trinary sequence of the dc sources. It gives maximum number of output voltage levels with minimum number of dc source and switch count. This is due to the fact that the trinary sequence generates all of the additive and subtractive combinations of input dc levels in the output voltage waveform. This concept is implemented on a nine-level asymmetric MLI using only four switching devices. Multicarrier pulse width modulation technique is implemented to generate the switching pulses. The proposed concept is gated in performed in a MATLAB/Simulink environment and the simulation are presented.**

Keywords— *multilevel inverter, trinary sequence, pulse width modulation*

1. Introduction

Multilevel inverters (MLI) are attracting greater recognition as a predominant solution for power electronics in the integration of renewable energy sources (RESs) integration, flexible ac transmission system (FACTS), electric vehicles, motor drives, and other high power inverter applications [1].

MLIs can be classified as asymmetric and symmetric based on the magnitude of the DC sources. MLIs with hybrid arrangement are another alternative to increase the voltage levels. For example, hybrid MLI topology composed of FC and CHB has considered. However, the utilization of FC has obvious disadvantages as it requires large electrolytic capacitors and complicated control method to get rid of the capacitor voltage balancing issue [2]. Based on this aspect, many configurations have been evolved in both symmetric [3-5] and asymmetric types [6-8]. Symmetric topology has dc sources of equal magnitude, while the asymmetric utilizes dc sources of different magnitudes. In [9], a switched ladder MLI has been developed for producing the maximum level with the help of lesser component count. In [10], a square T-type has been developed by combing the two back to back T-type converters and few extra switches.

Based on this observation, a nine-level MLI circuit that can accommodate the trinary dc source sequence is proposed in this work with the ability to produce all additive and subtractive combinations of input dc sources in the output voltage waveform. Moreover, it eliminates redundancy switching states, reducing the control complexity for switching pulses generation. Also, the proposed topology operates at unipolar PWM, which compared to bipolar switching, reduces the carrier count by half.

2. System Configuration

Fig. 1 shows the nine-level inverter using switching devices, and dc-sources. All the switching devices used in the proposed configuration are of bi-directional conducting devices with uni-directional voltage sustaining ability. The dc supplies can be obtained either from rectifier circuits, battery banks, or pv arrays. To produce the 9-level output across the load terminals the dc-source voltage magnitudes are chosen as $V_{dc1} = 3V_{dc}$ and $V_{dc2} = V_{dc}$.

Wideband Characteristics of Antenna: A Succinct Study

A. Sudheer [1], K. Nishanth Rao[2], M. Swamy [3], Rajasekhar Manda[4,*]
[1,3,4]Department of E.C.E., Aditya Engineering College, Surampalem, Andhra Pradesh, India
[2]Dept of ECE, MLR Institute of Technology, Hyderabad, Andhra Pradesh, India

ABSTRACT

Antenna with wideband and Ultra High frequency characteristics utilized for Television Broadcasting, data transfer to the devices located remotely. The earlier Yagi-Uda Antenna supports bandwidth of 0.62GHz to 2.13 GHz with a gain of 10dBi. Due to the physical dimension and carrying comfort there is necessity to design the antenna with fewer dimensions like patch antennas without the penalty of several applications. Antennas with High gain and wideband characteristics are achieved by cutting notch opposite to the feeding plane. The front and back side ground plane slopes are created to improve the bandwidth. The proper impedance matching along with the prior methods helped to obtained better response. The final Antenna has achieved a band width of 0.4 GHz to 3.06 MHz which covers entire UHF band with peak gain of 2.73 dBi to 6.09dBi. At operating frequency, the antenna achieved with a peak gain of 4.62dBi.

Keywords: Television Broadcasting, ultra high frequency, wideband antenna, Dipole antenna.

INTRODUCTION

Nowadays, Portable device applications are more dependent on wireless communication technologies. The Television broadcasting, Cellular, Wireless LAN (2.40 GHz to 2.484 GHz), Wi-MAX (2.50 GHz-2.690 GHz), Global system for Mobile communications (GMS 900) etc... Falls on UHF band applications. A multiband antenna fulfils the all unique features for different applications in a single antenna. But, for practical applications antenna with high gain, less weight and dimensions are preferred. The planar micro strip patch antenna would support wide band frequencies [1-5]. Due to large ground plane physical features some antennas may not operate over whole UHF band [6]. The planar monopole antenna supports wide range of frequencies along with high data transmission.

As more band width and high data rate required for solitary antenna in different applications up to 1.6Gbps. This wideband planar monopole antenna covers the all-out UHF band. So, it can receive all frequencies [7-12]. In this paper, a statistical review and analysis of micro strip antenna for Television and UHF band applications have been studied. A wideband monopole antenna continued by the executive bolstered coplanar waveguide is discussed. The coplanar waveguide is a type of electric planer transmission line. On a smaller scale, we use the coplanar waveguide. It is used to convey the microwave frequency. It has an advantage that it has stability on the transmission line waveguide. Using a Triangular shaped patch, adding Notch at the top we get high gain and large bandwidth. This antenna is achieved the enhanced characteristics.

Performance Study of Efficient Hybrid Architecture of 1-bit Full Adder Circuit

[1]Polina Sandeep, [2]Siddu Pragthi, [3]Paturi Satya Mounika, [4,*]Katta Pavani and [5]E. Gurumohan Rao

[1,2,3,4]Department of ECE, Aditya Engineering College, Surampalem, A. P., India
[5]Dept of IT, MLR Institute of Technology, Hyderabad, India

ABSTRACT

In this paper, each complementary metal chemical compound semiconductor logic and transmission gate logic hybrid one-bit full adder style. It's designed for one bit and so extended to thirty-two bit. It is implemented by the 180nm and 90nm technology. during this given performance of the parameters like power, delay, style, and layout space are compared with the enduring styles like complimentary pass junction transistor logic, transmission gate adder, transmission perform adder, hybrid pass-logic with output drive then on for 1.8v offer at 180nm technology. The planned full adder design achieves the 50%and 80% increase in speed and PDP in contrast to the standard C-CMOS FA. When it operated at the low voltages, FA exhibits glorious increases the quality of signal and no. of I/p's of gate. In novel, low power FA operates with low voltage the MOS capacitors (MOSCAP) structure is employed and therefore the circuit is optimized for energy potency at zero. 18 CMOS process technology and this adder St Martin's Day power saving over typical twenty-eight junction transistor CMOS adder and it consumes half-hour less power than transmission operate adder (TFA) and one.11 times quicker. Any the 5 hybrid full adders are styles are planned for low power parallel multipliers. By mistreatment, ALL-NAND array number attain 16.2% also reductions in 7.8% of power consumption and junction transistor count 7% increase in time delay contrast to plain array selector. The ALL NAND tree number to reveal the low power utilization and electronic No. of transistor by12.5% and 8% and the time delay is 4% compared to the standard tree number.

Keywords: Power, Delay, CMOS (Complementary Metal Oxide Semiconductor), TGA, TFA, CPL, HPSC.

Analysis of security avoidance by using the Internet of Things Devices

Nagulapalli Manikanta[1], T. Anu Radha[2], U.M.V.V. Hemanth[3], M. Visweswara Rao[4], Durgesh Nandan[5,*]
[1,3,4]*Department of E.C.E, Aditya Engineering College, Surampalem, Andhra Pradesh, India*
[2]*Dept of ECE, MLR Institute of Technology, Hyderabad, Andhra Pradesh, India*
[5]*Accendere Knowledge Services Management Pvt. Ltd, CL Educate Ltd., India*

ABSTRACT

Internet of things (IoT) is the most trending and enormous technology. The IoT networks consist of sensors and wireless networks. By using these networks, we can lead our life comfortably. Nowadays the generation depends on the internet and smartphones, so people are interested to do smart work instead of doing hard work. By using these things, we can secure our private data. The installation cost is also not much high, we can save time, power and efficiency, etc. Security of it comprises many areas example: privacy, attacks, and countermeasures, trust, access control. Standard internet presents a few security challenges because most of the web innovations and conventions were not support to help IoT. This paper gives brief information about the present world facing a lot of challenges and issues on the internet of things. It also gives information about secured IoT, IoT architecture, IoT applications, and it explains several types of threats how they affected to the internet of things.

Keywords: IoT, Security, Web services, Cloud services, challenges, and issues.

INTRODUCTION

Internet of things was an emerging technology. It is more secure and we can implement it in offices and cities etc to protect our data from others. Considering these systems are wireless and self-designing and needn't bother with any prior foundation and have a huge unusual hub development. Security assumes a significant job in most fundamental issues to be raised into the record. By utilizing it we can protect our information secure from programmers [11].

This innovation has discovered application in numerous fields like human services, homes, learning and preparing asset the board, and so forth. An arrangement of things is every one of them embedded with remote sensors and related through around the world. In all the sensors connected to the internet and operated by smart devices like smartphones, remotes. As per logical expectations, the complete number of wireless sensors deployed is expected more than 70trillion at the end of the year 2022 [13].

The other technologies like smart mobility or smart technology can be linked to a particular topological area, such as parks, streets. Various services that are provided by IoT are implemented by internet service technology, and there are so many internet services that are there and they offer much identical functionality. The future lies in the overall detecting gadgets in an imparting inciting system that makes the internet of things.

https://doi.org/10.37896/aj9.11/010 ISSN NO: 1301-2746

A Systematic Review on Glaucoma Detection by using Various Modern Techniques

G. Bharathi[1], P. Yakaiah[2], G.B. Lakshmi Priyanka[3], T. Srinivas Rao[4], Durgesh Nandan[5,*]
[1,3,4]*Department of E.C.E, Aditya Engineering College, Surampalem, Andhra Pradesh, India*
[2]*Dept of ECE, MLR Institute of Technology, Hyderabad, Andhra Pradesh, India*
[5]*Accendere Knowledge Services Management Pvt. Ltd, CL Educate Ltd., India*

Abstract

In this paper, we are mainly discussing Glaucoma and various types of glaucoma and also the symptoms and the detection methods of glaucoma. Mainly, glaucoma is a severe disease caused to the eye. Glaucoma is a visual neuropathy which is detrimental to the cause of the optic nerve. We cannot find the symptoms of glaucoma at the early stage.so, everyone can prefer eye checkups for once in a year. Without proper treatment, glaucoma gradually leads to "vision loss". There are many types of glaucoma. There is a way to detect glaucoma by analyzing the fundus image or by calculating it. It's the "Cup to Disc Ratio (CDR)". Glaucoma is also known as "Sneak thief of sight".

