Numerical Analysis of Piles in Layered Soils: A Parametric Study

Ravi Kumar Reddy C[#1] Padmakar K C[#2], Manjari M[#3], Ekasaikumar CH[#4], Saikumar K P R K[#5]

[#] Department of Civil Engineering, K L University
Vaddeswaram, Guntur, A P, India– 522502
[1] ravibecnitw@gmail.com
[2] chandu0398@gmail.com
[3] manjari.mathe@gmail.com
[4] chinta324@gmail.com
[5] saikumar.korlepara@gmail.com

Abstract – In this paper, numerical analysis of a pile-soil interaction problem is presented considering the parameters influencing the axial load-deformation behavior of the pile embedded in a layered soil medium. The analysis is demonstrated with parametric solutions of a pile with underlain model soil strata under the axial force. An attempt is made to ascertain the extent of influence of elastic properties of the pile, geometry of the pile, end conditions of the pile and the elastic properties of the underlain soil strata on the response of the piles under axial loads lying in a model soil layers in terms of the settlement of the pile and the internal deformation of the pile. The study revealed that the increase in modulus of elasticity of pile improves the settlement resistance of the pile, increase in the ratio of cross sectional dimensions causes decrease in the top deformations of the pile, the settlement of the pile reduced to a great extent when the cross section of the pile adopted is non circular instead of circular and increase in the elastic modulii of top and bottom layers of soil has decreased the settlement of the pile to a great extent, but elastic modulus of soil layers other than top and bottom has got negligible influence on the settlement of the pile.

Keyword - numerical analysis, pile, parametric study, layered soil, pile-soil interaction

I. INTRODUCTION

The design of pile foundations to resist axial loads completes when one can perform evaluation of ultimate bearing load, settlement prediction under the design load and structural design. Extensive research has concerned the evaluation of ultimate bearing capacity but little attention has been given for settlement of pile as well as the compression of the pile under the axial loads. Usually the methods of analyzing the behavior of axially loaded piles are the load transfer method (Coyle and Reese, Hazarika and Ramasamy, Matlock and Reese) and elastic continuum method (Poulos, Banerjee and Davis, Poulos and Davis).

The subgrade reaction theory idealizes the pile as an elastic beam supported by a series of discrete linear springs representing the soil. Simplicity of the subgrade reaction theory lies in its straight forward computations and the disadvantage is the approximation in subgrade reaction modulus leads to inaccurate solutions. The most powerful continuum approach is the finite element approach. Theoretically elastic solution [9] is more realistic because it considers the soil as a continuum rather than a series of unconnected springs as in the subgrade reaction analysis [6].

In this paper, extensive parametric studies are performed and presented in graphical from to facilitate the understanding of settlement prediction, which will be useful in the design and analysis of piles under the axial loads in layered soil. The main purpose of this study is to investigate the more practical case of the behavior of piles under the axial loads in layered soils using the continuum based numerical analysis.

II. PILE WITH EXTENDED SOIL LAYERS

Pile with underlain soil layers in model soil strata is presented in fig.1. The pile having three different cross sections viz., rectangular with dimensions a x b, square and circular of length L and axial load P is considered for the analysis.

The governing differential equation for the pile settlement given by [1]:

$$\frac{d^2u}{dz^2} - \frac{k_i}{1 + 2t_i} u_i = 0 \tag{1}$$

Where u_i is the displacement function $u(z)$ in the ith layer, k_i is the term which accounts for the shear resistance developed between soil columns due to differential movement of the soil columns, t_i is the term which accounts for spring effect of the soil (compression of the soil columns due to vertical movement of the pile)

The general solution of the differential equation (Eq. 1) is

Experimental Study on Non Destructive Testing Techniques (NDTT)

G.Lalitha[1], K.Bala Showry[2]

[1] G.Lalitha Assistant Prof, Civil Engineering, BVRIT, TS, India
[2] Dr.K.Bala Showry Professor, Mechanical Engineering, DRKIST, TS, India

Abstract— Defects are needed to develop new methods and to assess the performance and reliability of used methods and procedures. It is crucial to have representative defects in order to have an accurate and realistic assessment of the performance of NDT. Representativeness should be to the actual service-induced defects that the NDT method is used to evaluate. While various techniques have been used to create such defects, all conventional techniques seem to have some shortcomings that limit true assessment of the NDT performance. This paper describes developments of NDT technology. It is well known that water has a detrimental effect on the performance of adhesive joints, and is amongst the most common elements for a bond to encounter in service. Surface analysis has subsequently been performed on the failure surfaces of these specimens, which has helped to explain the variations seen in the mechanical performance after exposure to moisture. It is well known that introduction of a crack-like defect into a structure reduces its stiffness. . It is shown that most of the traditional limitations can be overcome using the currently available technology. Finally, three real-world application cases are presented showing the use of such cracks.

Keywords— NDT[1], Penetrant[2], Cracking[3], and Corrosion[4]

INTRODUCTION

As we all know that every product in the Industry is made up of material .So the material which we are selecting should be a QUALITY in order to get a final product as a QUALITY PRODUCT. For that reason QUALITY CHECK is important in the Industry in Industry we can check the **QUALITY** of a product by two ways
1. Destructive testing
2. Non-Destructive testing

In DESTRUCTIVE TEST the specimen is subjected to fracture under load and mechanical properties are measured by this testing. Eg. Tensile test, Impact test, Hardness test and Fatigue test. Compressive Strength test.
NON DESTRUCTIVE TESTS are employed for finished products to determine Internal defects such as Slag Inclusion, Porosity, Blow holes etc and Surface defects.

1.1 IMPORTANCE OF NDT

1. To improve the quality of a product
2. To improve the customer satisfaction
3. To reduce in-service accidents
4. Inspection of Raw Products
5. Inspection Following Secondary Processing
6. In-Services Damage Inspection
7. Flaw Detection and Evaluation
8. Leak Detection
9. Estimation of Mechanical and Physical Properties

2. COMMON APPLICATION OF NDT

1. Welding
2. Cracking
3. Corrosion
4. Erosion/Wear
5. The US has 578,000 highway bridges.
6. Corrosion, cracking and other damage can all affect a bridge's performance.
7. The collapse of the Silver Bridge in 1967 resulted in loss of

CEMENT STABILIZED RED EARTH AS BUILDING BLOCK AND STRUCTURAL PAVEMENT LAYER

RAMA SUBBARAO, G.V.[1], PURNA CHANDRA RAO, J.
[1] Associate Professor,
Department of Civil Engineering, S.R.K. Institute of Technology,
Enikepadu-521 108, Vijayawada, Andhra Pradesh, India;
e-mail: gvramasubbarao@gmail.com

[2] Assistant Professor,
Department of Civil Engineering, S.R.K. Institute of Technology,
Enikepadu-521 108, Vijayawada, Andhra Pradesh, India;
e-mail: purnachandu92@gmail.com

ABSTRACT

Red Earth is most commonly used as material in the building and road construction. Many a times, the red earth found in various quarries is found not suitable for construction. Cement of 4 and 8% of dry mass of red earth was added to improve its suitability as building block and structural pavement material. To know the influence of waste plastic fiber on cement stabilized red earth, 1% fiber was also added to the mixture. It is shown that the compressive strength of cement stabilized red earth blocks was improved with seven days of curing. The addition of cement to red earth enhanced soaked CBR value. The soaked CBR value of fiber reinforced cement stabilized red earth was about 1.3 to 1.5 times that of unreinforced cement stabilized red earth.

Keywords: red earth, cement, stabilized earth

REZUMAT

Pământul roșu (*Red Earth*) este utilizat în general în construcția drumurilor și clădirilor. De multe ori, pământul roșu din diferite cariere nu este adecvat pentru construcții. S-a adăugat ciment în procent de 4 și 8% din masa uscată pentru a îmbunătăți calitățile pământului roșu în utilizarea ca blocuri pentru construcții sau ca material pentru pavaje. Pentru a determina influența fibrei din deșeuri de plastic asupra pământului roșu stabilizat cu ciment, s-a adăugat de asemenea un procent de 1% fibre. Se arată că rezistența la compresiune a blocurilor de pământ roșu stabilizate cu ciment s-a îmbunătățit după șapte zile de tratare. Adăugarea de ciment în pământul roșu a crescut valoarea indicelui CBR în stare umedă. Pentru pământul roșu stabilizat cu ciment armat cu fibre, valoarea CBR a fost de 1.3 până la 1.5 ori mai mare decât cea pentru pământul roșu stabilizat cu ciment nearmat.

Cuvinte-cheie: pământ roșu, ciment, pământ stabilizat

1. INTRODUCTION

Red Earth also called *Murrum / Moorum* is formed in the tropics through the weathering process that favors the formation of iron, aluminum, manganese and titanium oxides. Iron and aluminum oxides are prominent in Red Earth, and with the seasonal fluctuation of the water table, these oxides result in the reddish-brown color. Red Earth was found in the southern parts of India where this soft, moist soil was cut into blocks of brick size and then dried in the sun. The blocks became irreversibly hard by drying and were used as building bricks. Red Earths are widely distributed throughout the world in the regions with high rainfall, but especially in the inter-tropical regions of Africa, Australia, India, South-East Asia and South America, where they generally occur just below the surface of grasslands or forest clearings [1]. Red Earth is a low grade marginal material for road construction and has generally low bearing capacity and high water absorption value in comparison to conventional aggregates [2]. Red Earth possesses all bad qualities of black cotton soil such as water absorption, softening,

CEMENT STABILIZED RED EARTH AS
BUILDING BLOCK AND STRUCTURAL PAVEMENT LAYER

RAMA SUBBARAO, G.V.[1], PURNA CHANDRA RAO, J.

[1] Associate Professor,
Department of Civil Engineering, S.R.K. Institute of Technology,
Enikepadu-521 108, Vijayawada, Andhra Pradesh, India;
e-mail: gvramasubbarao@gmail.com

[2] Assistant Professor,
Department of Civil Engineering, S.R.K. Institute of Technology,
Enikepadu-521 108, Vijayawada, Andhra Pradesh, India;
e-mail: purnachandu92@gmail.com

ABSTRACT

Red Earth is most commonly used as material in the building and road construction. Many a times, the red earth found in various quarries is found not suitable for construction. Cement of 4 and 8% of dry mass of red earth was added to improve its suitability as building block and structural pavement material. To know the influence of waste plastic fiber on cement stabilized red earth, 1% fiber was also added to the mixture. It is shown that the compressive strength of cement stabilized red earth blocks was improved with seven days of curing. The addition of cement to red earth enhanced soaked CBR value. The soaked CBR value of fiber reinforced cement stabilized red earth was about 1.3 to 1.5 times that of unreinforced cement stabilized red earth.

Keywords: red earth, cement, stabilized earth

REZUMAT

Pământul roşu (*Red Earth*) este utilizat în general în construcţia drumurilor şi clădirilor. De multe ori, pământul roşu din diferite cariere nu este adecvat pentru construcţii. S-a adăugat ciment în procent de 4 şi 8% din masa uscată pentru a îmbunătăţi calităţile pământului roşu în utilizarea ca blocuri pentru construcţii sau ca material pentru pavaje. Pentru a determina influenţa fibrei din deşeuri de plastic asupra pământului roşu stabilizat cu ciment, s-a adăugat de asemenea un procent de 1% fibre. Se arată că rezistenţa la compresiune a blocurilor de pământ roşu stabilizate cu ciment s-a îmbunătăţit după şapte zile de tratare. Adăugarea de ciment în pământul roşu a crescut valoarea indicelui CBR în stare umedă. Pentru pământul roşu stabilizat cu ciment armat cu fibre, valoarea CBR a fost de 1.3 până la 1.5 ori mai mare decât cea pentru pământul roşu stabilizat cu ciment nearmat.