Firstly, glaucoma is a chronic disease when glaucoma is affected it does not show any painful symptoms and it mainly attacks the loss of ganglion cells and their axons in the retina. And finally, it changes the characteristics of optic disc signs. By using super pixel segmentation concepts, we can detect the abnormalities present in the optic disc

Keywords: Glaucoma, Neuropathy, Open-angle glaucoma, Fundus, Cup to Disc Ratio (CDR), Ganglion cells.

1. Introduction

In, this paper we are mainly concentrating on human eye disease which is called "Glaucoma". And also, how to detect glaucoma in the early stage. If a person is affected by glaucoma and the person is neglected, gradually it leads to "loss of vision". Mainly glaucoma is affected If the optic nerve head or optic disc is damaged. Which is in the form of round or an oval form. Neutral rim or neuroretinal rim is the tissue between the cup and the disc margin [1]. For finding the health of the optic nerve clinicians commonly use a "Cup to Disc Ratio (CDR)" as an identification. Especially, when there is a large disc to cup ratio is obtained that declares there is damage to the optic nerve [2]. When the age increases gradually the cup size also increases and this is the first sign of glaucoma. And also, when the "Intraocular Pressure (IOP)" is also one of the factors which increases glaucoma that is the fluid pressure inside the eye increases [2] [7] [6]. Glaucoma consists of mainly two types. 1) open-angle glaucoma 2) closure angle glaucoma. Open-angle glaucoma is obtained when there is damage to the "optic nerve" and the person who affected can face a lot of risks. Subsequently, if the person is having high IOP, BP which is turn glaucoma increases gradually finally, it leads to a "vision loss"[6][4]. The "neuroretinal rim" is composed of "ganglion cell axons". Ganglion cells are equal to the disc area subtracted in cup area. When glaucoma is affected it will mainly lead to damage or there may be a structural change to the Optic Nerve Head (ONH) which results in slowly change the function failure of the visual field. So, glaucoma is also called as a "Chronic Eye Disease".

There is another way to detect glaucoma that is by using the retinal fundus image of the eye. Mainly, optic nerve head or the optic disc are the main parts in the diagnosis of the chronic disease.so, by using the segmentation of optic disc is difficult toward computer-aided diagnosis. By using appropriate screening techniques, we can avoid glaucoma [6][7]. Day by

https://doi.org/10.37896/aj9.12/006

ISSN NO: 1301-2746

Performance analysis of Fused Add-Multiply (FAM) architectures

Y. Leela Madhuri[1], Md. Nafeesa Begum[2], B. Srinivas[3,*]
[1,2,3]Department of E.C.E, Aditya Engineering College, Surampalem, AP, India

ABSTRACT:

In DSP Complex operations in arithmetic play an important role. To increase performance, we mainly focus in boosting the designing of the Fused Add-Multiply operator. A modal and effective method is introduced and three different ways are explored for implementing that technique in the FAM design. On comparison in the designs of FAM using pre-recoding schemes the FAM designs with this technique results in the lowering of delay in the crucial path and multiplicity in the hardware and the power intake levels of units in FAM.

KEYWORDS: Arithmetic operations, FAM, MB form, Partial products, Multiplier, Adder

I. INTRODUCTION:

Many complex components can be integrated with a lot of freedom by the designer using advanced VLSI technology. In recent times different types of high-speed multipliers have been realized and proposed [1]. The fundamental operation in scientific and engineering applications is Addition-Multiplication. Unified floating-point (MAF) multiply-add-fused unit has been included as the main characteristic in commercial processors. By the implementation of MAF have two advantages: 1) the function A+ (B*C) is processed with only single round off which decreases total error and delay of MAF 2) Reduction in hardware equipment. Binary multipliers are used in microprocessor designing and embedded systems. Generally, multipliers have 3 stages which consist of multiple forming circuits, partial product reduction tree, and redundant binary converter [4]. The modern implementations of FAM do not include addition and rounding.

The arrival of Very Large-Scale Integration (VLSI) made it possible for the designers for designing a greater number of transistors with the help of simple chips. Multipliers with higher clock frequencies play a major role in the processing of signals. A computational algorithm is a basis for the plan of the floating-point multiplier. This is executed using a floating-point multiplier and subtraction using 32 bits [6]. The drawbacks are delay and latency. In these present days, the research effort is focussed on enhancing the pattern of encoding or limiting the next step in addition to enhance the speed of the multiplier. This whole process in

https://doi.org/10.37896/aj9.12/007
ISSN NO: 1301-2746

Utility Impact Study of Bionic Communication System

G. Nitya Sumanvika[1], P. Krishna Veni[2,*]

[1,2]Department of Electronics & Communication, Aditya Engineering College, Surrampalem, Andhra Pradesh, India.

Abstract

In this paper we discuss the various techniques of engineering used in medical field for human progress. We discuss here the latest developments made by scientists to in the medical fields like making an arm using lightweight but strong and durable material such as carbon fibre, with foam padded covering or plastic materials which appears like flesh-coloured. And also making of a wireless electronic nervous system by providing necessary conditions are discussed in the paper. Neuro bridge method to move paralysed limbs, Larynx speech method to make a dumb person to talk by using bionic method.

1. Introduction

A bionic system can be made to make some damaged body parts to work by providing necessary conditions. For example, we can make a dumb person to talk, a spinal cord damaged person to move paralysed limbs and make an artificial wireless nervous system. We can also use this in insects to make them act as per our requirement to make the act as a spy. This can be achieved by using BIO-MEDICAL ENGINEERING. Bio medical engineering is nothing but to electrical techniques in medical field to make for effective working of some parts. By using different technique, we can do this. For example, Galvanic Coupling Communication Receiver for bionic arms [1], a 1000+ Channel Bionic Communication System for wireless nervous system [2], Bionic Electronics for Larynx Speech [3], Neuro bridge Technology to move paralysed limbs [4].

2. System Description

1000+ CHANNEL BIONIC SYSTEM –

This channel is used to create a wireless network system. This is also called as functional electronic simulation by battery powered bion system. This experiment is developed in Alfred Mann Foundation. The method used here is a multichannel Communication System. This is especially intended for bi-directional communication between an external MCU

A Modulation Method for DC-Link VoltageBalancing Control of a T-Type Converter

[1]J. Sai Balaji, [2]V. Sreemani Sai Kashyap, [3]P. Vishnu vardhan, [4]I. V. Veeranjaneyulu, [5]T. Abhilash, [6]N.Karthik

[1.2.3.4]Department of Electrical and Electronics Engineering
Aditya Engineering College, Surampalem, Andhra Pradesh
[5]Accendere Knowledge Management Services, [6]Department of Electrical and Electronics Engineering, MLR Institute of Technology, Hyderabad

Email: [1]balajijatla123@gmail.com, [2]bannukashyap320@gmail.com, [3]vishnuvardhanp47@gmail.com, [4]veeranjaneyulu.ikkurthi@aec.edu.in, [5]abhilash.tripuathi@accendere.co.in, [6]karthiknachagari2748@gmail.com

Abstract— In this paper, an innovative method for DC-link voltage balancing in a T-type converter is proposed. The proposed method uses a single voltage sensor to sense one of the capacitor voltages. This method possesses the advantages of lesser number of auxiliary components to balance the DC-link capacitor voltages. A T-type H-bridge circuit is adopted to implement the proposed balancing technique. The gate pulses to generate the five-level output are obtained by employing sine-triangle comparison technique. Finally, the simulation results are presented to cope up with the proposed balancing scheme.

Keywords— T-type converter, voltage balancing, pulse width modulation

1. Introduction

Multilevel converters are attracting more attention in high-voltage and high-power electronic applications, since an improved high output voltage can be obtained with a respective harmonic content reduction [1]-[5]. A lot of multilevel topologies have been proposed in the past thirty years. The most common topologies are the diode-clamped, capacitor-clamped and cascaded types. In order to operate the switches in the above-mentioned topologies, switching schemes such as pulse width modulation (PWM), space vector pulse width modulation (SVPWM), selective harmonic elimination pulse width modulation (SHEPWM), nearest level modulation (NLM) and so on are effective solutions [6], [7]. To satisfy specific application requirements or to improve the operating performance, modifications and combinations of common topologies have been suggested. One of them is a T-type converter [8]-[12]. It is known that the T-type converter is more efficient than other multilevel converter topologies up to the medium switching frequency range.

The proposed method offers high degree of flexibility to operate in any range of modulation index (m_a). The benefits of a reduced number of switching devices, a reduced number of dc power supplies enables the T-type converter to suit for various industry applications. This script is detailed as follows: IInd Section explores the operation of the proposed inverter, and its operating modes, in Section III, the modulation scheme is presented, in IVth Section, the DC-link voltage balance problem is addressed. Simulation results are presented in Vth Section, Section VI discusses the conclusion.

2. System Configuration

Fig. 1 shows the proposed single-phase T-type inverter. It consists of four IGBTs (T1-T4) with anti-parallel diodes. The DC-link consists of single DC source parallel to two series-connected dc capacitors. The mid-point terminal of the DC-link is connected to the H-bridge circuit through a branch consisting of four diodes and an IGBT. This mid-

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Closed Loop operation of the Boost Converter

[1]A. Teja, [2]R. Sai Rushitha, [3]V. Ganesh, [4]Ch. Govinda, [5]T. Abhilash, [6]P.Jitendar

[1,2,3,4]Department of Electrical and Electronics Engineering
Aditya Engineering College, Surampalem, Andhra Pradesh
[5]Accendere Knowledge Management Services, [6]Department of Electrical and Electronics Engineering, MLR Institute of Technology, Hyderabad

Email: [1]tejaappikonda98@gmail.com, [2]rushitha.ravanala0456@gmail.com, [3]veesamganesh1234@gmail.com, [4]ch.govinda@aec.edu.in [5]abhilash.tripuathi@accendere.co.in, [6]jitendar13@gmail.com

Abstract— Boost converters are popularly been used in various applications. In some of the applications, its closed-loop control is desired to obtain the required output. This paper introduces the operation of boost converter and proposes a method of closed loop operation. A proportional-integral (P-I) control along with a hysteresis band is employed to perform the closed-loop operation of the boost converter. The P-I values are chosen based on trial and error method. Finally, the proposed technique is simulated in MATLAB/SIMULINK environment and the results are presented.

Keywords— boost converter, P-I control, closed-loop

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

Analysis and Simulation of a Novel H-Bridge based Multi-Level Inverter with reduced DC sources

[1]B. Satya saisravani, [2]B. Kiran kumarreddy, [3]P. Laswini, [4]N. Rajesh, [5]T. Abhilash, [6]P.Ravi Teja

[1,2,3,4]Department of Electrical and Electronics Engineering
Aditya Engineering College, Surampalem, Andhra Pradesh
[5]Accendere Knowledge Management Services,
[6]Department of Electrical and Electronics Engineering, MLR Institute of Technology, Hyderabad

Email: [1]bs.s.sravani@gmail.com, [2]kiranreddy67271@gmail.com, [3]paramallalaswini06@gmail.com, [4]rajesh.n@aec.edu.in [5]abhilash.tripuathi@accendere.co.in, [6]rawitheja@gmail.com

Abstract— In this manuscript, a seven-level inverter topology using novel bridge structure with the minimum component count is presented. This configuration is gifted to enhance the number of output voltage levels by using a fewer number of power electronic evices such as switches, power diodes, driver circuits, and dc voltage sources that lead to saving of installation space and cost of the topology. In addition, in the proposed cascaded multilevel inverter, not only the number of required power electronic devices is reduced, but also the amount of the blocked voltage by switches, and the number of different voltage amplitudes of the used sources is decreased. The operating modes of the proposed inverter are analyzed in detail during zero, positive, and negative levels. The proposed topology is gated using sinusoidal Pulse Width Modulation in MATLAB/Simulink environment.

Keywords— multilevel inverter, seven-level, pulse width modulation

1. Introduction

Conventional multilevel topologies, such as the neutral point clamped converter (NPCC), flying capacitor converter (FCC), cascaded H-bridge converter (CHBC), as well as the modular multilevel converter (MMC), have been well studied and commercialized in the past decades [1-3]. However, when the voltage levels increase, the number of clamping diodes in the NPCC and flying capacitors (FCs) in the FCC rises tremendously [4,5]. Furthermore, the NPCC suffers from indirect clamping of the inner devices when the voltage level is higher than three [4]. The CHBC and MMC are easier to expand the voltage levels due to their modular design [5]. But the CHBC needs a phase-shifting transformer to provide isolated DC sources, which results in substantial investment and volume [6-9]. The MMC shows good prospects for HVDC transmission. But the complex controls (e.g., capacitor voltage balancing control and circulating current suppression control) and relative high primary investment make the MMC less attractive in medium-voltage applications [10-12].The proposed converter offers the benefits of a reduced number of switching devices, a reduced number of dc power supplies, and lower off-state voltage stress across the switching devices. This script is detailed as follows: IInd Section explores the operation of the proposed inverter, and its operating modes, in Section III, the modulation scheme with improved spectral performance is shown, in IVth Section, the simulation results at different values of modulation indices are discussed and Vth Section, discusses the conclusion.

2. System Configuration

Fig. 1 shows the proposed single-phase seven-level inverter using switching devices, and dc-sources. All the switching devices used in the proposed configuration are of bi-directional conducting devices with uni-directional voltage sustaining ability. The dc supplies can be obtained either from rectifier circuits, battery banks, or pv arrays. The proposed topology consists of two dc sources V_{dc1} and V_{dc2}.In order to produce the seven-level output, the dc source magnitudes are to be chosen as $V_{dc1} = V_{dc}$ and $V_{dc2} = 2\ V_{dc}$. It should be noted that the dc sources are aligned in opposite direction w.r.t each other.

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

A Seven-Level Quasi Z-source Inverter

[1]Sk. Nazeer, [2]M. Sneha, [3]B. Surendra, [4]K. Ravi Kumar Reddy, [5]T. Abhilash, [6]A.Yadagiri

[1,2,3,4]Department of Electrical and Electronics Engineering
Aditya Engineering College, Surampalem, Andhra Pradesh
[5]Accendere Knowledge Management Services,
[6]Department of Electrical and Electronics Engineering, MLR Institute of Technology, Hyderabad

Email:
[1]sknazeer082@gmail.com,[2]snehamadireddy1999@gmail.com,[3]bodapatisurendra05@gmail.com, [4]ravikumarreddy.eee@gmail.com
[5]abhilash.tripuathi@accendere.co.in, [6]yadagiri259@gmail.com

Abstract— A seven-level inverter with quasi Z-source boost converters is proposed in this paper. The proposed topology employs a packed U-cell asymmetrical type multilevel inverter along withfront end quasi Z-source networks. The quasi networks provides high gain compared to a conventional boost converter. This topology is most suitable photovoltaic multi-string applications. The proposed topology has the potential to supply both the DC and AC type loads. The inverter structure has lower number of active switches which helps in reduction of losses and improvement in efficiency. In this paper, theoperation principle of quasi network and inverter circuit are explained in detail. In addition,the simulation results for various modulation indices are presented.The proposed topology is gated using sinusoidal Pulse Width Modulation in MATLAB/Simulink environment.

Keywords— quasi network, multilevel inverter, seven-level

1. Introduction

The evolution of Z-source inverters(ZSIs) [1] in the area of power electronics has seen a significant rise in the lastdecade due to its wide range of applications in major areas like uninterruptible power supply (UPS), facts, hybrid electrical vehicles [2],and distributed generation (DG). The limitations of voltage source inverters (VSIs) and current sourceinverters (CSIs) are addressed through flexible control of output voltage by allowing overlap of switches for a part ofswitching cycle, which eliminates the need of dead band between the switches, thus reducing the waveform distortionand enhancing reliability. In addition, it provides single-stage power conversion with buck-boost capability, thusimproving the efficiency of the system compared with two-stage conversion due to reduced component count.A comprehensive survey on differentZ-source topologies and their advancements is reported in [3].

In contemporary, multilevel inverter (MLI) is becoming popular for low-voltage and low-power applications. It offerssignificant advantages of lower device ratings, low dv/dt, low total harmonic distortion (THD), and reduced filter size.Some well-known and popular topologies are neutral-point-clamped MLIs (NPC MLIs), flying capacitor MLIs (FCMLIs), and cascaded H-bridge MLIs (CHB MLIs). Among these, CHB is most preferred due to its modularity feature [4].Moreover, several topologies are developed in recent years in terms of reduced component count, capacitor voltagebalancing, control complexity, and the number of direct current (dc) sources. However, the switch count remains amajor constraint in developing new topologies. Despite the various advantages, the output gain of MLI is buck innature, which is a limitation. This necessitates a suitable power conditioner to be upgraded with MLI in order toimprove input voltage regulation as well as output voltage gain. Therefore, MLI is upgraded with impedance source network with features of improved output voltage gain, enhanced reliability, enhanced input voltage regulation, and quality output waveforms for the increase in levels.

The proposed converter offers the benefits of higher voltage gain and seven-level AC output with a reduced number of switching devices, a reduced number of dc power supplies, and lower off-state voltage stress across the switching devices. This script is detailed as follows: II[nd] Section explores the operation of the proposed inverter, and its operating modes, in Section III, the

Study of IoT and Cloud-based smart farming approaches

P. Yamini Srilakshmi Amulya[1], V. Sai Mounika[2], M. Sandhya Devi[3], S. Krishna[4,*]
Department of ECE, Aditya Engineering College, Surampalem, Andhra Pradesh, India
amulyapuliga@gmail.com, saimounica131094@gmail.com, sandhyamaddipati2000@gmail.com,
krishna.s@aec.edu.in

ABSTRACT

The biggest economy of India is Agriculture. Everyone depends on it directly or indirectly. Nowadays, agriculture is done by using very new modern methods. One of those methods is by using IoT (Internet of Things). Magnificent agriculture means Smart agriculture. In the present paper, we are going to see how the sensors have been a part of modern agriculture and then discuss how the technology has been upgraded in small farms at home and at large businesses which can increase the ability to produce food in the world. Using IoT and embedded systems now we are going to cultivate our crops by sensing the soil condition by using various sensors like PH Sensor, Humidity Sensor, Temperature sensor. By this system, farmers will be able to understand their farm, preserve their resources by using them without wastage and also maintain a safe environment. Practically implementation of this kind of operation is difficult but by using IoT we can create smart systems using the Internet and Wi-Fi.

INTRODUCTION

Agriculture is the primary occupation of India. By making use of evolution in technology we can develop a smart irrigation system. Water is the main for agriculture. To use water sensibly we have come across a technology called IoT (Internet of Things) [1-2]. Because water is the basic need of every organism in the world. We have to conserve it for the growing population, food demand and future generations. for this, we have designed an Automatic Irrigation System (AIS). Now a day's water is completely contaminated. Because of this reason, everyone is disturbed including plants and animals.

The entire ecosystem gets affected because of this contaminated water. Agriculture needs 85% of freshwater. If water gets contaminated, the agriculture sector is also affected. If measures were not taken to preserve water further centenaries may be affected by severe water-related complications.