Cuvinte-cheie: pământ roşu, ciment, pământ stabilizat

1. INTRODUCTION

Red Earth also called *Murrum / Moorum* is formed in the tropics through the weathering process that favors the formation of iron, aluminum, manganese and titanium oxides. Iron and aluminum oxides are prominent in Red Earth, and with the seasonal fluctuation of the water table, these oxides result in the reddish-brown color. Red Earth was found in the southern parts of India where this soft, moist soil was cut into blocks of brick size and then dried in the sun. The blocks became irreversibly hard by drying and were used as building bricks. Red Earths are widely distributed throughout the world in the regions with high rainfall, but especially in the inter-tropical regions of Africa, Australia, India, South-East Asia and South America, where they generally occur just below the surface of grasslands or forest clearings [1]. Red Earth is a low grade marginal material for road construction and has generally low bearing capacity and high water absorption value in comparison to conventional aggregates [2]. Red Earth possesses all bad qualities of black cotton soil such as water absorption, softening,

Suitability of Groundwater Quality for Irrigation in Sarada River Basin Vishakhapatnam District, Andhra Pradesh

M. SUJATHA[1], B.V.T. VASANTHA RAO[2], T.SATYANARAYANA[3]
[1]Koneru Lakshmaiah University, Vaddeswaram, Guntur District, Andhra Pradesh, India
[2]Prasad V. Potluri Siddhartha Institute of Technology, Kanuru, Andhra Pradesh, India
[3]SRK Institute of Engineering and Technology Enikepadu, Andhra Pradesh, India
Email: sujatha7klu@gmail.com

Abstract: The Present study was conducted to evaluate the suitability of groundwater quality for irrigation purpose in various sub – basins of Sarada River Basin in Visakhapatnam district of Andhra Pradesh. For this purpose the groundwater samples have been collected and analyzed for physico – chemical parameters in the laboratory. The analytical data shows that the sodium and chloride are the dominant cations and anions respectively in groundwater of the basin. The total dissolved solids and electrical conductivity exceeds the permissible limits at most of the locations of southern part of the basin due to increase in ionic concentrations. Based on the Sodium Absorption Ratio (SAR) and Residual Sodium Carbonate (RSC), it is observed that the groundwater ranges from excellent to good quality in most of the location in the basin and can be used for irrigation without any hazard. However, the high SAR and RSC values at few locations restrict the suitability of groundwater for irrigation purpose.

Keywords: SRB, Groundwater Quality, SAR and RSC

Introduction:

Water is one of the most abundantly available substances in nature and form about 75% of the earth's surface. A very large section of the population in urban and rural regions of India is using groundwater for human consumption. Agriculture and industries consume large quantities of water for their purposes and discharge their effluents on the adjoining areas, without pre-treatment which results groundwater pollution.

Irrigation, the world's largest water use essential for the plant growth and ensures regular crops by supplying good quality of water. The standards of irrigation water depend on the chemical characteristics along with other factors like the nature of soil and soil texture and rock types. But due to higher degree of minerals present in soils and rocks, the quality of groundwater may vary from place to place. In addition to the above, rapid population growth, increasing living standards, untreated municipal and industrial waste water applications, fertilizers and pesticides and landfill areas are the potential sources of groundwater pollution. Salinity occurs in the coastal aquifers, where sea water moves inland, if groundwater levels declines. Salinity fluctuates by the influence of several factors such as precipitation, over exploitation of fresh groundwater, tidal waves and deforestation. It has been observed that the quality of groundwater is just as important as its quantity. Since quality of public health depends to a great extent on the quality of drinking water, the parameters pertain to the waters are to be monitored systematically.

Berbi (1991), has studied the quality of groundwater of Sangur district of Punjab, to assess the groundwater suitability for the irrigation. Based on the Electrical Conductivity (EC) and Residual Sodium Carbonate (RSC), the groundwater samples were grouped into different categories for preparing water quality map of the study area.

Guruprasad (2003), has studied the physico-chemical and bacteriological analysis of groundwater of Guntur district of Andhra Pradesh. The results revealed that unscientific storage and usage of manures has increased the organic matter in the groundwater.

Study Area:

The Present Sarada River Basin (SRB) area is situated between $82^0\ 45^{'}\ 0^{''}$ N to $82^0\ 56^{'}\ 16^{'}$ N longitude and $17^0\ 40^{'}\ 48^{''}$ E to $17^0\ 50^{'}\ 44^{''}$ E latitude of Vishakhapatnam district, Andhra Pradesh. The SRB originates in the Madugula Konda and flows through the Narasipatnam plain and Visakhapatnam coast, which are parts of the Eastern Ghats.The total area of the basin is 2590 sq.km with dry and hot climate from March to June. The average rainfall of the study area is about 1000 mm. There are two sugar factories on the River Sarada, one at Govada and the other at Tummapala. "Jaggery" is the biggest cottage industry of Anakapalli town in the Sarada River Basin area. The geological formations in the river basin consists of Khondalite group of rocks (65%), Granite gneisses (20%), Charnockites (10%) and Quartzites (5%) of Achaean age. The soil groups of the study area are loamy soils, clayey soils and red soils. For the purpose of the present study, the river basin has been divided into six sub-basins namely [1]Upper Sarada, [2]Bodderu River,[3]Tacheru and Pedderu Rivers,[4]Vedulla Gedda ,[5]Mamidivaka Gedda and [6]Lower Sarada River Basin along with sampling locations (Fig.1) and list of sampling locations with groundwater levels are given in Table- 1.

PRINCIPAL
SRK INSTITUTE OF TECHNOLOGY
ENIKEPADU. VIJAYAWADA

IJRSSET

Dynamic Grouping Methods for Multi-View Clustering

S. Suresh Babu[#1], G. Varaprasad Rao[#2]

#1SE, Nova College of Engineering & Technology, Vegavaram, Jangareddy Gudem,
#2Msc, Mphil, M-Tech, Associate Professor, Nova College of Engineering & Technology,
Vegavaram. Jangareddy Gudem.

Abstract: *Resemblance between a couple of articles could be portrayed either expressly or most likely. In this paper, we present a novel multi-perspective based similitude measure and two related pressing systems. The genuine refinement between a common difference/closeness measure and our own particular specific is that the past uses basically a solitary perspective, which is the root, while the late uses different varying perspectives, which are things recognized to not be in the same get-together with the two articles being measured. Utilizing different perspectives, more instructive assessment of similitude could be fulfilled. A novel multi-perspective based resemblance measure and two related social event calendars are proposed. The rule capability of the novel schema from the current one is that it utilizes basically single perspective point for social affair also where as in Multi-Viewpoint Based Similarity Measure utilizes different arranged perspectives, which are things and are obliged to not be in the same get-together with two articles being measured. Utilizing different perspectives, all the all the more enlightening examination of likeness could be attained. The two articles to be measured must be in the same social affair, while the focuses from where to make this estimation must be outside of the bunch. This is called as Multi-viewpoint based Similarity, or MVS. In point of view of this novel structure two measure points of confinement are proposed for report packaging. We separated this grouping figuring and different measures to attest the execution of multi-viewpoint bunching.*

Index Terms: *Multi-View Clustering, Clustering, Single representation.*

1. INTRODUCTION

Gathering is a champion amongst the most interesting and basic subjects in data mining. The purpose of packing is to find inalienable structures in data, and orchestrate them into genuine subgroups for further study and examination. There have been various gathering figurings disseminated reliably. They may be proposed for greatly distinctive investigation fields, and made using totally different systems and strategies.
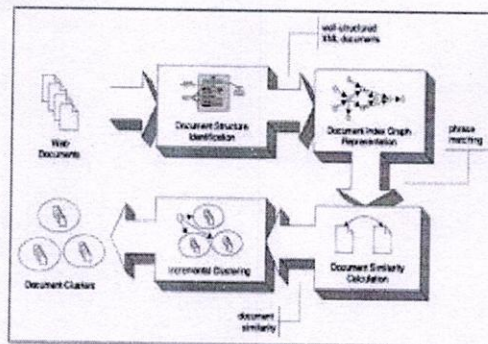

Figure 1. *Data clustering analysis*

It is the habitually utilized allotted bunching consider a part of practice. A trade late investigative exchange communicates that k-means is the most loved include that specialists the related fields decide to utilize. Unnecessary to say, k-proposes has more than a couple of key is purposes of enthusiasm, case in point, affectability to acquaintance and with gathering size, and its execution may be more shocking than other state-of-the-symbolization reckonings in different spaces. Despite that, its effectiveness, understandability and flexibility are the purposes for its colossal qualification. An estimation without barely lifting a finger of usage in the lion's offer of utilization circumstances could be alluring over bound together with better execution in a few cases however constrained use due to

XML Based Non Redundant Distributed Question Bank Generation

[1]V.D.V.Naga Lakshmi,[2]CH.Anupama' [3]D.Haritha

Dept of CSE, S.R.K.InstituteOf Technology,
Enikepadu, Krishna dist, AP, India

Abstract - The number of institutions affiliated to a university increasing enormously these days, thus demands the preparation of highly distributed, fast, reliable, secured and confidential question papers. Traditional way of question paper generation is time consuming, less efficient and less transparent. This paper aims at an automated question paper preparation in large scale distributed question bank environment. For maintaining security and confidentiality instead of a single faculty preparing the whole question paper, this system allows many faculties to prepare the question papers based on a predefined syllabus copy. From the distributed question bank the questions must be intelligently or randomly selected such that it contains no repetitive questions.Similarly from the question bank we need to prepare question paper based on the changes in the syllabus. In these applicationsquestion classification plays a major role and a new method is proposed in this paper. This method is based on XML based approach and is to augment the questions with syntactic and semantic analysis knowledge from the predefined syllabus.

Keywords- Question classification, Stop words removal, Question Papers, Question bank Generation, XML tree.

I INTRODUCTION

Examinations are important activities organized by educational institutions to evaluate student performance.With the increasing number of educational institutions and hence the assessment tests, the demand for automated and dynamic content generation systems is ever increasing. The automated content generation systems are more advantageous over conventional methods of manually generating assessment tests, as they are less error prone, secure and offer faster processing capabilities. The number of institutions affiliated to a university increasing enormously these days, thus demands the preparation of highly distributed, secured and confidential question papers. The Distributed Question Bank contains a pool of questions given by many experts related to a particular domain. If a common question paper is to be given to all the students of the institutions affiliated to a university, the administrative staff can use this question bank to automatically generate the question paper comprising of random selected questions with no repetition. Automatic question paper generation refers to extraction of the questions are extracted from the question bank automatically and a question paper that can meet the requirements of question types, difficulty levels and score distribution is constituted. As this kind of generation of the question paper takes inputs from all the experts, we can expect the equal weighted, transparent, distributed and confidential paper. Even when the syllabus of a subject changes, the question bank can be modified to a little extent and can be still used to generate the question paper according to the new syllabus. While generating the question paper, the questions must be covered from the entire syllabus and also based on the weight-age defined by the predefined rules.Two kinds of scenarios exist in these applications. First is while uploading the question paper itself the faculty categorizes the questions into different categories. The system has to identify similar questions and duplicate questions are to be eliminated from each category and based on rules defined manually, the question paper containing random questions is to be generated. In the second scenario all the questions available in the question bank can be classified into different categories based on the prior information given to the system in the form of syllabus. From each category the duplicate questions are to be identified and are to be eliminated and then based on the predefined rules question paper is to be generated.

The paper is structured as follows. Section 2 gives the overview of related work. Section 3 describes the system design methodology used to generate distinct questions in detail. It also describesquestion paper, syllabus samples that we use for our experiments and their keyword annotations. This section also demonstrates how the keyword annotations help in automatic duplicate question identification and removal. It explains in detail how we find semantically relatedquestions. In section 4, the results and discussions are given. Section 5 is the conclusion of thepaper.