Analysis of Channel coding performance for wireless communications

Muppana Sonika[1], S. B. G. Tilak Babu[2], DurgeshNandan[3,*]

[1,2] Department of Electronics and Communication Engineering, Aditya Engineering College, Surampalem, East Godavari Dist., A.P. India

[3]Accendere Knowledge Management Services Pvt. Ltd., CL Educate Ltd., New-Delhi, India

sonygeetha1999@gmail.com, balagangadhar@aec.edu.in, durgeshnandano51@gmail.com

Abstract: In this paper, we discuss the Channel Code, including a few developments in potential wireless communication. Channel cryptography is also known as the "Leading Fault Management Catalog." In digital communication systems, it is a way of exposing and amending bit deceptions. Course coding is practiced on both transmitters and receivers. Its handouts the might and key to the receiver to discern and rectify miscues, if they betide all the time the transference due to noise, trespassing, and paling. Shannon has made clear the trajectory coding and trots out the actuality of the error correction codes (ECCs) that have been set up to be completely cognizant of true transmission. In the phase, the certainty of any admeasure shines brighter than the capacity. Scads analysts pick up an application to scrutinize the emergence of imminent ECCs, on the other hand, has no success. Because it is capable of significantly raising the degree of various communication mechanisms including connecting lessness, evacuation, perceptibility, sub-astral aural, and propaganda processing compliance, the connecting ECCs have been more apprehensive.

Keywords: Channel coding, Wireless communication, Capacity, Power, Noise, Interference, Bit-error.

1. Introduction

Coding is a blueprint that could alter the ideas of resolutions in digital media. There are two types of channel coding commonly used to track the dispatch soundness arising from the duct uncertainty. The aberrations while transmitting in the medium could be observed using the Syndrome Detection Catalog. In the case of delinquency correction codes, errors can be corrected without re-siphoning the note. Syndrome discovery tabulation patterns Model Syndromes while transmittance is managed to be encountered. Thus, the code word authorized shall be forsaken while the breakdown of the transport is reported; otherwise, the receiver shall turn the tail and the request to the transmitter for re-transmission. In the error correction of the

Development of FFT Processor: A Succinct Study

P. Bhavana Varma[1], R.Dheeraj[2], N.Abhitej[3], B. Srinivas[4]

[1,2,3,4]Dept of ECE, Aditya engineering college, Surampalem, Andhra Pradesh, India.

[1]bhavanavarma.p@gmail.com, [2]rachuridheeraj456@gmail.com, [3]abhitej3718@gmail.com,

[4]srinivas.budaraju@aec.edu.in

Abstract

In 1965, Cooley and Turkey have proposed an algorithm which is a "Fast Fourier transform (FFT)".It possibly will diminish the computational multifaceted nature of"Discrete Fourier transform(DFT)"fundamentally. The developmentof FFT is well thought-out as milestone advancement in the research area of wireless communication such as "Digital Signal Processing (DSP)". Since it might speed up the DSP algorithms fundamentally with the end goal that ongoing computerized signal handling could be conceivable.Also, the quick development in remote interchanges has achieved another time of remote mixed media applications and administrations, for example in the broadcasting of information, picture, and video above remote broadband access systems. As requires are"Orthogonal Frequency Division Multiple Access (OFDMA)". The "Time Division Duplex (TDD)" plot based regulatory strategy is a fascinating remote correspondence innovation with a multi-channel genuine sound system for high data rate remote access. We additionally portrayed the models and the direct signal for the planned TIR23 SDF. The exploratory outcomes demonstrate that the FFT dependent processors on TIR23 SDF lessen concerning 43.3% of the equipment multifaceted nature in the FPGA execution.

Keywords:FFT, DFT, OFDM, Digital signal processing, FFT/IFFT processor

1. Introduction:

The increase of development in the area of wireless technology has been improved, for this development, one of the main components used is IFFT/FFT processor.The IFFT/FFT processor is used in the OFDM system used for transmission in wireless communication systems. This processor performs baseband multi-carrier modulation and demodulation. The IFFT/FFT processor is mainly used in "SISO-OFDM" and "MIMO-OFDM" systems. This processor is more efficient in the "MIMO-OFDM" systems when compared to the "SISO-OFDM" systems but the MIMO-OFDM system requires more than one IFFT/FFT processor [1]. In the "MIMO-

Study on Key Logger: Challenges and Solutions

Yash Adhikari[1], Durga Suma Priya[2], M. Visweswara Rao[3,*]
[1,2,3]Department of Electronics & Communication, Aditya Engineering College, Surrampalem, Andhra Pradesh, India.
yash.adhikari671@gmail.com[1], sumapriyadurga@gmail.com[2], visweswararao.m@aec.edu.in[3,*]

Abstract

Key logger is one of the open issues in the present society. A keylogger is a program that record all key stick entered on the keyboard, in another word key loggersare the sort of the spywares that take the information of the clients by following their keyboards.Detecting the key loggers is the troublesome undertaking to perform because generally they hide their presence using technology like root-kit so they don't get detected from antivirus and other system protections. The primary work of this program is that they will catch the keystrokes squeezed by the client and store them in a log file. Either this log file can be store on the same system or send to other system using internet or other communication method. we all know how important it is to protect our password and other important data, this keylogger had the protection task difficult so in this paper we are going to talk about various type of keylogger and their preventionmethods

Keywords: Key Logger, DMA(Direct Memory Access), Keystroke, GPU.

1. Introduction

We live in the world where we are surrounded by the technology, EARLY morning when we wakeup we grab our phone or some other devices, These technology have saved our time and made our life easier, we even make bank transection from our handset as we trust our technology But the question arises how secure we are with it ?.With the increase in benefit of technology the threat has also increased. Cracking, hacking, Cyberbully, Cybersquatting, Creating Malware, Espionage, Identity theft, phishing, spoofing is some of the evil action that are done with the use of technology. Among these keystroke logging(known as key logger) is one of the most used technique to abstract the useful data,criminals found it as most effective method.

The word key logging mean "the action of recording (logging) the keys struck on a keyboard"A key logger is programming that tracks or logs the keys struck on your keyboard, ordinarily in a

A Review Paper on Ultra-Wide Band CMOS Low Noise Amplifier Using 0.18µm Technology

V. Lakshmi Sravanthi[1], S. Khadar Bhasha[2,*]

[1,2]Department of Electronics & Communication, Aditya Engineering College, Surrampalem, Andhra Pradesh, India.

sravanthiv2000@gmail.com[1], khadarbasha.s@aec.edu.in[2,*]

ABSTRACT

In the field of VLSI, the circuits can be easily fabricated into the small area and with less cost. Due to the advancements in VLSI different technologies are introduced. A low noise amplifier is a device which amplifies the given input signal with less added noise so that the signal can be processed further without any errors. An "Ultra-Wide Band Low Noise Amplifier (UWB-LNA)" is an amplifier which can be operated in the wide range of frequencies. Here we fabricate the integrate circuit using CMOS because the CMOS has three main advantages over non CMOS technologies. The CMOS consumes very less static power and these devices are having high noise immunity. So as we require the less amount of noise in the output signal we prefer to fabricate the low noise amplifier using CMOS fabrication. Compared to other technologies in the CMOS IC fabrication the 0.18-µm technology reduces the operating voltages by 20% to 30% there by reducing the power consumption and increases the battery life of applications. In this paper we are focusing on the efficient way to fabricate a CMOS ultra wide band low noise amplifier of CG-CS model. The proposed model has a high gain of 12.8 dB and operates in the wide range of frequencies from 0.4-10 GHz with noise figure of 4.4-6.5 dB and consumes 12mW of power with an area of 0.42 mm2.

Keywords:"Low Noise Amplifiers (LNA)", "Ultra-Wide Band (UWB)", CG-CS (Common gate-common source) amplifier

1. INTRODUCTION

This paper has been implemented with the "Distributed Amplifier (DA)" which uses 0.18-µm CMOS technology. The amplifiers distributed are large-band circuits, which have a substantial improvement in product bandwidth over the unit gain rate of the transistor. This can be increased by stopping active system output and input power (transistors, diodes).Compared to previously published papers on CMOS distributed amplifiers[2], the

Books ▾ Journals ▾ e-Collections ▾ Open Access Publish Resources ▾ Catalogs About Us Newsroom Special Offers ▾

[redacted]nal Details | For Authors | For Reviewers | For Editors | Table of Contents | Special Issues

Navigate This Page

- Description & Scope
- Abstracting & Indexing
- Editorial Board
- Editorial Policy
- Latest Articles
- Copyright & Licensing
- Article Processing Charges
- Archiving
- Contact

HYBRID open Access
Free Preview

International Journal of Cloud Applications and Computing (IJCAC)

This journal will be converting from Hybrid Open Access to full Gold Open Access on January 1, 2023. All article manuscripts submitted September 1, 2022 onward will be processed through as open access submissions in preparation for the 2023 conversion.

"It is with a heavy heart that IGI Global announces the passing of Dr. Dharma P. Agrawal of the University of Cincinnati, USA, who served in a number of capacities with IGI Global, including as co-Editor-in-Chief of the International Journal of Cloud Applications and Computing (IJCAC). Dr. Agrawal has also served as a guest editor for various journals of IGI Global as well as a co-editor of several book publications including casebooks, handbooks of research, and edited monographs. We offer our deepest condolences to his friends, colleagues, and family.

Editors-in-Chief: B. B. Gupta (Asia University, Taichung City, Taiwan) and Miltiadis D. Lytras (The American College of Greece, Greece)

Indexed In: INSPEC, SCOPUS and 14 more indices
Published: Continuous Volume | Established: 2011
ISSN: 2156-1834 | EISSN: 2156-1826 | DOI: 10.4018/IJCAC

Submit to IJCAC

Subscription Options

Share

Recommend to Librarian

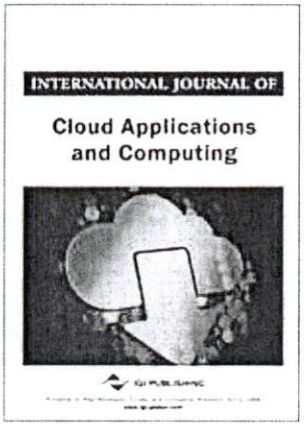
Recommend to Colleague

Fair Use Policy

Free Content

Sample Issue: *IJCAC1(1)*

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437



Multi Factor Two-way Hash-Based Authentication in Cloud Computing

K. DeviPriya (Aditya Engineering College, Andhra Pradesh, India) and Sumalatha Lingamgunta (University College of Engineering, Kakinada, India)

Source Title: International Journal of Cloud Applications and Computing (IJCAC) (/journal/international-journal-cloud-applications-computing/41974) 10(2)

Pages: 21

DOI: 10.4018/IJCAC.2020040104

Abstract

The expansion of Cloud computing is influencing various domains such as education, the banking sector, industries, government, health informatics, and individuals. The characteristics of an easy interface, on-demand access, scalability, and low infrastructure investment have to lead to the fast adaptation of Cloud computing based upon their needs. Despite the advantages, Cloud computing is open to more security risks and attacks especially in terms of communication due to the lack of secure authentication and privacy. In this article is presented a novel hash-based multifactor secure mutual authentication scheme that includes mathematical hashing properties, certificates, nonce values, traditional user ids, and password mechanisms that resist MITM attacks, replay attacks, and forgery attacks. We implemented our proposed method in the Microsoft Azure cloud and the results are evaluated. The security analysis is done by using the Scyther tool and with a formal analysis by using GNY belief logic. The results indicate the proposed scheme is capable of providing strong secure authentication.

Article Preview

Top

Related Work

Existing studies indicate that general authentication mechanisms like password based authentication schemes, nonce based mutual authentication scheme with smart cards, time stamp based authentication schemes(Awasthi et al., 2003, Chan et al., 2001 Chen, et al., 2002, Shen, et al., 2003) are considered as traditional algorithms to access the services from the remote

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

International Journal of Biology Research
ISSN: 2455-6548; Impact Factor: RJIF 5.22
Received: 03-11-2019; Accepted: 04-12-2019
www.biologyjournal.in
Volume 5; Issue 1; January 2020; Page No. 04-06

Soft beverages as an alternative to TAE buffer in agarose gel electrophoresis

Niranjan Babu Akula[1], Manav Vanga[2], Suryanarayana Veeravilli[3]
[1, 2] Department of Biotechnology, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Andhra Pradesh, India
[3] Department of Humanities and Basic Sciences, Aditya Engineering College, Surampalem, Kakinada, East Godavari District, Andhra Pradesh, India

Abstract
Background: The pH of carbonated drinks is known to be low and have, therefore, been implicated in the increasing incidence of acidity.
Aim: Here we report on an efficient approach for rapid analysis of nucleic acid characterization by varying a cost-effective running buffers for agarose gel electrophoresis.
Material and Methods: Commercial DNA is used in electrophoretic analysis using various soft beverages by optimizing its pH value and gel bands were quantified using Image.
Results: Red bull energy drink revealed that concentration, time and voltage do not have any effect in analysis of nucleic acids, while fizz revealed high concentration and sensitivity in characterization of nucleic acids.
Conclusion: This approach was fast, easy and cost-effective than use of TAE or TBE as running buffers in agarose gel electrophoresis.

Keywords: Thumsup, Fizz, Red bull, Pepsi, TAE, Electrophoresis

Introduction

Since the adoption of agarose gel in the 1970s for the separation of DNA, it has proven to be one of the most useful and versatile technique in biological sciences research [1]. Agarose's high gel strength allows for the handling of low percentage gels for the separation of large DNA fragments [2]. Molecular sieving is determined by the size of pores generated by the bundles of agarose in the gel matrix [3]. Properties of electrophoresis buffers such as pH, ionic strength, and composition affect performance [4]. Choice of novel buffers seem more likely to be widely adopted when researchers do not have to commit to purchasing expensive machines [5]. Buffer systems of a positive polarity function normally over the entire pH range, whereas nucleic acids with negative net charge are retarded at the gel surface in buffer systems with negative polarity [6]. New methods were also developed by embedding several agarose gels as multiple gradient-slab gel electrophoresis each of a different agarose concentration, within a single gel slab [7]. Difficulties also hinders the use of organic solvents in the running buffer has an extremely low buffering capacity, necessitating buffer changes or the use of a buffer recirculation system [8]. In comparison to TAE and TBE, soft beverages buffers provide higher voltage and current stability, lower working concentration and lower voltage, resulting in less heat generation.

Material and methods

Determination of pH in soft beverages

Various soft beverages like Pepsi, Fizz, Sprite, Red bull and Thumsup were selected based on the convenience and availability at KL University campus, Andhra Pradesh, India. Ten ml of each sample were checked for initial pH and adjusted with either 1M NaOH or HCl to attain usually to pH 8.3. The buffer was diluted to 100 times using double distilled water or milli Q water and store at 4^0C until further use [9].

Agarose gel electrophoresis

Wide mini-sub cell from Genei (10 X 12 cm) was used for agarose gel electrophoresis and carried out using soft beverages as running buffer for characterization of nucleic acids [10]. Commercial DNA (Salmon sperm DNA, SRL) of 1ug in concentration is used as loading sample along with tracking dye. Soft beverages as buffers were tested with 300ml volume, voltage, current, and power were recorded with an DC-300 power supply (Genei Apparatus). Fifteen microliters of sample were loaded, gel was stained with ethidium bromide for UV photography by a CCD camera (UVI-Tech, Germany).

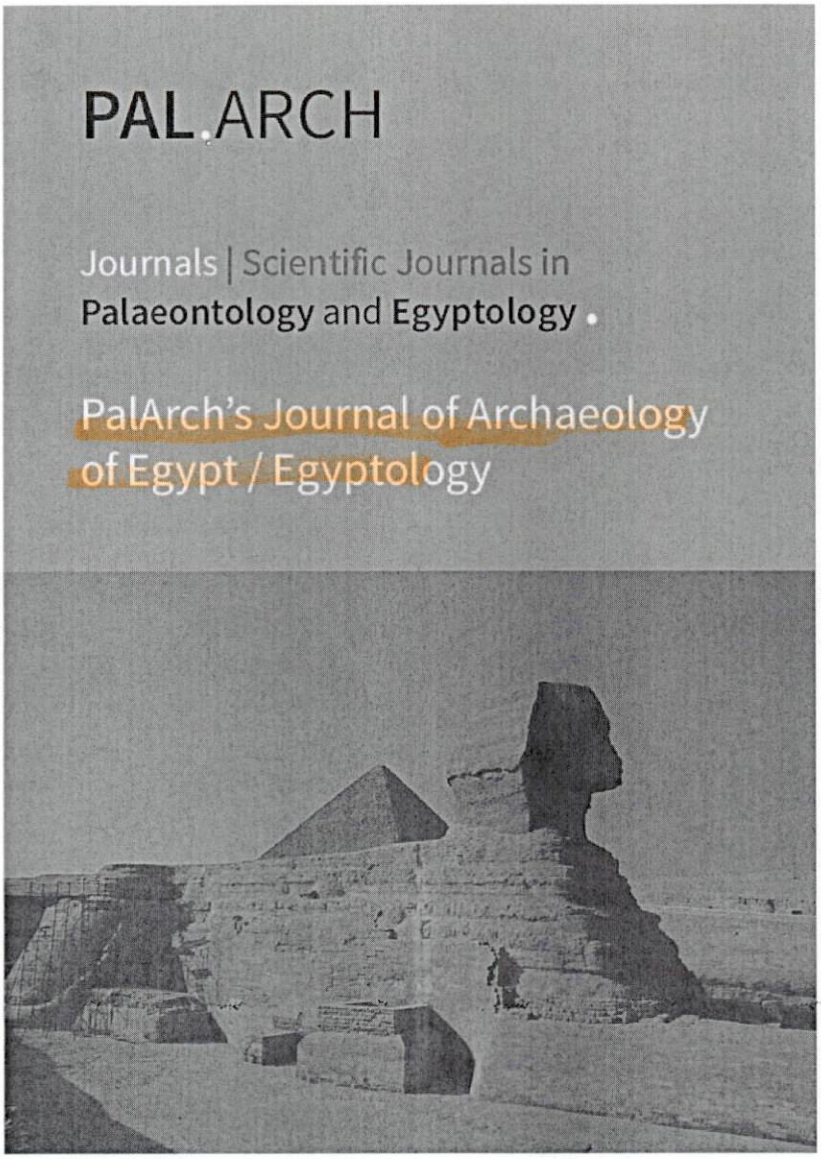
Quantification of gel band

For analysis of the gel images Image J 1.38 (Windows version of NIHImage, http://rsb.info.nih.gov/nih-image/), is used as tool for quantification of band intensity on the agarose gel. Gel is stained with ethidium bromide and analysed on UV-trans illuminator for the confirmation of bands. Gels were placed in gel doc (UVI-Tech, Germany) and photographed. Image J is used for density profile measurement, peaks height as well as peak intensity or volume of the band of the expected molecular weight [11].

Results and discussion

Determination of pH in soft beverages

Soft drinks are the most acidic beverages according to Real Water Health. In fact, their acid content is in the same range as vinegar. Initial pH of all selected beverages was determined using pH meter (Eu Tech, Germany) after the



ISSN: 1567-214X

INFORMATION

For Readers

For Authors

For Librarians

MAKE A SUBMISSION

PRINCIPAL
ADITYA ENGINEERING COLLEGE
SURAMPALEM - 533 437

PalArch's Journal of Archaeology of Egypt / Egyptology

INFLUENCE OF STEMMING MATERIAL ON PERFORMANCE OF BLASTING

Sudhakar Reddy[1], *Abhishek Kumar Tripathi*[2], *Satyajeet Parida*[3]
1, 2, 3-Department of Mining Engineering, Aditya Engineering College, Surampalem, AP,
Corresponding Author Email- abhinitrkl12@gmail.com

Sudhakar Reddy[1], Abhishek Kumar Tripathi[2], Satyajeet Parida, Influence Of Stemming Material On Performance Of Blasting-- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(7). ISSN 1567-214x
Keywords: Stemming, Blasting, Muckpile Profile, Mean Fragment Size, Throw of Material

ABSTRACT
This paper discusses the application of 3 types of stemming materials used in road metal quarry for blasting. During blasting, stemming plays a key role in confining the explosives and making effective utilisation of blasting energy. In our case study, we had used 3 types of stemming materials that are drill cuttings, crushed aggregate, and clay. The trial blasts were conducted in a basalt stone quarry situated at Malkapur village in Medak district of Telangana state. The uniaxial compressive strength of the rock in consideration, i.e., basalt is 300MPa. Post blast examination was done by using image photography. Keeping all other parameters unchanged(spacing, burden, depth of the hole, type of explosive, and stemming height), influence of stemming material on muck pile profile, mean fragment size, and throw of material were studied in this research work.