II.RELATED WORK

[1] Dan Liu suggested adopting group intelligent searching method-ant colony algorithm in automatic test paper generation. First, they built mathematical model of constraints according to the requirements of test papers, and by using the ant colony algorithm, the optimal solution of grouping was obtained.The shuffling algorithm in an Automatic Generator Question paper System (GQS) as a randomization technique for organizing sets of exam paper is used by Jamail& Abu BakarMd Sultan[8]. The results indicate shuffling algorithm could be used to overcome randomization issue for GQS. In the field of Automatic Question Generation (AQG), most systems ([5]Heilman& Smith 2009;[9]Rus, Cai, &Graesser, 2007; [10]Wolfe, 1976) focus on the text-to-question task where a set ofcontent-related questions are generated based on a given

International Journal of
Science Engineering and Advance Technology
IJSEAT

Dissecting Malicious Word, PDF Documents

1K.Tanuja, 2CH.Praneeth,3Dr D.Haritha

1,2,3 Dept of **C.S.E**, S.R.K. Institute Of Technology, Enikepadu, Krishna dist, AP, India

Abstract : Internet and computers are now a part of our daily routine life. With the development of network and information technology, E-mail has became increasingly popular and the society's indispensable need. However, virus spreading via the E-mail is also increasing at an enormous rate. The E-mail attachment such as PDF Document, Microsoft Word Document, EXE program can spread viruses from one computer to another computer. This paper describes and analyses the various forms of the E-mail viruses via the Microsoft Word Documents and the PDF Documents. We describe the methodology to detect such E-mail viruses using tools such as OfficeMalscanner for Word Documents and PDF stream Dumper for PDF Documents.

1. Introduction

With the extensive use of computers, more and more people use E-mail for communication and hence paving the way for the spreading of virus through e-mail. There are various types of malware such as Worms, Trojans and malicious code. These viruses have a strong impact on the system, like, destroying data on the disk, make the computer or network running slowly, destroying the video display screen[1]. An E-mail virus is a destructive computer program and is embedded in the text by malicious code or attachments and then exploiting people's curiosity to open e-mail. An example of the E-mail virus is "I love you". This virus makes people to open the attachment with "I love you" as the subject, and then the receiver computer will be infected by the malicious code. Once the computer has been infected, this virus will forward the E-mail with the virus to the receiver's address list. Another example is the "Melissa" virus in 1999. The virus sent the virus document as an e-mail message to top 50 people in the receiver's address book. This virus contains the friendly message and the sender's name. It also infects all the Word documents that are opened subsequently on the receiver's machine [3].

A variety of viruses can be spread through the E-mail attachment. It contains a piece of code in an attachment document, for example, PDF documents, Microsoft Word documents and .EXE programs. This paper begins with a description and extends to the analysis of viruses in the attachments of the E-mail[2]. Section 2 describes structure of

the Microsoft Word Document and its vulnerabilities. Section 3 describes PDF Document structure. Section 4 describes methodology to detect viruses affected Microsoft Word and PDF Documents. This Section also explores various tools available for detection of such infected files.

2. Microsoft Word Document

Microsoft Word is a word processor developed by Microsoft and can be used to type letters, reports, and other documents. It facilitates desktop publishing. The vulnerability in word document file is the presence of Macros. Generally, Macros are used for creating shortcuts to tasks performing repeatedly. Attackers make use of this feature and infect the Macros present in a document. When a word processing or spreadsheet document containing infected virus is opened, the Macro virus gets activated and infects the Normal template (Normal.dot)-a general purpose file that stores default document formatting settings. Every document opened with Word Processor refers to the Normal template, and hence gets infected with the Macro virus. Since this virus attaches itself to documents, the infection can spread if such documents are opened on other computers. These documents spread through mails by attackers [4].

In the past five years, Macro malware could be considered practically extinct. A resurgence of malicious VBA Macros has been observed – this time, not only self-replicating viruses, but simple downloader Trojan codes [3].

Macro viruses can use the VBA *SHELL* command or utilize the operating system's kernel API to run any external command they want. The VBA *KILL* command can be used to delete files. Macro viruses modify registries, use E-mail to forward copies of itself to others, look for passwords, copy documents, and infect other programs. Macro viruses can do a lot of different damage in a lot of different ways [3].

2.1 Vulnerability in the MS-WORD in the form of Macro code:

The macro code, designed for automatic execution on opening of a Word Document, has the following structure (the order in which the individual functions appear and the name of the main function varies in the different variants):

```
Sub Auto_Open()
  main_code()
```

International Journal of
Science Engineering and Advance Technology

IJSEAT

Dissecting Malicious Word, PDF Documents

1K.Tanuja, 2CH.Praneeth,3Dr D.Haritha

1,2,3 Dept of **C.S.E**, S.R.K. Institute Of Technology, Enikepadu, Krishna dist, AP, India

Abstract : Internet and computers are now a part of our daily routine life. With the development of network and information technology, E-mail has became increasingly popular and the society's indispensable need. However, virus spreading via the E-mail is also increasing at an enormous rate. The E-mail attachment such as PDF Document, Microsoft Word Document, EXE program can spread viruses from one computer to another computer. This paper describes and analyses the various forms of the E-mail viruses via the Microsoft Word Documents and the PDF Documents. We describe the methodology to detect such E-mail viruses using tools such as OfficeMalscanner for Word Documents and PDF stream Dumper for PDF Documents.

1. Introduction

With the extensive use of computers, more and more people use E-mail for communication and hence paving the way for the spreading of virus through e-mail. There are various types of malware such as Worms, Trojans and malicious code. These viruses have a strong impact on the system, like, destroying data on the disk, make the computer or network running slowly, destroying the video display screen[1]. An E-mail virus is a destructive computer program and is embedded in the text by malicious code or attachments and then exploiting people's curiosity to open e-mail. An example of the E-mail virus is "I love you". This virus makes people to open the attachment with "I love you" as the subject, and then the receiver computer will be infected by the malicious code. Once the computer has been infected, this virus will forward the E-mail with the virus to the receiver's address list. Another example is the "Melissa" virus in 1999. The virus sent the virus document as an e-mail message to top 50 people in the receiver's address book. This virus contains the friendly message and the sender's name. It also infects all the Word documents that are opened subsequently on the receiver's machine [3].

A variety of viruses can be spread through the E-mail attachment. It contains a piece of code in an attachment document, for example, PDF documents, Microsoft Word documents and .EXE programs. This paper begins with a description and extends to the analysis of viruses in the attachments of the E-mail[2]. Section 2 describes structure of the Microsoft Word Document and its vulnerabilities. Section 3 describes PDF Document structure. Section 4 describes methodology to detect viruses affected Microsoft Word and PDF Documents. This Section also explores various tools available for detection of such infected files.

2. Microsoft Word Document

Microsoft Word is a word processor developed by Microsoft and can be used to type letters, reports, and other documents. It facilitates desktop publishing. The vulnerability in word document file is the presence of Macros. Generally, Macros are used for creating shortcuts to tasks performing repeatedly. Attackers make use of this feature and infect the Macros present in a document. When a word processing or spreadsheet document containing infected virus is opened, the Macro virus gets activated and infects the Normal template (Normal.dot)-a general purpose file that stores default document formatting settings. Every document opened with Word Processor refers to the Normal template, and hence gets infected with the Macro virus. Since this virus attaches itself to documents, the infection can spread if such documents are opened on other computers. These documents spread through mails by attackers [4].

In the past five years, Macro malware could be considered practically extinct. A resurgence of malicious VBA Macros has been observed – this time, not only self-replicating viruses, but simple downloader Trojan codes [3].

Macro viruses can use the VBA *SHELL* command or utilize the operating system's kernel API to run any external command they want. The VBA *KILL* command can be used to delete files. Macro viruses modify registries, use E-mail to forward copies of itself to others, look for passwords, copy documents, and infect other programs. Macro viruses can do a lot of different damage in a lot of different ways [3].

2.1 Vulnerability in the MS-WORD in the form of Macro code:

The macro code, designed for automatic execution on opening of a Word Document, has the following structure (the order in which the individual functions appear and the name of the main function varies in the different variants):

```
Sub Auto_Open()
 main_code()
```

THE ANALYZING AND TECHNIQUES OF THE ANTI-PHISHING TECHNOLOGY

BY

S.SURESH BABU(sunkarasuresh9@gmail.com)

Lecturer COMPUTER DEPT, K B N Collage Vijayawada,

Andhra Pradesh, India.

Abstract

Phishing is an attack that deals with social engineering methodology to illegally acquire and use someone else's data on behalf of legitimate website for own benefit (e.g. Steal of user's password and credit card details during online communication). It is affecting all the major sectors of industry day by day with a lot of misuse of user credentials. To protect users against phishing, various anti-phishing techniques have been proposed that follows different strategies like client side and server side protection. In this paper we have studied phishing in detail (including attack process and classification of phishing attack) and reviewed some of the existing anti- phishing techniques along with their advantages and disadvantages.

Keywords- Anti-phishing, Pharming, Phishing, Mutual authentication.

SRK INSTITUTE OF TECHNOLOGY
ENIKEPADU, VIJAYAWADA
PRINCIPAL

Segmentation of MR images for Tumor extraction by using clustering algorithms

Shaik Salma Begum[1], T.Venkata Mohana Rao[2], P.Nageswara Rao[3],G.Srikanth[4]

[1.] *Assistant Professor, Dept. Computer Science & Engineering, Gudlavalleru Engineering College*

[2,3,4] *Assistant Professor, Dept. Computer Science & Engineering, SRK Institute of Technology*

Abstract-Segmentation of the images is often required as a preliminary and indispensable stage in the computer aided medical image process particularly during the clinical analysis of magnetic resonance (MR) brain image. K-means, Fuzzy c-means (FCM) clustering algorithm has been used in medical image segmentations, but the disadvantage of the k-means algorithm is weak pixel assignment could occur if the pixel with the equal minimum Euclidean distance to two or more adjacent cluster and it may be assigned to the higher variance cluster leading to dead center problems .To overcome that problem, the soft membership based called the Fuzzy c-means(FCM) clustering algorithm is proposed .Fuzzy clustering using fuzzy c-means (FCM) algorithm proved to be superior over the other clustering approaches in terms of segmentation efficiency. But the disadvantage of the FCM algorithm is the large computational required for convergence and it is sensitive to noise because if not taking into account the spatial information. To overcome the above problem a modified FCM algorithm, for MRI brain image segmentation is presented in this paper. A comparative feature vector space is used for the segmentation technique. Comparative analysis in terms if segmentation efficiency and convergence rate is performed between the conventational FCM and the modified FCM. Experimental results show prior results for the modified FCM algorithm in terms of the performance measure.

Index terms-Clustering, MR brain tumor, k-means, Fuzzy C-means, modified FCM, image segmentation.

1. INTRODUCTION:

Segmentation of image plays a vital role in the field of biomedical applications. The technique of segmentation is widely used by the radiologists to segment the input medical image into meaningful regions. The various applications of this technique is to detect the tumor region by segmenting the abnormal MR input image. The size of the tumor region can be tracked using these techniques which aid the radiologists in treatment planning [1] the use of data compression technique without primitive techniques are based on manual segmentation which a time is consuming process besides being susceptible to human errors. Several automated techniques have been developed which removes the disadvantages of manual segmentation.

Clustering is the one of the used image segmentation techniques. Which divide the patterns in such a way that samples of the equal group are more similar to one another than samples belonging to various groups [2]. There has been considerable interest recently in the use of fuzzy clustering methods, which gives more information from the methods, which retain more information from the original image than hard clustering methods. Fuzzy C-means algorithm is preferred because of additional flexibility which allows pixels to belong to multiple classes with varying degrees of membership. But the major operational complaint is that the FCM technique consumes more time

[3]. Several changes have been done on the present network to improve the performance.