1. INTRODUCTION

Blasting is an important part of mining work. It accounts for 20% of the cost of production of the minerals or rocks. [1]. In open cast mines, blasting can be classified as bench blasting and secondary blasting. Bench blasting, which is also called as primary blasting, aims at fragmenting the minerals or rocks. In order to meet the appropriate blast result, the mineral or rock fragments should meet the mean fragment size. If the fragmented minerals or rocks are less than that of the mean fragment size, then, the blasting operation can be considered to be well executed, whereas, the rock or mineral fragments, bigger than the mean fragment size, are responsible for the formation of boulders, which leads to secondary blasting, to bring the size of fragmented blocks below the mean fragment size [2]. Blasting is considered to be the cheapest way of fragmentation in open cast mines,

International Journal of Ambient Energy

Journal information

Print ISSN: 0143-0750 Online ISSN: 2162-8246

16 issues per year

International Journal of Ambient Energy is abstracted and indexed in the following:

Engineering Index Monthly; Environment Abstracts Annual; Inspec; International Building Services Abstracts; Mechanical Engineering Abstracts; National Academy of Agricultural Sciences (NAAS); OCLC ArticleFirst and Scopus.

INTERNATIONAL JOURNAL OF AMBIENT ENERGY
2022, VOL. 43, NO. 1, 1482–1494
https://doi.org/10.1080/01430750.2020.1712250

Taylor & Francis
Taylor & Francis Group

Combined adjustment of injection timing and compression ratio for an agricultural diesel engine fuelled with Nahar methyl ester

Santosh Kumar Dash [a], Pradip Lingfa [b] and Debabrata Barik [c]

[a]Department of Mechanical Engineering, Aditya Engineering College, Surampalem, India; [b]Department of Mechanical Engineering, NERIST, Nirjuli, India; [c]Department of Mechanical Engineering, Karpagam Academy of Higher Education, Coimbatore, India

ABSTRACT

This study investigates the effect of compression ratio (CR: 16, 17, standard 17.5, 18) and injection timing (IT: 21°CA, standard 23, 25°CA) of a single cylinder direct injection diesel engine having power output 3.5 kW at rated speed 1500 rpm fuelled by an optimal Nahar methyl ester blend (NME40). For NME40/CR18, the BTE is improved by 1.09% and EGT is lowered by 2.98% compared to NME40 at standard engine settings, at full load. The HC, CO, and smoke emission decreased for NME40/CR18 by about 15.38%, 21.5%, and 0.5% compared to NME40 at standard setting, whereas it is reduced by 25.45%, 23.73%, and 3.4% compared to diesel respectively at full load. At full load, the NO_x emission for NME40/CR18 lowered by 4.73% compared to diesel. Combustion analysis reveals that higher CR has positive impact on cylinder peak pressure. Lower ID observed for higher CR and retarded IT operation.

ARTICLE HISTORY
Received 25 June 2019
Accepted 30 December 2019

KEYWORDS
Nahar methyl ester (NME); compression ratio (CR); injection timing (IT); diesel engine; performance

Nomenclature

°CA	Degree crank angle
aTDC	After top dead centre
B40	Blend of 40% (NME) with 60% petroleum diesel
BD	Biodiesel fuel
BP	Brake power
aTDC	After top dead centre
bTDC	Before top dead centre
BTE	Brake thermal efficiency
CP	Cylinder pressure
CR	Compression ratio
CT	Cylinder temperature
CO	Carbon monoxide
DF	Diesel Fuel
EGT	Exhaust gas temperature
HC	Hydrocarbon
HRR	Heat release rate
ID	Ignition delay
IT	Injection timing
NOx	Nitrogen oxides
PCP	peak cylinder pressure
PEC	Performance, emission, and combustion
PHRR	Peak heat release rate
TDC	Top dead centre

1. Introduction

From the evolution of time, energy has been an important ingredient for the progress and development of mankind. However, over-exploitation of finite fossil resources among nations for energy supremacy had adversely affected the entire ecosystem with the popular 'twin crisis' (depletion of fossil fuel and environmental pollution), the twenty-first century is witnessing. Learning this, scientists and researchers are making attempts to switch to various alternative sources of energy. Traditional zones on demand are being replaced by quick growing emerging markets. The energy mixing is shifting towards low carbon sources driven by technological advancements and environmental pollutions ('BP Energy Outlook' 2018). Recently, biodiesel (BD) prepared from plant oils, waste oils and animal fats, which satisfies the sustainability criteria set by the respective nations, has become popular in the market as an alternative diesel engine fuel. Diesel engines have evolved over time and are far more efficient than its counterpart petrol engines and its demand is increasing in an unprecedented manner in developing economies as a result of rapid surge in population and industries (Ciatti 2015). Investigations revealed BD contributed to the reductions of many pollutant emissions such as unburned hydrocarbon, carbon monoxide, smoke and particulate matter (Suresh, Jawahar, and Richard 2018; Dhana Raju et al. 2018; Ashok, Nanthagopal, Mohan, et al. 2017; Nanthagopal et al. 2018; Xue, Grift, and Hansen 2011; Barik and Vijayaraghavan 2018). However, researchers opined contradictory views on NO_x emissions for engines powered with BD fuels (Xue, Grift, and Hansen 2011; Varatharajan and Cheralathan 2012; Lapuerta, Armas, and Rodríguez-Fernández 2008; Chen et al. 2018). With the technological progression of the twenty-first century and development of several agreements on climate change and environmental pollution, engine manufacturers are now more concerned with stringent emission norms to alleviate environmental imbalance with taking care of energy efficiency.

CONTACT Santosh Kumar Dash santoshdash@aec.edu.in

Supplemental data for this article can be accessed here. https://doi.org/10.1080/01430750.2020.1712250

BENTHAM SCIENCE

Research Article

Circular Slotted Antenna with CPW feed for GSM and UWB Applications

Author(s): Sanjeev Kumar*, Ravi Kumar and Durgesh Nandan

Volume 11, Issue 2, 2021

Published on: 23 January, 2020

Page: [160 - 168] **Pages:** 9

DOI: 10.2174/2210327910666200123101812

Price: $65

Abstract

Background & Objective: The circular slotted monopole microstrip antenna with Coplanar Waveguide (CPW) feed for unified GSM and Ultra-Wideband (UWB) applications have been presented in this article. Circular shaped slots have been embedded in the radiating patch. Less surface area has been found due to slots etching and the overall antenna size is reduced by 45%.

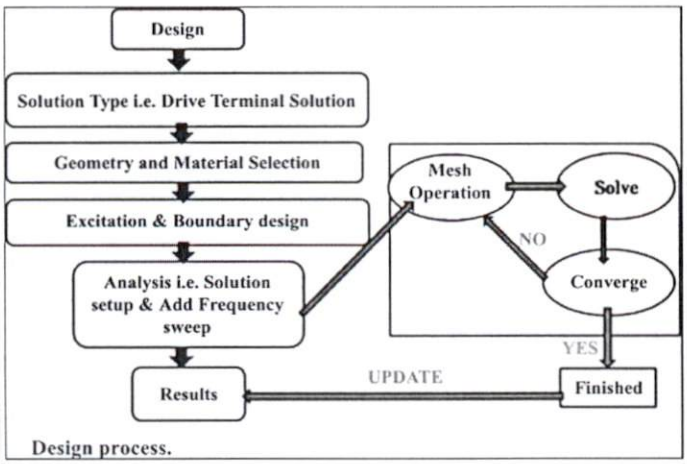
Results: The proposed antenna demonstrates a double band operation wrapping 883.6-1206 MHz (GSM band) and 2.75-18.30 GHz (UWB, X, and Ku) frequency band with VSWR of less than 2 and fractional B. W. of 30.8 % and 147% respectively. The pattern of radiation presented by the antenna is nearly omnidirectional in H-plane and directional in E-plane within the GSM and UWB band.

Conclusion: There is a variety of applications nowadays using these UWB antennas such as modern civil and military applications, wireless and radar communications, etc. Measured results are presented to validate the proposed antenna structure, which shows that the proposed designed antenna structure has a stable radiation pattern both at the GSM and UWB band ranges.

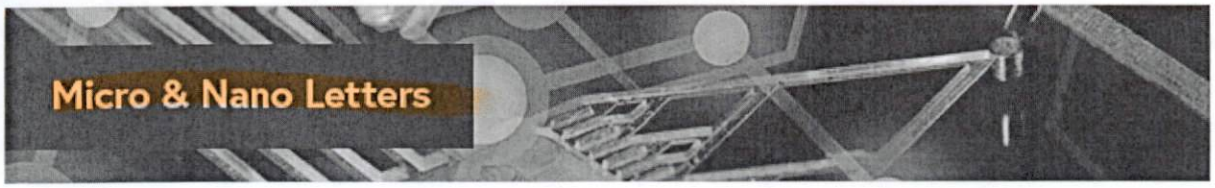
Keywords: Monopole antenna, GSM, UWB, wireless, CPW, radar communications

« Previous Next »

Graphical Abstract



Design process.



Editor-in-Chief: Peter Dobson (University of Warwick/University of Oxford)

2021 CiteScore: 2.0

Impact factor (2021): 0.980

Journal Citation Reports (Clarivate, 2022): 309/346 (Materials Science, Multidisciplinary) 106/110 (Nanoscience & Nanotechnology)

Online ISSN: 1750-0443

The Institution of Engineering and Technology

Micro & Nano Letters is a Gold Open Access rapid-communication journal that publishes short research papers on the latest advances in micro- and nano-scale science, engineering and technology.