Fuzzy c-means (FCM) clustering algorithm, an unsupervised clustering technique, has been successfully used for segmentation of image [18, 19]. Compared with hard c-means algorithm [20], FCM can preserve large information from the original image. The pixels on an image are highly correlated, i.e. the pixels in the immediate neighborhood possess nearly the equal feature data. Therefore, the spatial relationship of neighboring pixels is an important characteristic that can be of great aid in segmentation of images. However, the basic FCM does not take into account spatial information; this makes it very sensitive to noise.

In this work, the FCM algorithm is implemented using the data compression technique without including the weight factor in the cluster center updation criterion which further speeds up the process besides yielding considerable segmentation efficiency. The modified FCM algorithm is used for clustering abnormal MR brain images from four classes namely metastase, meningioma, glioma and astrocytoma. Textural features like correlation, contrast and entropy are extracted from the images and used for the clustering algorithm. The segmented outputs are analyzed based on the segmentation efficiency and convergence rate .A comparative analysis is performed with the conventional FCM algorithm to show the superior nature in terms of convergence rate. Experimental results show promising results for the modified FCM algorithm.

2. PROPOSED METHODOLOGY:

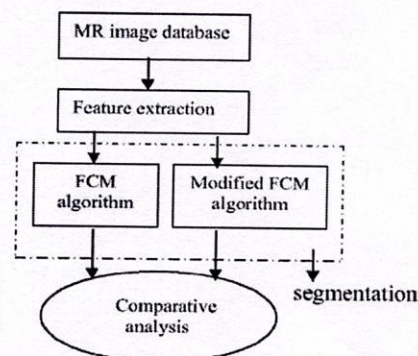The technique for MR brain tumor image segmentation is shown in Fig 1.

Fig 1: Proposed methodology

Modified Genetic Algorithm for Channel Allocation Problem

[1] S.L.V.S.Jyothi,[2] Dr. P. Rajesh Kumar PhD(IIT-M), [3] Dr.S.Sri Gowri
[1] Dept. of ECE, SRIIT, Rampally, Telangana,India, jyothisamanthula@gmail.com
[2] HOD, Dept. of ECE, PVP SIT, Poranki, Andhrapardesh, India, rkpanakala@gmail.com
[3] HOD, Dept. of ECE, SRKIT, Enekepadu, Andhrapradesh, India, sajjasrigowri@yahoo.com

ABSTRACT

As the available frequency spectrum is limited and as the number of radio frequency users has increased exponentially, the problem of channel allocation has emerged to be an important challenge in wireless communications. Various channel allocation strategies have been conceived to thwart the co-channel and adjacent channel interferences.

Genetic algorithms have been already used to handle the Channel Assignment Problem (CAP). A modified version of a genetic algorithm is proposed in this article by adding an extra parameter like dynamic population size, aging factor for both fixed channel allocation as well as a dynamic channel allocation. The simulation results corroborate the fact that the modified genetic algorithm is more effective even in terms of the cost function.

Keywords— genetic algorithms, dynamic population size, aging factor, channel assignment, wireless network.

1. INTRODUCTION

Wireless communications have become an integral part of our daily life, hence the frequency assignment challenge has evolved significantly as the frequency band is quite limited and the flux of the users is increasing day by day. This work has been mainly focused on an efficient frequency assignment method allocation based on Space Division Multiplexing (SDM). SDM is partitioned into hexagonal cells. Frequency reuse is considered keeping in mind the distance criteria which lead to the coverage of large areas with limited bandwidth. This task is termed Channel Allocation Problem (CAP) which is analyzed in [1] -[2], [3] -[4].

In CAP, a cellular network is hypothized to contain '*n*' arbitrary cells along with the assumption that channels are structured evenly in terms of radio frequency. The channels are associated consecutively with positive numbers. The spaces between the numbers corresponding to the channels depict the frequency separation for satisfying the constraints related to interference. During the assignment of the channels to the users of various cells, following three constraints should be fulfilled viz.

Co-site Constraint (CSC): Two channels can be used in the same cell provided they are separated minimally in terms of frequency.

Adjacent Channel Constraint (ACC): Adjacent channels cannot be assigned to two cells unless there is a minimum distance between the channels.

Co-Channel Constraint (CCC): The same channel cannot be allocated at the same time to two cells unless there is a minimum geographical separation between them which is termed as reuse distance.

The impact of interference is substantially low only if the three conditions mentioned above are fulfilled and these constraints are called as hardware constraints.

The soft constraints are

Packing condition: It is a common practice that a channel used in one cell should also be reused in another cell while respecting the minimum reuse distance logic for having a lesser probability of call blocking. This is important as the number of channels available is limited.

Resonance: It is equally important to make sure that the channels assigned to the cells that make use of the same reuse scheme are the same.

Reassignment: During a call, the number of channel reassignments performed should be minimized so as to lower call blocking.

Hence, CAP is solved by considering hard constraints, though soft constraints can be ignored to a certain extent. The soft constraints facilitate the maximum usage of the resources by ameliorating the service quality [13, 14].

The channel allocation issue can be addressed in two ways: 1. Fixed Channel Allocation (FCA), a process wherein every cell permanently allocated channels and 2. Dynamic Channel Allocation (DCA), wherein the channel allocation is dynamic depending on the traffic load as the name suggests. In any of the above two cases, the issue of channel allocation satisfying the above said conditions is called to NP-complete [5], signifying that more is the problem size, more is the calculation time. Different heuristic approaches like GA [1], Artificial Neural-Networks [6], Simulated Annealing [7], and Tabu Search [2] are reported to thwart this problem.

In this paper modified GA is used to fight CAP for FCA as well as DCA.

The channel assignment is determined in two cases.

MRCET-UGC AUTONOMOUS

SRK Institute of Technology
ENIKEPADU, VIJAYAWADA-521 108.

Secret Data Hiding in Encrypted Compressed Video Bit Streams For Private Info Protection

T. Prasanthi[1], A. Vanaja[2], Ch. Jayalakshmi[3]

[1]PG Scholar, Dept of ECE, SRKIT, India, Email: prasanthi.tripura3@gmail.com.
[2]Asst Prof, Dept of ECE, SRKIT, India, Email: arigala.vanaja@gmail.com.
[3]Asst Prof, Dept of ECE, VRSEC, India, Email: jayalakshmi.chandra@gmail.com.

Abstract: This report represents the encoding of compressed video bit streams and concealing private data like bit stream info to safeguard videos throughout transmission or cloud storage. Digital video generally has to be kept and processed in an encrypted format to keep up security and seclusion. Information concealing approach is important to perform in these encrypted videos for the aim of content notation and change of state detection. In this manner, information, concealing in the encrypted domain without decipherment, preserves the confidentiality of the content. Additionally, it's a lot of economical things to decipher information, followed by concealing and re-encryption. Here, Encrypted information, concealing within the encrypted version of the H.264/CAVLC video stream is approached, which incorporates the subsequent 3 elements, i.e., H.264/CAVLC video encoding, Encrypted information embedding, and information extraction. By analyzing the property of the H.264 codec, the code words of intra prediction modes, the code words of motion vector variations, and therefore the code words of residual coefficients are unit encrypted with bit stream ciphers. So as to adapt to completely different application situations, information extraction will be done either within the encrypted domain or within the decrypted domain. The simulated results show that used ways provide higher performance in terms of computation potency, high information security and video quality once deciphered. The parameters like MSE, PSNR, correlation and SSIM area unit are evaluated to live its potency.

Keywords: H.264 Encrypted Video, Chaos Data Encryption, Bits Substitution in Compressed Bit Streams, Parameter Analysis.

I. INTRODUCTION

Since the increase in the net usage, one in all the foremost necessary factors of knowledge, technology and communication is playing a crucial role to provide security. Cryptography was created as a means for ensuring the privacy of communication and lots of different strategies is developed to cipher and decipher information so as to persist the message secret. Sadly, it's generally not enough to stay the contents of a message secret, it's going to even be necessary to stay the existence of the message secret. Steganography is that the art of secret communication. Its purpose is to hide the terrible presence of communication as critical cryptography whose goal is to create communication unintelligible to those that don't possess the correct keys. Digital pictures, videos, sound files, and different PC files that contain perceptually irrelevant or redundant info is used as "covers" or carriers to cover secret messages. Once embedding a secret message into the cover-image, a supposed stego-image is obtained. It's necessary that the stego-image doesn't contain any simply detectable artifacts because of message embedding. A 3rd party may use such artifacts as a sign that a secret message is a gift. Once this message detection is dependably achieved, the steganographic tool becomes useless. Apparently, the less information is embedded into the cover-image, the smaller the likelihood of introducing detectable artifacts by the embedding method. Another necessary issue is that the alternative of the cover-image. The choice is at the discretion of the one that sends the message. The sender ought to avoid exploitation cover-images that may be simple to research for presence of secret messages. Though computer-generated pattern pictures could seem nearly as good covers due to their quality and irregularity, they're generated by strict settled rules that will be simply profaned by message embedding.

II. PROBLEM STATEMENT

The goals in this paper are: One goal has been to compile AN introduction to the topic of steganography and steganalysis. There exist a variety of studies on numerous algorithms, however complete treatments on a technical level aren't as common. Material from papers, journals, and conference proceedings are applied that best identify the assorted elements. Another goal has been to go looking for algorithms that may be wanting to implement for the detection of steganographic techniques. The third goal is to judge their performance off with a completely different image quality metric. These properties were chosen as a result of they need the best impact on the detection of steganography algorithms. A final goal has been in style and implementing the steganalysis detector in math work.

Native Prediction Based Disctint Enlargement Reversible Watermarking

[1]R.Ramya, [2]Y.Rakesh
[1]M.Tech Student, [2]Assistant Professor
[1,2]Department of Electronics and Communication Engineering,
[1,2]S.R.K Institute of Technology, Vijayawada, India.

Abstract: Watermarking is a method of embedding useful information into a digital work for the purpose of content authentication, broadcast monitoring, copy control etc. In some applications, especiallyin the medical, military and legal domains even the imperceptible distortion introduced by watermarking is not acceptable. This led to the interest in reversible watermarking. Reversible Watermarking provided valuable solution to this problem based on its application scenario. There still exist a large number of problems in the conventional schemes. Here we proposed areversible watermarking method based on native prediction. In native prediction based disctint enlargement based reversible watermarking for each pixel a predictor is computed on a square block. Predictors such as Median edge detector, Gradient adjusted predictor, simple rhombus are used for predicting the edges. Experimental results are provided.

Keywords: Reversible watermarking, Distinct Enlargement, Adaptive Predictors, Native Prediction.

I. Introduction

Nowadays computer networks and multimedia technologies are omnipresent, and the transfer of electronic documents via these networks becomes inevitable. Digital watermarking is an effective copyright protection method. In a watermarking system the primary goal is to achieve a high level of robustness. Generally digital image watermarking has certain requirements; the most important is robustness and invisibility. Some information that the embedded watermarks like (Signature, Logo, ID number, etc) cannot be removed by attacks. Watermarking is widely used for copyright protection, broadcast monitoring and source tracking, etc [1]. In the recent years copyright protection of digital content became a serious problem due to rapid development in technology. Digital watermarking is defined as the process of altering a work, in order to embed information about that work[2]. In simple terms, it is the process of embedding information into a digital image, in a way to remove the digital watermarking in two way of groups spatial domain and frequency domain. As a special subset of fragile watermarking, reversible watermarking has drawn lots of attention recently. Reversible watermark, (which is also called lossless watermark, invertible watermark, erasable watermark), has an additional advantage such that when watermarked content has been detected to be authentic, one can remove the watermark to retrieve the original, UN watermarked content. Such reversibility to get back UN watermarked content is highly desired insensitive imagery, such as military data and medical data. In this paper, we present a reversible watermarking method of digital images. Our method can be applied to digital audio and video as well. Compared with other reversible watermarking methods, our method employs an native prediction based reversible watermarking algorithm. The embedding algorithm starts with a reversible color conversion. Reversible watermark is a special subset of fragile watermark. Like all fragile watermarks, it can be used for digital content

Segmentation of Lung Nodule in Chest CT Using Different Segmentation Technique

G.Priyanka[1] and T.Vishnu Priya[2]

PG Scholar, Department of ECE, S.R.K. Institute of Technology, Vijayawada, India

Assistant Professor, Department of ECE, S.R.K. Institute of Technology, Vijayawada, India

ABSTRACT

Now a day, automatic detection of lung nodules is an important work in medical applications. The automated detection from CT scan imaging is affected due to artifact and skull portion. It is difficult task in detection of skull removal in lung images. In this paper we explain about segmentation of chest CT using different techniques. Segmentation of medical images an important step in various applications such as quantitative analysis and image-guided surgery. The level set method will not give the accurate size and shape of the nodule to get the accurate result we prefer the proposed method in this paper. The proposed method contains three steps. They are preprocessing, edge based contour and modified fuzzy clustering. The skull portion is detection based on dilation and erosion in preprocessing step. It is accurate detection of diseases from chest CT scan images. The second step is edge based contour, it is used in detection of edges of objects as shown in results. Final step is modified fuzzy clustering; it is accurately detection of abnormalities from CT images. The experimental results shows that the detection of abnormality of lung images is accurately and efficiency.

Index Term: - Modified Fuzzy Clustering, Dilate, Erosion And Image Labeling.

1. INTRODUCTION

Lung nodule is inherently serious and life-threatening because of its invasive and infiltrative character in the limited space of the intracranial cavity. The mortality rates due to the lung nodules are continuously increasing [1]. Lung nodules are mainly classified as benign or malignant depending on their growth pattern. Benign tumors are non-cancerous, slow growing and do not spread to the surrounding tissue. Whereas malignant tumors are cancerous, fast growing and invade nearby organs. Accurate classification of lung nodules is important because their clinical behavior, prognosis and therapy differ markedly. Discrimination between benign and malignant tumors is necessary for optimal patient treatment.

The screening tests for the identification of lung nodules require visual examination of MR images of the lung by the radiologist. But visual analysis is time consuming, tedious and subjective. In order to overcome these drawbacks, computer-aided diagnosis (CAD) systems are developed to improve the diagnosis sensitivity by 20–30% when compared with the diagnosis by visual analysis [2]. Content based image retrieval (CBIR) is an important component of CAD system which can assist the radiologist in diagnosing tumors. The MR images of patients taken during the diagnosis of the lung tumor are stored in a medical database known as picture archiving and communication system (PACS) along with the diagnosis and treatment information [3].

When the radiologist is less confident about diagnosis of any lung tumor case, he can query a database of past resolved cases to retrieve images that contain regions with features similar to that of the query image. With the knowledge of disease entities that match with the features of the query image and associated diagnostic information, the radiologist can arrive at a diagnostic decision [4]. Thus, the image retrieval helps the radiologist in making case-based reasoning in diagnosis of lung tumors. Text-based retrieval techniques are now commonly used in PACS. In these systems, keywords from lab reports and associated text from images are used for querying images. Although this approach can offer much flexibility in query formulation, it suffers from several drawbacks such as it is difficult to manually annotate the

Secrecy Outage Analysis of Underlay Cognitive Radio Over Nakagami-Q (Hoyt) Fading Channels

P Harish*, S Sri Gowri**

*M.Tech student, ECE Department, SRK Institute of Technology, Enikepadu, Vijayawada, India
**Prof& Head, ECE Department, SRK Institute of Technology, Enikepadu, Vijayawada, India

Abstract:

An underlay cognitive radio unit over the Nakagami - q fading channel which consists of a source S, a secondary user (SU) and an eavesdropper who wants to eavesdrop the information between S and SU, is studied. The broadcast power of S is simultaneously adjusted according to the channel state information of S-PU link and a given threshold interference of that primary user can permit. A closed form analytical expressions of Secrecy Outage Probability has been derived. The robustness of our analysis models are verified by simulation results.

Index terms: Secrecy Outage Probability, Nakagami-q (Hoyt), Underlay Cognitive radio networks(CRNs)

I. Introduction

Spectrum scarcity and poor spectrum utilization are two contradictory statements that makes to focus public on cognitive radio network, which makes secondary users (SUs) enable to share the frequency band of primary users(PUs). The three different models of cognitive radio networks (CRNs) enable users to share their frequency bands are underlay, overlay, interweave etc. [10]. Among the models that we have discussed the underlay type of strategy is easy to realize, as SUs are needed to just adjust the power of them within the threshold level that PUs can tolerate without experiencing a complex calculation.

The security of CRNs discussed by [2] to [11]. In [2] secrecy capacity for a multi-antenna SU transmitter in the presence of eavesdropper is studied. Reference [3] discusses the secure resource allocation in CRNs for guaranteeing a secrecy rate for PUs. A secure medium access control (MAC) is proposed in [4] for CRNs. Some secure broadcasting in non-CRNs over independent/correlated Rayleigh [5], [6] /log-normal [7], Gaussian fading channels [8]. Reference [9], [10]

studies about the Nakagami-m fading channels, which include special cases like one-sided Gaussian distribution (m=0.5), Rayleigh(m=1) but they didn't mention about the security problems in CRNs. [11] studies the secrecy outage probability (SOP) and the probability of non-zero secrecy capacity (PNSC) of underlay cognitive radio has been derived by using the closed form expressions of both SOP and PNSC. According to the best of my knowledge, SOP over Hoyt distribution has not been investigated.

In this paper, we study the SOP of the underlay cognitive radio unit as shown in fig.1 over Nakagami-q fading channel (Hoyt distribution) and the closed form expression of the Secrecy Outage Probability (SOP) is derived.

II. System Model

We consider the system model same as the [1] but the fading that channel experience is Nakagami-q fading. PU_Tx and PU_Rx are primary user's transmitter and receiver of the underlay cognitive radio networks unit as shown in Fig 1.
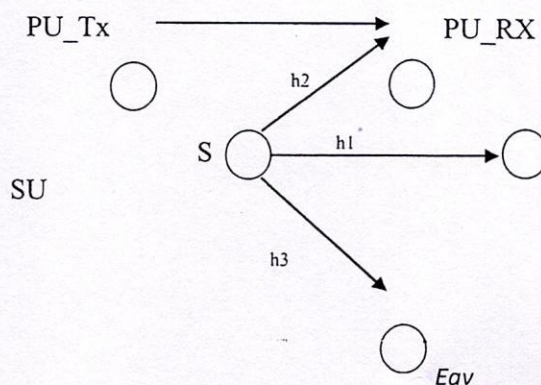

Fig. 1 System model

IJRCCT International Journal of Research in Computer and Communication Technology

Iris Data Hiding, Encoding By Using Huffman Coding DWT, SVD Scheme Authenticated By Multi SVM

A Rajarajeswari*, B Ravi**

*M.Tech pursuing, ECE Department, SRK Institute of Technology, Enikepadu, Vijayawada, India
**Assistant Professor, ECE Department, SRK Institute of Technology, Enikepadu, Vijayawada, India

ABSTRACT

As the technology advances in day to day life, the process of illegal data copies are producing by miscreants with ease. Various techniques are introducing to protect the copy right data from the miscreants. One such technique is digital watermarking, where the data is kept secret using invisible watermarking. In this study, method of watermarking on digital images used to kept copy right data of iris for authentication. The iris biometric system is constructing on the following basis, the iris template is generated through normalisation process or converting the iris image into polar form from spatial form and converted to binary image using xor bit process. Then the watermarking process using SVD and DWT combination to protect the data that is copy right one which is a binary image from various attacks. The extracted iris binary template will under goes MULTI SVM process with RBF kernel function with an accuracy of 98.75%.

INTRODUCTION

The rapid growth in technology in late 20th century brings a lot of variety commercial interests of economic development globally through world wide web (WWW) brings OWNERSHIP right because of copying or replicating the tools.

SYSTEM DESIGN

Image Acquisition

We obtained a secured iris database with password protected from Department of Informatica UBI. For completion the project these have helped on all aspects by providing filtered or low noised images which gives a possible best outcome.

Normalization

Once the iris region is segmented, the next stage is to normalize this part, to enable generation of the iris code and their comparisons. Since variations in the eye, like optical size of the iris, position of pupil in the iris, and the iris orientation change person to person, it is required to normalize the iris image, so that the representation is common to all, with similar dimensions.
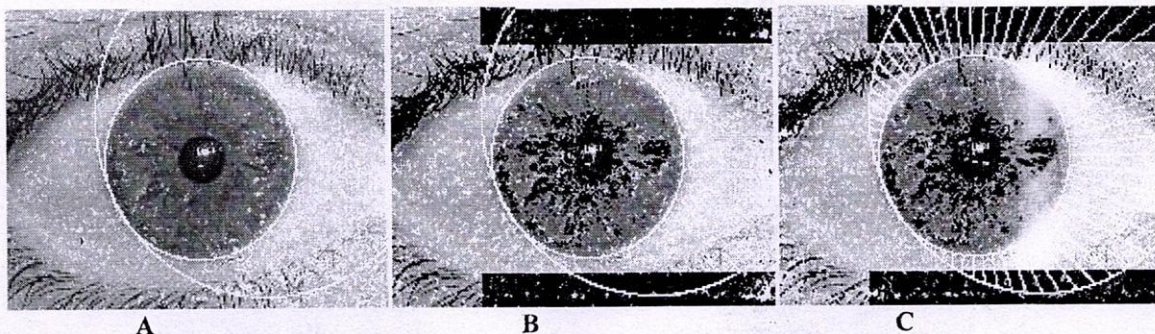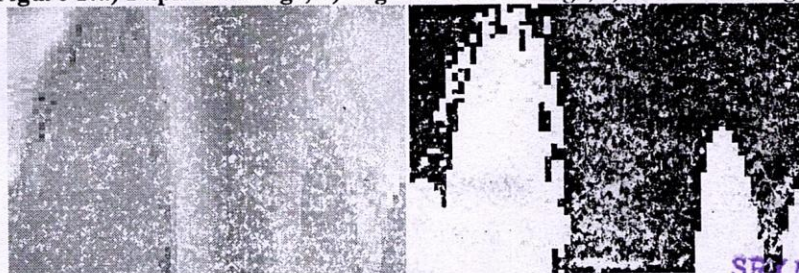

Figure 1:a) Pupil iris image, b) Segmented iris image, c) Noise iris image,

Performance Enhancement of Spectral efficiency and throughput with Distributed Dynamic channel allocation using genetic algorithm

Y.S.V. Raman
Associate Professor
Department of ECE, K.L. University
Vaddeswaram, India
ramanysv@hotmail.com

Dr S. Sri Gowri
Professor
Department of ECE, S.R.K. Institute of
Technology, Vijayawada, India
sajjasrigowri@yahoo.com

Dr B. Prabhakara Rao
Professor
Department of ECE, JNTUK
Kakinada, India
drbpr@rediffmail.com

ABSTRACT- The efficiency associated with mobile systems will depend on a good channel allocation method. Some sort of genetic algorithm (GA) dependant on distributed dynamic channel allocation model is offered. Mobile service stations (MSS) help to make every one of the channel allocation decision intended for mobile hosts in that cell based on the local information. Proposed model which reuses available channels more efficiently. A reserved pool associated with channels in each and every cell to make the model fault tolerant which allows any mobile or portable to continue communication with its mobile hosts within the absence of adequate channel within the cell. Therefore, the offered GA intended for distributed dynamic channel allocation to reinforce the spectral efficiency along with throughput of the cell network. Simulation results evaluate the performance of the distributed dynamic channel allocation based on genetic algorithm.

Keywords- Spectral efficiency, throughput, distributed dynamic channel allocation, genetic algorithm.