Articles

Most Recent Most Cited

Open Access

Facile regulation of cuprous oxide microcrystal morphology and planes for visible light photocatalytic degradation

Xiaoyan Li, Chaoliang Zhang, Qi Yang, Rui Zhao, Hongfang Li

First Published: 3 August 2022

Abstract | Full text | PDF | References | Request permissions

Open Access

Received: 24 April 2020 | Revised: 28 October 2020 | Accepted: 11 October 2020

DOI: 10.1049/mna2.12039

Micro & Nano Letters

The Institution of Engineering and Technology WILEY

LETTER

Study of the magnetic properties of Mn-doped iron titanate nanoparticles fabricated using natural mineral

1 | INTRODUCTION

Iron titanate is a wide bandgap semiconductor with an energy gap in the range of 2.58–2.9 eV [1–4] and has applications in various fields such as spintronics, photoelectrochemical, humidity sensing, gas-sensing, optoelectronics, and high-temperature integrated circuits [1–10]. Owing to its commercial and scientific interests, iron titanate (FT) has been considered as a potential candidate for applications, such as pigments [11], Li-ion battery anodes [12], non-linear optics [13], photocatalysis [14], UV fabrics [15], electrochemical energy storage [16], photoelectrode for electrolysis of water [17–19], radiation-hardened electronics, microelectronics, and spintronics technologies, in numerous studies [20]. In recent years, there has been a growing interest in developing new materials based on magnetic as well as semiconductor materials for spintronics applications [5, 6, 19, 20], for which FT acts as a potential candidate.

In previous reports, FT nanoparticles and thin films were prepared by fabrication techniques such as solvothermal method [19], ball-milling, and hydrothermal processes [12, 21], sol–gel method [22], co-precipitation method [23], and ceramic method [24]. Talebi et al. [25] synthesised polycrystalline and spherical FT nanoparticles using wet chemical methods, and the prepared nanoparticles were paramagnetic in nature. Enhessari et al. [26] prepared polycrystalline, quasi-spherical, and paramagnetic-ferrimagnetic FT nanopowders via a solution-based approach. Guo et al. [27] fabricated amorphous FT nanotube arrays by anodization of the FeTi alloy, and their magnetic properties decreased as a result of disordered magnetic moments when the annealing temperature increased to 500 °C. Tang et al. [28] prepared FT composite particles using in situ hydrogen–thermal reduction method. The method used high-temperature treatment (650 °C), and the processing time was high (24 h) for fabricating crystalline nanoparticles. Further, the prepared composite particles were soft magnetic, and some of the iron metal particles were inlaid into titania, which led to superparamagnetic behaviour. Hessian and colleagues [29] synthesised ferrimagnetic pseudobrookite particles with unusual morphology of thin strings of joined particles using high temperatures starting from 900 °C. The synthesised material showed a weak ferromagnetic ordering and paramagnetic behaviour. Srinivas et al. [23] and Raghavender et al. [22] fabricated a soft ferromagnetic nanocrystalline FT through the co-precipitation technique and multistep process, respectively. Mahmoud and colleagues [30] prepared nanocrystalline pseudobrookite powder using inexpensive ilmenite ore obtained from the Abu Ghalaga region, Red Sea, Egypt. The synthesised FT had a weak magnetic system with ferromagnetic-paramagnetic behaviour. The preparation procedure involved a complicated process and required a high temperature treatment of 1000 °C.

Considering the issues such as complex process, multi-step approach, and high-temperature treatment, the present study aimed to prepare FT nanoparticles using a simplistic approach from an abundant natural source, ilmenite. Besides, the effect of Mn doping on the magnetic and semiconducting properties of FT was studied. The transition metal manganese (Mn) was chosen as a dopant material as the semiconducting property of these magnetic FT nanoparticles can be tuned by varying the concentration of the Mn dopant. The appearance of energy levels of Mn at different concentration narrows the band gap at different levels and enhances the magnetic as well as semiconducting property of the resultant materials. Such Mn-doped FTs have a significant impact on emerging technologies such as spintronics, magnetoelectronics, and rad-hard electronics [31].

2 | MATERIALS AND METHODS

Ilmenite sand used in this work was collected from coastal regions of Kanyakumari, Tamil Nadu, India. Polyvinyl alcohol (PVA, $(C_2H_4O)_n$, MW: 86.09 g mol^{-1}, 98% purity; Merck), manganese (II) nitrate hydrate ($Mn(NO_3)_2{\cdot}xH_2O$, MW: 178.95 g mol^{-1}, 98% purity; Merck), sulphuric acid (H_2SO_4, 99.999% purity; Sigma-Aldrich) and all other solvents used were of analytical grade.

2.1 | Experimental procedures

First, the collected sand was subjected to a double-digestion process using concentrated sulphuric acid at 200 °C for 3 h in a muffle furnace. The weight ratio between the ilmenite sand and the concentrated sulphuric acid required for digestion process was 3:1. The resulting mixture was cooled to room temperature

TABLE 2 Four-probe resistivity measurements for FT and various concentration of Mn-doped FT samples

Analyte sample	Resistance (KΩ)	Resistivity (KΩ-cm)
FT	4.47–4.53	19.37–19.63
0.2MFT	0.42–0.50	1.82–2.17
0.8MFT	0.48–0.54	2.08–2.34
2MFT	0.59–0.67	2.56–2.90

natural source ilmenite have not been reported. An essential aspect of optimizing the properties of the transition metal elements/compounds is an understanding of the nature and quantity of the dopant. It has been observed that the concentration of Mn strongly influences the electrical properties of Mn-doped metal oxide nanostructures. In some instances, an increase in Mn concentration resulted in an increase of resistivity and a decrease of magnetization [47].

In the present work, the semiconducting properties such as resistance and resistivity of the fabricated FT and MFT nanoparticles, determined using four-probe method, are shown in Table 2. The pristine iron titanate nanopowders without an addition of the dopant Mn demonstrated higher resistance and resistivity values comparing to the MFT samples. This implicated that the as-fabricated pristine nanopowders were devoid of carrier concentration. Adding a low concentration of Mn in the pristine samples, the resistivity of the 0.2MFT sample decreased by nine-fold, thereby improving the electrical conductivity. It is presumed that the addition of Mn ions contributed additional electrons to the conduction band. Thus incorporation of Mn in FT significantly decreased the resistivity values.

It can also be observed that the resistance and resistivity values increased with an increase in the dopant concentration, even though the values are lower than the pristine FT sample. The reason for this behaviour is ascribed to the incorporation of Mn^{2+} ions resulting in hole doping, which aids in the recombination of electrons in the sample, thus reducing the carrier concentration. This decrease in the carrier concentration resulted in an increase in resistivity, on increasing the concentration of Mn doping [48]. These results are also supported by XRD results. It can be explained by the fact that the decrease of crystallite size increased the total grain boundary fraction, which in turn enhances the grain boundary scattering, thus, results in an increase of electrical resistivity [49]. Eventhough doping of Mn^{2+} ions is highly desirable for improving the magnetic properties, which in turn it increase the resistivity values.

4 | CONCLUSION

A cost-effective methodology has been proposed for the large-scale production of FT nanoparticles using a natural source, ilmenite. It was found that doping with the transition metal manganese exerts a considerable effect on the structural, magnetic, and electrical properties on FT nanoparticles. The crystallite size decreased gradually on increasing the Mn content, due to lattice distortion caused by Mn and FT atoms. This work demonstrated that an ionic radius of Mn favours grain growth, which is necessary to achieve ferrimagnetic property. With an increase in the dopant concentration, M_s value decreased, which is attributed to the pairing of the nearest dopant ions. Though the addition of Mn was responsible for higher magnetic moments, it essentially reduced the carrier concentration and increased the resistivity values. Thus, a combination of magnetic and semiconducting properties of MFT could be used in applications such as spintronics, semiconductor device, magnetic recording, memory devices, and sensors.

Sutha Senthil[1]
Dhineshbabu Nattanmai Raman[2]
Arunmetha Sundaramoorthy[3]

[1] *Department of Electronics and Communication Engineering, Sri Venkateswara College of Engineering, Sriperumbudur, Tamil Nadu 602 117, India*
[2] *Department of Electronics and Communication Engineering, Aditya Engineering College, Surampalem, East Godavari, Andhra Pradesh 533437, India*
[3] *Department of Electronics and Communication Engineering, Center for Advanced Energy Studies, Koneru Lakshmaiah Education Foundation, Guntur, Andhra Pradesh 522 502, India*

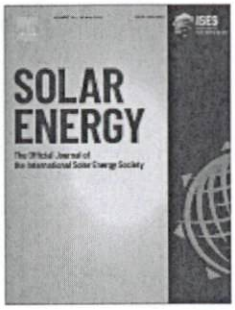
Correspondence
Arunmetha Sundaramoorthy, Department of Electronics and Communication Engineering, K L E F (Deemed to be University), Guntur District, Andhra Pradesh 522 502, India.
Email: sarunmetha@gmail.com

REFERENCES

1. Srivastava, J.K., et al.: Magnetic hysteresis behaviour of anisotropic spin glass Fe_2TiO_5. Phys. Lett. A 149(9), 485–487 (1990)
2. Hiromitsu, K., Masahiro, K.: Sol-gel preparation and photoelectrochemical properties of Fe_2TiO_5 thin films. J. Sol-Gel Sci. Technol. 22, 125–132 (2001)
3. Maria, V.N., et al.: Humidity sensing properties of nanocrystalline pseudobrookite (Fe_2TiO_5) based thick films. Sens. Actuators, B 277, 654–664 (2018)
4. Yu, R., et al.: Fe_2TiO_5/a-Fe_2O_3 nanocomposite hollow spheres with enhanced gas-sensing properties. Scr. Mater. 63(2), 155–158 (2010)
5. Tang, X., Hu, K.: The formation of ilmenite $FeTiO_3$ powders by a novel liquid mix and H_2/H_2O reduction process. J. Mater. Sci. 41, 8025–8028 (2006)
6. Ye, F., Ohmori, A.: The photocatalytic activity and photo-absorption of plasma sprayed TiO_2–Fe_3O_4 binary oxide coatings. Surf. Coat. Technol. 160(1), 62–67 (2002)
7. Fujii, T., et al.: Ilmenite–hematite solid solution films for novel electronic devices. Solid State Ionics 172, 289–292 (2004)
8. Dai, Z., et al.: Pulsed laser deposition of ilmenite $FeTiO_3$ epitaxial thin film onto sapphire substrate. Thin Solid Films 339, 114–116 (1999)
9. Zhou, F., Kotru, S., Pandey, R.K.: Nonlinear current–voltage characteristics of ilmenite–hematite ceramic. Mater. Lett. 57, 2104–2109 (2003)
10. Dietl, T., Ohno, H.: Ferromagnetic III–V and II–VI semiconductors. MRS Bull. 28(10), 714–719 (2003)
11. Guillaume, S., et al.: Near the ferric pseudobrookite composition (Fe_2TiO_5). Inorg. Chem. 55(5), 2499–2507 (2016)
12. Kyung, M.M., et al.: Synthesis of pseudobrookite-type Fe_2TiO_5 nanoparticles and their Li-ion electroactivity. Ceram. Int. 38(7), 6009–6013 (2012)