1. INTRODUCTION

An important problem within the operation of the cellular phone method is actually how effectively utilize accessible bandwidth to provide very good services to as many customers as possible. This matter has grown important using the swift growth in the number of cellular telephones. Mobile telephone systems leverage the idea that numerous callers can use any communication channel i.e. a group of frequencies can be employed concurrently in case these types of callers tend to be spaced actually far separated in a way that their message or calls tend not to intervene together. The particular minimal distance at which there is no disturbance is called the channel reuse constraint [2]. In the cellular system, the particular area is usually divided into several regions known as cells. Within each cell there exists a base station that addresses all the cell phone calls made within the cell. The total obtainable

bandwidth is usually divided into a number of channels. Channels must then be allotted to cells and to calls without violating the particular channel reuse constraint. There are lots of methods to do this, most of that are much better than other in terms of how reliably they make channels for available to new calls. If no channel is available for a new the call is usually missing, or maybe impeded, which can be undesirable [1-2]. The Genetic Algorithm (GA), useful for optimization problems, is dependent on the Darwin's idea theory of "survival of the fittest." Individuals, from the population of potential solutions, reproduce as well as solutions are enhanced successively over the number of generations. Not too long ago, the use of GA has captivated the attention regarding researchers of several disciplines (e.g., operation research, economics, social sciences, life sciences, etc.) pertaining to trouble solving [3, 4].

2. SYSTEM MODEL

The model is suggested [5] by utilizing GA based techniques for distributed dynamic channel allocation. The proposed model falls under the resource planning model. With this model, each of the channels is kept within a collection which is known to each cell. Channels are not pre-allocated to any cell except reservation of some channels for handoff calls for real time connections. In the proposed model, a MSS tends to make the channel allocation decision on behalf of the mobile hosts using genetic algorithm. When a mobile host in a cell needs a channel to support a session, if it is unavailable in the cell, it sends a request to the neighboring MSSs to learn accessibility of any free channel [6]. From a rounded of concept exchange together with neigh-boring cells, the channel will be transferred to the particular requesting cell.

Local Variables

Ac is the offered load, N is the number of channels, W is the bandwidth of the channel, c is cluster size and a is area

Improved Orthogonal Space-Time Block Code for Nine Transmit antenna

N.S.Murthy *   Dr.S.Sri Gowri**   Dr.B.Prabhakara Rao***

* Associate Professor, ECE Dept, VR Siddhartha Engg. College,Vijayawada-7,INDIA
** Professor& HOD, ECE Dept, SRK Institute of Technology, Vijayawada, INDIA
*** Professor, ECE Dept, JNTUK, Kakinada, INDIA

Abstract: *Orthogonal designs using Space-time block codes has significant role to achieve maximum code rate, bandwidth efficiency. Alamouti Proposed two transmit antennas diversity Scheme with full code rate. V. Tarokh, H. Jafarkhani, and A. R. Calderbank has proposed three and four transmit antennas with code rates of ¾. Complex orthogonal designs of space-time block codes for five, six, seven and eight transmit antennas with code rates 2/3, 2/3, 5/8, and 5/8[3] were proposed recently. Tarokh, Jafarkhani and Calderbank for nine transmit antennas, which transmits 16 information symbols in 32 timeslots and hence having code rate ½. In this paper we achieved new matrix of Complex orthogonal STBC for Nine Transmit Antenna with code rate of 0.51*

Index Terms – *Diversity, (generalized) complex orthogonal designs, space –time block codes.*

I. COMPLEX ORTHOGONAL DESIGNS

Definition 1: A generalized complex orthogonal design (GCOD) in variables $x_1, x_2, ..., x_k$ is a p × n matrix G such that: the entries of G are complex linear combinations of $x_1, x_2, ..., x_k$ and their complex conjugates $x_1^*, x_2^*, ..., x_k^*$

• $G^H G = D$, where G^H is the complex conjugate and transpose of G, and D is an n×n diagonal matrix with the (i, i) th diagonal element of the form $l_{i,1}|x_1|^2 + l_{i,2}|x_2|^2 + l_{i,3}|x_3|^2 + ... + l_{i,k}|x_k|^2$ where all the coefficients $l_{i,1}, l_{i,2}, l_{i,3}, ..., l_{i,k}$ are strictly positive numbers.

The rate of G is defined as R = k/p. If $G^H G = \left(|x_1|^2 + |x_2|^2 + ... + |x_k|^2\right) I_{nxn}$ Then G is called a complex orthogonal design (COD).

The first space–time block code from complex orthogonal design was proposed in Alamouti [2] for two transmit antennas. It is the following 2 × 2 COD in variables x_1 and x_2

$$G_2 = \begin{pmatrix} x_1 & x_2 \\ -x_2^* & x_1^* \end{pmatrix}$$

Clearly, the rate of G2 achieves the maximum rate 1. For space–time block codes from (generalized) complex orthogonal designs, rate 1 is achievable only for two transmit antennas.

For n = 3 and n = 4 transmit antennas , there are complex orthogonal designs of rate R = ¾[1]for example,

$$G_3 = \begin{pmatrix} x_1 & x_2 & x_3 \\ -x_2^* & x_1^* & 0 \\ x_3^* & 0 & -x_1^* \\ 0 & x_3^* & -x_2^* \end{pmatrix}$$

$$G_4 = \begin{pmatrix} x_1 & x_2 & x_3 & 0 \\ -x_2^* & x_1^* & 0 & x_3 \\ x_3^* & 0 & -x_1^* & x_2 \\ 0 & x_3^* & -x_2^* & -x_1 \end{pmatrix}$$

Space Time Block Codes Using Multiple Transmitting Antennas

Satyanarayana Murthy Nimmagadda[1,*], Sri Gowri Sajja[2], Prabhakara Rao Bhima[3]

[1]ECE Dept, VR Siddhartha Engg. College, Kanuru, Vijayawada, Andhraprdesh
[2]ECE Dept, SRK Institute of Technology, Vijayawada
[3]ECE Dept, I/C Vice Chancellor, JNTUK, Kakinada

Abstract The performance of space – time block codes for transmission over Quasi – static Rayleigh flat fading channels using multiple transmit antennas is considered. Data is prearranged using a space – time block code, which is split in to parallel streams via simultaneously transmitted transmit antennas. The received signal at each receive antenna is a linear superposition of the n transmitted signals perturbed by noise. Maximum likelihood decoding is carried out by dividing the signals transmitted from different antennas. This uses the orthogonal structure of the space-time block code and gives a maximum-likelihood decoding algorithm, which is based only on linear processing at the receiver. The performance of Space Time Block Codes for 1 bit/sec/HZ and 2 bits/sec/HZ using BPSK,QPSK Modulation Schemes for four and eight transmit antennas with code rate of 1/2 and 4/7 is evaluated. By increasing the code rate of the system using four transmit antennas, significant gains are achieved compared to existing system.

Keywords Diversity, (generalized) complex orthogonal designs, Space – time block codes

1. Introduction

The newly emerging technologies in the field of smart antennas have resulted in the development of space time coding techniques. These techniques are much more effective than conventional diversity techniques by employing information coding and signal processing simultaneously both at the transmitter and receiver [1], [2], [3], and [4]. Multiple antennas also introduce antenna diversity (also known as space diversity) into the communication system. The major problem with the receiver diversity is the cost, size and power consumption constraints. For this reason, transmit diversity scheme are very attractive.

Space-time block codes is a transmit diversity scheme with optional receive diversity to accomplish high data rate and to improve the reliability of a wireless channel. Since the pioneer work of Alamouti orthogonal space-time block coding for two transmit antennas (OSTBC) [5] has shown remarkable performance due to their low decoding complexity. According to V. Tarokh, H. Jafarkhani, and A. R. Calderbank when three or four transmit antennas were considered, the maximum symbol transmission rate of the complex OSTBC with the linear processing was 3/4 [6-8]. Due to this drawback Quasi orthogonal space-time

codes relax the orthogo nality constraint of to enable rate-one transmission, at the expense of an increase in decoding complexity. For example, quasi orthogonal codes for four antennas were proposed independently by Jafarkhani [9], C. F. Mecklenbrauker and M. Rupp [10] Tirkkonen - Boariu-Hottinen [11] and Papadias-Foschini [12].

2. Existing GCOD Space Time Block Codes for N = 4 Transmit Antennas

Tarokh, Jafarkhani, and Calderbank [5] Proposed Complex orthogonal designs for four transmit antennas with code rate ½ based on above is given by

$$
G_4 = \begin{pmatrix}
x_1 & x_2 & x_3 & x_4 \\
-x_2 & x_1 & -x_4 & x_3 \\
-x_3 & x_4 & x_1 & -x_2 \\
-x_4 & -x_3 & x_2 & x_1 \\
x_1^* & x_2^* & x_3^* & x_4^* \\
-x_2^* & x_1^* & -x_4^* & x_3^* \\
-x_3^* & x_4^* & x_1^* & -x_2^* \\
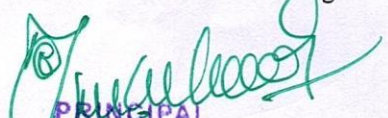-x_4^* & -x_3^* & x_2^* & x_1^*
\end{pmatrix}
$$

An STBC is defined by p * n code matrix, where p represents the number of time intervals for transmitting k symbols, resulting in a code rate of R = k/p. At the receiver to recover symbols Maximum likelihood decoding algorithm is used.

* Corresponding author:
nsmmit@gmail.com (Satyanarayana Murthy Nimmagadda)

NETWORK SELECTION IN HETEROGENEOUS WIRELESS ENVIRONMENT USING DECISION MAKING ALGORITHMS-TOPSIS AND PROMETHEE

[1]KSS ANUPAMA, [2]DR S SRI GOWRI, [2]DR B PRABHAKARA RAO

[1]Associate Professor, Department of Electronics & Instrumentation, VRSEC, AP, INDIA

[2]Professor, Department of Electronics & Communication, SRKIT, AP, INDIA

[3]Vice Chancellor In-charge& Rector, JNTUK Kakinada, AP, INDIA

E-mail: [1]cssanupama@yahoo.co.in, [2]sajjasrigowri@yahoo.com, [3]vcjntuk.drbpr@gmail.com

ABSTRACT

Forthcoming wireless environment is a fusion of numerous networks with diverse technologies deployed by individual operators. In such an environment, innovative network selection methodologies are required not only to provide "always best connected" service to mobile users but also to maximize network operator's revenue. To fulfill such requirements, multiple attributes from each network are to be systematically assessed. Consequently network selection becomes an issue of multiple attribute decision making (MADM). Various MADM algorithms have been proposed for use in network selection decision process. This paper compares the performance of PROMETHEE (Preference Ranking Organization Method for Enrichment Evaluations) an outranking MADM algorithm with TOPSIS (Technique for order of Preference by Similarity to the Ideal Solution (TOPSIS), a classical MADM algorithm in selecting the best network in a heterogeneous wireless environment. It also analyzes the effect of PROMETHEE and TOPSIS algorithms on ranking abnormality and mobile terminal distribution among the networks during handoff. A combination of Analytic Hierarchy Process (AHP) and Entropy method is used to assign weights to the decision criteria. Simulation results show that PROMETHEE algorithm outperforms TOPSIS in network selection decision making.

Keywords: *Network Selection, Handoff Decision, MADM, PROMETHEE, TOPSIS.*

1. INTRODUCTION

In the next generation wireless environment, various wireless (WLAN, WPAN, WLAN, and WIMAX) and cellular networks (GSM, EDGE, UMTS, LTE, GERAN, UTRAN) with diverse technologies coexist to provide any where any time service to the multimode terminal subscriber (MS). In such a heterogeneous environment the MS can achieve seamless mobility by switching its connections from one network to another network through a process called handoff[1]. Switching connections between networks of same technology is called Horizontal Handoff and of different technologies is called Vertical Handoff.