ELSEVIER Search

Home > Journals > Solar Energy



ISSN: 0038-092X

Solar Energy

The Official Journal of the International Solar Energy Society®

Publishing options: OA Open Access ↗ S Subscription ↗

↗ Guide for authors Track your paper ↗ Order journal

Editor-in-Chief > Editorial board

Ranga Pitchumani

Solar Energy, the official journal of the International Solar Energy Society®, is devoted exclusively to the science and technology of **solar energy applications**.

Read full aims & scope

Submit your paper

The Impact Factor of this journal is 7.188, ranking it 37 out of 119 in *Energy & Fuels*

With this journal indexed in 36 international databases, your published article can be

Feedback

ScienceDirect

Solar Energy

Volume 213, 1 January 2021, Pages 312-327

Radial movement optimization based parameter extraction of double diode model of solar photovoltaic cell

B.S.S. Ganesh Pardhu [a], Venkata Reddy Kota [b]

[a] Department of Electrical and Electronics Engineering, Aditya Engineering College, Surampalem, Research Scholar, JNTUK, A.P, India

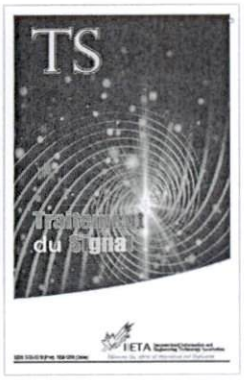
[b] Department of Electrical and Electronics Engineering, Jawaharlal Nehru Technological University Kakinada, A.P, India

Received 28 May 2020, Revised 15 November 2020, Accepted 16 November 2020, Available online 10 December 2020, Version of Record 10 December 2020.

https://doi.org/10.1016/j.solener.2020.11.046

Abstract

A new swarm-based stochastic radial movement optimization (RMO) algorithm is proposed for extracting unknown solar photovoltaic (PV) cell parameters. The explicit modelling of a solar PV cell is shown to be very influential in the performance assessment of maximum power point tracking methods. The performance of the Single-Diode Model (SDM) and Double-Diode Model (DDM) of a Kyocera KC200GT 200 W panel was verified and validated under different test conditions in the MATLAB Simulink environment. The objective of this study was to validate the accuracy of solar PV cell modelling and determine the best optimization algorithm among the RMO, particle swarm optimization (PSO), and differential evolution technique (DET). The RMO-based I-V and P-V curves were compared with those obtained by the DET and PSO methods. Additionally, statistical and error analyses were carried out to calculate the relative error (RE), individual absolute error (IAE), and root mean square error (RMSE) of the proposed method for better analysis. With the RMO method, the IAE and RE for the DDM of the solar PV cell was 0.0224 and 0.0509, respectively. For the DDM, the fitness function value of the RMO was $3.01E^{-4}$. The performance of the RMO method was superior to that of the PSO and DET methods based on curve fitting for the SDM, DDM, and datasheet values. Curve fitting with the RMO strongly fitted the datasheet curve, which resembled the RMO curve, and is possibly a suitable optimization approach for extracting the parameters of the DDM of the solar PV cell.



Traitement du Signal

2021 Impact Factor 2.299

- **ISSN:** 0765-0019 (print); 1958-5608 (online)
- **Indexing & Archiving:** Web of Science, Science Citation Index Expanded, Journal Citation Reports, Scopus, SCImago (SJR), Ei Compendex, MIAR, EBSCOhost, Publons, ScienceOpen, Google Scholar, CrossRef, Portico, Microsoft Academic, CNKI Scholar, Baidu Scholar
- **Subject:** Computer Sciences, Engineering

Traitement du Signal (TS) is a top-rated international journal committed to the dissemination of advances in the field of signal processing, imaging and visioning. Since its founding in 1984, the journal has published articles that present original research results of a fundamental, methodological or applied nature. Indexed in international databases, the TS provides a valuable reference to researchers, engineering, teachers and students across the globe. The editorial board welcomes articles on the latest and most promising results of academic research, including both theoretical results and case studies.

Focus and Scope

The TS welcomes original research papers, technical notes and review articles on various disciplines, including but not limited to:

- Signal processing
- Imaging
- Visioning
- Control
- Filtering
- Compression
- Data transmission

Read More

Just Published (/Journals/TS?qt-ts_journal_bottom=0#qt-ts_journal_bottom)

Featured Articles (/Journals/TS?qt-ts_journal_bottom=1#qt-ts_journal_bottom)

Most Read and Cited (/Journals/TS?qt-ts_journal_bottom=2#qt-ts_journal_bottom)

IETA International Information and Engineering Technology Association

Traitement du Signal
Vol. 37, No. 1, February, 2020, pp. 77-83
Journal homepage: http://iieta.org/journals/ts

An Efficient Antilogarithmic Converter by Using Correction Scheme for DSP Processor

Durgesh Nandan

Department of Electronics & Communication Engineering, Aditya Engineering College, Surampalem 533437, Andhra Pradesh, India

Corresponding Author Email: durgeshnandano51@gmail.com

https://doi.org/10.18280/ts.370110

Received: 14 August 2019
Accepted: 29 Decemebr 2019

Keywords:
antilogarithmic converter, computer arithmetic, DSP processor, error analysis, FIR filter, logarithmic converter, logarithmic multiplication

ABSTRACT

Digital Signal Processing (DSP) applications demand error-free and compact hardware architecture of arithmetic operations. A logarithmic operation provides an efficient option in place of binary arithmetic. In this paper, it is suggested that 11-region and 17-region error correction schemes for developing an efficient antilogarithm converter. It is used for developing the most accurate and compact logarithm multiplier which is used in the DSP processor. Implementations of reported and proposed designs are investigate based on accuracy and hardware overhead and it found outperform in comparisons of previously reported designs. The proposed 11- region converter involves 61% less Area Delay Product (ADP) and 49.82% less energy in comparisons of the reported 11-region antilogarithmic converter and 17-region converter involves 48.02% less ADP and 32.53% less energy in comparisons of the reported 14-region antilogarithmic converter. The proposed antilogarithmic converter achieves 1.697% and 1.084% error for 11-region and 17-region designs respectively than of reported designs of 1.876% and 1.351% for 11-region and 17-region respectively.

1. INTRODUCTION

Many handheld and portable signal-processing devices are parts of our daily life. The Digital signal processor and image processor have required accurate and efficient arithmetic operations for performing fast and efficient real-time applications [1-9]. As its well-known thing, that multiplier is the most utilized component in arithmetic operations. Many researchers' efforts have been directed to develop an accurate and efficient multiplier design [6-13]. Nowadays filters applications required an efficient multiplier design. Especially, FIR, FFT and DCT techniques want an efficient multiplier design for performing well.

Traditional or reported multiplication was limiting performance in terms of accuracy as well as hardware overhead. Logarithm multiplier must have the potential to become an option of a traditional multiplier for real-time digital signal processor [14-19].

Logarithm multiplication operation can be performing in three steps: (1) Conversion of any format numbers into logarithmic numbers, (2) then performed addition on logarithmic numbers, and then (3) convert back into initial format numbers [8]. The pictorial representation of logarithm multiplication is shown in Figure 1. Many methods regarding binary to logarithmic conversion and vice versa have been discussed in the last few years [18-35]. Error creates at the time of logarithmic and antilogarithmic conversion [10]. It shows the utility of an efficient and accurate logarithmic and antilogarithmic conversion process. The frame of remaining paper is as like: Systematic growth of literature is discussed in Section 2. Proposed methodology and possible hardware construction are discussed in Section 3. Results and comparative analysis of reported and proposed design are exploring in Section 4. At last, the pros corns of design are concluded in Section 5.

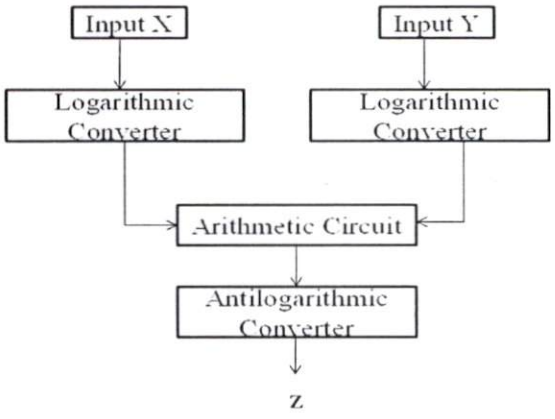


Figure 1. Pictorial representation of logarithm multiplication

2. SYSTEMATIC GROWTH OF LITERATURE

From 1962, researchers were trying continuously to propose error-free and hardware efficient approaches to get efficient and accurate antilogarithm [5, 10, 27, 29-35]. The entire antilogarithm converter process was adopted broadly in three categories of methods. The first is called the polynomial approximation-based method, second is called Read Only Memory (ROM) based method and the third is called shift-and-add based method. The general architecture of the antilogarithm converter with a correction circuit is shown in Figure 2. Mitchell's proposed logarithmic and antilogarithmic