The vertical handoff process is a three step procedure i.e., discovering the networks, handoff decision making and execution. Initially the multimode mobile terminal identifies the networks along with their services, within its vicinity. In the decision phase, the mobile device selects the best network from the available networks for handoff. Then, the execution phase re-routes the connections from the current network to the selected network. This work focuses on the network selection step, which is an important key in maximizing end user satisfaction in heterogeneous wireless environment.

Network selection is the process of identifying the best network from multiple available networks during handoff decision. The decision to select the best network depends on various factors such as, QoS capabilities of the available networks, traffic class requirements, mobile terminal properties and user preferences. Consequently the network selection process depends on a combination of multiple attributes rather than a single parameter.

Since large number of attributes is to be taken into consideration, network selection problem is assessed from the aspect of multi criteria analysis, by applying MADM algorithms. This paper studies the performance of two MADM algorithms, the

REDUCTION OF COMMON MODE VOLTAGE IN PWM RECTIFIER FED MOTOR DRIVES

A.SakthiRubini

M.E, Power Electronics and Drives
PA College of Engineering and Technology,
Pollachi, Tamilnadu, India.

M. Sathiskumar

HOD- Department of PG-Electrical Sciences
PA College of Engineering and Technology,
Pollachi, Tamilnadu, India.

Abstract— **Modern day switching devices such as IGBTs have fast switching nature leading to increase in Common Mode voltage and its adverse effects. Hence this paper mainly aims at reducing the magnitude of the Common Mode voltage. A Common-Mode (CM) filter based on different methods including LCL filter topology is proposed hereby. Firstly a CM filter makes use of the components of a line to line LCL filter, which is modified to address the CM voltage with minimal additional components. This leads to a compact filtering solution. Different variants of the filter topology are evaluated to establish the effectiveness of the proposed circuit. Secondly multi level inverter topology is examined to analyze the reduction in CM voltage as the number of levels increases. Further, addition of fourth leg to the bridge of a three phase inverter for the purpose of eliminating the CM voltage to ground is discussed. Hence CM voltage measurement on the motor side with the combination of PWM rectifier with LCL filter and fourth leg inverter topology is also presented. These results validate the effectiveness of the filter. Hence a solution for reducing the CM voltage which causes various several problems such as increase in shaft voltage and bearing current is discussed in this paper.**

Index Terms— *Common mode voltage, LCL filter, Active front end rectifiers, parasitic capacitance, dv/dt filter, four leg inverter.*

INTRODUCTION

Common Mode Voltage due to pulse width modulation in power converters introduces numerous problems in electrical system. Modern switching devices such as IGBT have fast turn-ON and turn-OFF time which results in high dv/dt being applied to the motor terminals. The high dv/dt switching pattern along with travelling wave effects of long cables applies stress on motor insulation, causing high ground currents which affects the motor bearings. The main cause for the occurrence of a shaft end to end voltage in an inverter-driven motor is the voltage-source PWM inverter employing the latest trench-gate insulated-gate bipolar transistors (IGBTs) which brings high-frequency common-mode and differential-mode voltages to the motor terminals.

These issues are exacerbated in PWM Active Front End (AFE) rectifier based motor drives when compared to one using a diode rectifier. Hence there are problems associated with IGBT technology based ASD with AFE rectifier using long cables. The common mode voltage due to such motor drive with AFE rectifier is a significant issue today. An integrated approach for filter design is discussed wherein the adverse effects of both AFE rectifier and the drive inverter are addressed on both common and differential mode basis[1,2]. The proposed topology addresses the problems of common mode voltage, common mode current and voltage doubling due to ASD. The design procedure for this proposed filter topology is discussed with simulation results that validate the effectiveness of the technology based Adjustable Speed Drives (ASD) using Active Front End (AFE) converter is widely used today[3]. Advantages of using IGBT based power converter are as following,

- High switching frequency.
- Smaller turn-ON and turn-OFF times, this reduces switching losses.
- Advance PWM techniques can be used for control.

Some of the applications require long cable between the motor and the power converter. In this case it has been observed that the voltage at the motor terminal doubles during switching transients as compared to voltage at inverter end. Also the high dv/dt at the inverter end due to faster turn-ON and turn-OFF times leads to problems [4, 5].

- Increased ground currents apart from voltage doubling at motor terminal.
- Bearing damage and insulation failure at load end.
- EMI/EMC concerns.

The DC bus energized using three phase diode bridge rectifiers injects lower order harmonics into grid. When this is not desirable along with the need for regenerative capabilities, AFE converter is a suitable alternative.

II. FILTER DESIGN OBJECTIVES

The design of ASD has to account the electrical noises introduced by modern PWM converters. This demands end to end solutions, wherein the electrical noises are minimized or eliminated with suitable filter topology as an integral part of the ASD system. The filter has to address

Computational Approach of Molar Refraction, Molecular Radius and Internal Pressure of a Binary Mixture – Molecular Interaction Studies

Anil Kumar K.*, Srinivasu Ch.**, Siva Rama Krishna J.***,
Jitendra M.S.N.V.****

Abstract

Refractive indices and molar volume of binary liquid mixture of 1,4-dioxane with 1-butanol were measured over the entire composition range at T= (298.15, 303.15, 308.15, 313.15 & 318) K using Anton Paar and Abbemat Refractometer. Basing empirical formulae and the measured data were utilised to evaluate the molar refraction (Rm), molecular radii (r), internal pressure (πi) along with their excess parameters. The computed results of 'RmE, rE and πiE' were fitted to the Redlich—Kister polynomial equation and focused on the molecular interactions present in the mixture.

Keywords: Refractive Indices, Molar Refraction, Molecular Radii, Internal Pressure, 1,4-Dioxane, 1-Butanol, Binary Mixtures

Introduction

The molecular radii (r) are one of the important parameters of pure liquids and liquid mixtures, which reflect their structural features. In recent years, several attempts have been made to predict theoretically the values of molecular radii of liquid and liquid mixtures. Complex formation/ interactions in liquid mixtures have been extensively studied using optical and ultrasonic technique by many workers (Gonzalez, & Dominguez, 2004; Jiangtao, 2005; Kadam, 2006). The formation of hydrogen bond in solutions and its effect on the physical properties of the mixtures have received much attention. Hydrogen bonding plays an important role in fundamental sciences and in industrial applications. Although many experimental and theoretical studies have been directed towards understanding of hydrogen bonding, it remains an area of active research. Knowledge of physico-chemical properties of liquid mixtures formed by two or more components associated through hydrogen bonds is important from theoretical and process design aspects. Further, the investigation on the possible changes in these properties of mixtures has been found to be an excellent qualitative and quantitative way to elicit the information about molecular structure and intermolecular forces present in the liquid mixtures.

Refractive index is one of the most important properties of liquid. It is an important additive property of the structural arrangement of atom in molecule. Ubarhande (2011) measured refractive indices of binary liquid mixtures and 1,3 diaryl carbamides in different percentage of binary liquid mixture such as acetone-water, dioxane-water & DMSO-water at 27 ± 0.1^0C were measured by Abbes' refractrometer. The data obtained by them was utilised to calculate molar refraction & polarizability constant and reported the attractive force may arise from temporary dipole formation in solvent which may produce weak inter molar force like dispersion force.

Pandey and Dey (2004); Sonar (2010); Pawar (2012); and Prajapati (2012) used several empirical relations based on acoustic methods to calculate the molecular radii of pure liquids. Molecular radii (r) of the pure liquids or binary mixtures can be estimated using refractive index data (n) and molar volume (V_m), it is given as;

* Department of Physics, SRK Institute of Technology, Vijayawada- 521 108, (A.P.), India. Email: anilkumarkoneti@gmail.com

** Reader, Department of Physics, Andhra Loyola College, Vijayawada, Andhra Pradesh, India.

*** Department of Physics, Acharya Nagarjuna University, Guntur, Andhra Pradesh, India.

**** Department of IT, SRK Institute of Technology, Vijayawada, Andhra Pradesh, India.

Observed intraseasonal and interannual variability of Arabian Sea Warm Pool along the Gulf of Aden to Strait of Malacca shipping lane during 1951-2010

R.R.Rao[1,2], M.Jitendra[1], R.Sivakumar[3], and S.S.V.S.Ramakrishna[1]

[1]Dept. of Meteorology and Oceanography, Andhra University, Visakhapatnam 530 003
[2]Indian Institute of Tropical meteorology, Pune 411 008
[3]Naval Physical and Oceanographic Laboratory, Kochi 682 021

Abstract

All the available historic surface marine meteorological data collected from Voluntary Observing Ships (VOS) in the tropical Indian Ocean during the period 1951-2010, archived by National Centre for Atmospheric Research, Boulder, Colorado, USA are assembled, quality controlled, processed and analyzed. Data for all the meteorological parameters stratified into 4° latitude by 1° longitude boxes, over five day durations, for all the 60 years are quality controlled, averaged and analyzed to portray the observed spatio-temporal evolution of all these parameters as Hovmoller diagrams for the Gulf of Aden to Strait of Malacca shipping lane. Two dimensional machine contouring is carried out with appropriate colour shading intensities to highlight the maxima and minima in the analyzed fields. The observed intraseasonal and interannual variability of these parameters is characterized along this shipping lane. These analyzed distributions amply highlight the observed variability of the surface meteorological parameters both on intraseasonal and interannual time scales during 1951-2010. Composites of SST and other marine meteorological parameters for strong and weak ASWP regimes, for strong and weak monsoon years, for El Nino (+1Y) and La Nina (+1Y) years and for Positive and Negative IOD (+1Y) years are presented.

1. INTRODUCTION

The prediction of spatio-temporal evolution of seasonally reversing monsoons and the near-surface layers of the tropical Indian Ocean (TIO) as an interactive coupled geophysical fluid system with a great deal of internal feedbacks continues to remain as a challenging problem. The complex monsoonal interaction with the tropical Indian Ocean produces a rich class of meteorological and oceanic phenomena, with a wide range of socio-economic consequences for millions of people living in the countries around. Understanding the physical mechanisms, which govern the evolution of these phenomena, therefore assumes paramount importance towards the development of expertise and capability to predict the spatio-temporal evolution of this coupled system for societal benefits. A basic prerequisite for addressing such a complex problem is to generate sufficiently detailed descriptions of the characteristics of the spatio-temporal variability of the system and the mechanisms that govern its evolution.

The dynamic and thermodynamic exchanges across the air-sea interface through surface wind stress, radiative and turbulent heat, and freshwater fluxes determine the nature of the coupling between the monsoonal wind systems and the near-surface layers of the TIO. Although these fluxes are not directly measurable, routine marine meteorological measurements made from merchant, fishery, naval and research ships, towers, buoys, aircraft, and satellites are used to estimate these fluxes, with yet unknown errors, for both meteorological and oceanographic studies. Operational forecasting models also require

Different Block Data Storage in Cloud using ID-DPDP Protocol

CH. HARI CHANDANA[1], M. RAMBHUPAL[2]

[1]PG Scholar, Dept of CSE, Aditya Engineering College, Surampalem, East Godavari(Dt), AP, India,
E-mail: jhanuharichandana@gmail.com.
[2]Associate professor, Dept of CSE, Aditya Engineering College, Surampalem, East Godavari(Dt), AP, India,
E-mail: bhupal.ram@gmail.com.

Abstract: In recent years, cloud storage accommodation is one of the core for gaining more expeditious trading magnification by providing its features for client's data. Privacy preservation plus data integrity are the two critical issues challenged by single cloud accommodation providers. Hence distributed cloud environment, multi cloud is utilized. In the subsisting system, when client stores his/her information on multi-cloud servers, distributed storage plus integrity checking are in peril. Provable data possession is a best protocol to prove the integrity of data outsourcing. The proposed ID-DPDP protocol able to provide client's identity with his private key and provably secure under the hardness postulation of the standard CDH quandary. It will check client's data to be remain intact without downloading the whole data. This protocol eliminates certificate management, and it is efficient and flexible.

Keywords: Cloud Computing, Multi Cloud, Provable Data Possession, Data Integrity Checking.

I. INTRODUCTION

In recent years, cloud storage accommodation has become a more expeditious profit magnification point by providing a commensurably low-cost, scalable, position-independent platform for clients' data. Since cloud computing environment is constructed predicated on open architectures and interfaces, it has the capability to incorporate multiple internal and/or external cloud accommodations together to provide high interoperability. We call such a distributed cloud environment as a multi-Cloud (or hybrid cloud). Often, by utilizing virtual infrastructure management (VIM), a multi-cloud sanctions clients to facilely access his/her imaginations remotely by interfaces such as Web accommodations provided by Amazon EC2. Some more technologies to be considered for multi-cloud are Platform VM Orchestrator, VMware vSphere, and Ovirt. These implements avail cloud providers construct a distributed cloud storage platform (DCSP) for managing clients' data. However, if such a consequential platform is vulnerably susceptible to security attacks, it would bring irretrievable losses to the clients. For example, the confidential data in an enterprise may be illicitly accessed through a remote interface provided by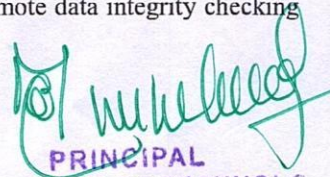 a multi-cloud, or germane data and archives may be disoriented or tampered with when they are stored into a dubious storage pool outside the enterprise. Therefore, it is indispensable for cloud accommodation providers (CSPs) to supply surety techniques for dealing their storage accommodations.

Provable data possession (PDP) (or proofs of recoverable (POR) is a probabilistic validation technique for a storage provider to prove the integrity and ownership of clients' information without downloading information. The proof-checking without downloading makes it especially paramount for immensely colossal-size files and folders (typically including many clients' files) to check whether these data have been tampered with or expunged without downloading the latest version ofdata. Thus, it is able to supersede traditionalistic hash and signature operates in storage outsourcing. Sundry PDP schemes have been recently proposed, such as Scalable PDP plus Dynamic PDP. However, these schemes mainly focus on PDP issues at untrusted servers in a single cloud storage provider and are not felicitous for a multi-cloud environment.

II. RELATED WORK

In cloud computing, remote data integrity checking is a consequential security quandary. The clients' massive data is outside his control. The malevolent cloud server may corrupt the client's data in order to gain more benefits. Many researchers proposed the corresponding organization model and surety model. In 2007, provable data possession (PDP) paradigm was proposed [3]. In the PDP model, the verifier can assure remote information integrity with a high probability. Predicated on the RSA, they designed two provably secure PDP schemes. After that, proposed dynamic PDP model and concrete scheme [2] albeit it does not fortify insert operation. In order to fortify the insert operation, in 2009, Erway proposed a full-dynamic PDP scheme predicated on the authenticated flip table [4]. The kindred work has additionally been done by F.Seb´e[5]. PDP sanctions a verifier to swear the remote information integrity without retrieving or downloading the whole data. It is a probabilistic proof of possession by sampling arbitrary set of blocks from the server, which drastically reduces I/O costs. The verifier only maintains diminutive metadata to perform the integrity checking. PDP is an intriguing remote data integrity checking model.

Efficient Social Network Message Filter Framework and Privacy of Users

¹Romala Surya Devi Vijayalakshmi, ²M. Rambhupal

1,2Dept. of CSE, Aditya Engineering College, Surampalem, East Godavari(Dt), AP, India

Abstract

In OSNs, information filtering can also be used for an unlike, more aware, principle. This is appropriate to the statement that in OSNs there is the leeway of redistribution ormentions other posts on fastidious public/private areas,called in general walls. Information filtering can as a result be used to give users the facility to repeatedly control the messages written on their own walls, by filtering out unwanted messages. We deem that this is a key OSN service that has not been present so far. We propose a scheme agree to OSN clients to have a straight control on the messages position on their walls. This is accomplish through a supple guideline based framework, that permits clients to change the sifting conclusive component to be pragmatic to their walls, and a Machine Learning-based delicate classifier naturally marking messages in hold up of substance based separating.

Keywords

Online Social Networks, Information Filtering, Short Text Classification, Policy-Based Personalization

I. Introduction

Every day and incessant communications entail the swap of several types of content, including free text,image, audio, and video data. According to Facebook statistics standard user creates 90 pieces of content , whereas more than 30 billion pieces of content (weblinks, news stories, blog posts, notes, photo albums, etc.) are joint each month. The enormous and lively nature of these data creates the basis for the service of web content mining strategies meant to mechanically discover useful information inactive within the data. They are active to offer a vigorous support in complex and difficult tasks involved in OSN management, such asfor case in point access control or information filtering. Information filtering has been to a great extentwalk around for what concerns textual documents and, more newly, web content. But, intend of the widely held of these proposals is mostly to give users a classification mechanism to keep away from they are besieged by useless data. One central issue in today's Online Social Networks (OSNs) is to give clients the inclination to control the messages postedon their own private space to avoid that undesirable substance is put on appear.

II. Related Work

Zelikovitz and Hirsh effort to perk up the categorization of short text strings just beginning a semi-supervised knowledge strategy based on a combination of labelled training data plus a less important quantity of unlabeled but associated longer documents. This explanation is inappropriate in our domain in which short messages are not summing up or part of longer semantically related documents. A diverse approach is planned by Bobicev and Sokolova that dodge the dilemma of error-prone feature structure by adopting a arithmetical learning method that can dorationally well without feature engineering. But, this method, named Prediction by Partial Mapping, make a language model that is used in probabilistic text classifiers which are stiff classifiers in scenery and do not without problems incorporate soft, multi partisanship paradigms.

III. Literature Survey

THE AUTHOR, A. ADOMAVICIUS(ET .AL) AIM IN [1], an outline of the field of recommender frameworks and depicts the present era of proposal strategies that are normally arranged into the accompanying three principle classifications: substance based, communitarian, and crossover suggestion approaches. This additionally depicts different restrictions of current proposal techniques and talks about conceivable expansions that can enhance suggestion abilities and make recommender frameworks pertinent to a much more extensive scope of uses. These augmentations incorporate, among others, a change of comprehension of clients and things, joining of the logical data into the proposal procedure, support for multicriteria appraisals, and a procurement of more adaptable and less meddling sorts of suggestions.

THE AUTHOR, Y. Zhang(ET .AL) AIM IN [2], Data sifting frameworks taking into account factual recovery models generally figure a numeric score demonstrating how well every report coordinates every profile. Archives with scores above profile-particular dispersal limits are conveyed. An ideal dispersal edge is one that augments a given utility capacity in view of the circulations of the scores of applicable and non-significant archives. The parameters of the appropriation can be assessed utilizing pertinence data, yet importance data acquired while sifting is one-sided. Another system for modifying dispersal edges that expressly models and makes up for this inclination. The new calculation, which is in light of the Maximum Likelihood guideline, together gauges the parameters of the thickness appropriations for significant and nonrelevant archives and the proportion of the important report in the corpus. Tries different things with TREC-8 and TREC-9 Filtering Track information exhibit the viability of the calculation.

IV. Problem Definition

The request of content-based filtering on messages posted on OSN user walls poses supplementary challenge given the short length of these messages other than the wide range of topics that can be discussed. Short text categorization has received up to now little attention in the scientific community.Giving this administration is not just a subject of utilizing already characterized web substance mining procedures for an alternate application rather it require to plan ad-hoc specially appointed grouping methodologies. This is because of wall messages are constitute by short content for which customary arrangement routines have genuine impediments since short messages don't give adequate word events.Information filtering systems are considered to categorize a stream of dynamically generate information dispatched asynchronously by an information producer and present to the user those information that are probable to satisfy the requirements.

V. Proposed Approach

OSNs the ordinary of access control models proposed so far put into practice topology-based access oversee as per which get to control needs are talked as far as connections that the requester ought to have with the supply owner. Separating arrangement dialect widens the proposed dialects for right to utilize control

IJCSE **Computer Sciences and Engineering**

ISSN: 2347-2693 (E) Scholarly, Peer-Reviewed and Fully Refereed Academic Journal

Search... Search

| # Home | Aim & Scope | Editorial Board | For Author Guidelines ⌄ | Peer Review Process | Reviewer Guidelines |
| Ethics & Malpractice | Contact us | | | | |

Open Access Article Go Back

An Effective Approach for Improving Anomaly Intrusion Detection

Kumar J S[1], Appa Rao S S V[2], Subha Sree M[3]

Section:Review Paper, Product Type: Journal Paper
Volume-3 , Issue-10 , Page no. 92-98, Oct-2015

Online published on Oct 31, 2015

View this paper at Google Scholar | DPI Digital Library

📄 XML View 📄 PDF Download

How to Cite this Paper

Journal Update

Journal Statistics

UGC J. No.	63193
Citations	810
h-index	009
i10-index	007
IF Value	3.022

09:18
03-02-2021

PRINCIPAL
SRK Institute of Technology
ENIKEPADU, VIJAYAWADA-521 108.

FINANCIAL INCLUSION: SERVICES AND STRATEGIES OF RETAIL BANKING

Prof. D. Suryachandra Rao[1] and B.V.S.S. Subba Rao[2]
Dean[1] & Research Scholar[2], Faculty of Commerce & Management, Krishna University, Andhra Pradesh

ABSTRACT

The benefits of economic growth have not equitably reached different parts of our society. The rural and agricultural sector, in particular, has not gained the desired momentum of growth and development.

Access to finance by the poor and vulnerable groups is a prerequisite for poverty reduction and social cohesion. This has to become an integral part of our efforts to promote inclusive growth. In fact, providing access to finance is a form of empowerment of the vulnerable groups. The various financial services include credit, saving, insurance payments and remittance facilities. The objective of financial inclusion is to extend the scope of activities of the organized financial system to include within its ambit people with low incomes. Through graduated credit, the attempt must to be lifting the poor from one level to another so that they come out of poverty.

As the economy began to grow at higher rates, the regional and societal disparities called for new strategies to ensure that the banking system met the requirements of inclusive growth. Such strategies needed to be fashioned in a manner that they did not undermine the stability and efficiency of the financial system. Specific focus on financial inclusion commenced in November 2005, when Reserve bank advised banks to make available a basic banking 'no-frills' account with low or nil balance as well as charges, with a view to expanding the outreach of such accounts. In such accounts, banks are required to make available all printed material used by retail customers in the regional language concerned.

Financial inclusion rest on three pillars viz., access to financial services, affordability of such services and actual utilization of such services. Financial inclusion can be achieved only if all the three pillars show affirmative results.

Key Words: Financial Services, Inclusive Growth, Financial Inclusion, Organized Financial System.

INTRODUCTION

Financial Inclusion means extending the banking habit and ensuring access to financial services and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost. But the path of financial inclusion is daunting. The benefits of economic growth have not equitably reached different parts of our society. The rural and agriculture sector, in particular, has not gained the desired momentum of growth and development.

The Recent developments in banking technology have transformed banking from the traditional brick – and – mortar infrastructure like staffed branches to a system supplemented by other channels like automated teller machines (ATM), credit /debit cards, internet banking, online money transfers, etc. The moot point, however, is that access to such technology is restricted only to certain segments of the society. Indeed, Some trends, such as increasingly sophisticated customer segmentation technology – allowing, for example, more accurate targeting of sections of the market – have led to restricted access to financial services for some groups. There is a growing divide, with an increased range of personal finance options for a segment of high and upper middle income population and significantly large section of the population who lack access to even the most basic banking services. This is termed "financial exclusion". These people, particularly, those living on low incomes, cannot access mainstream financial products such as bank accounts, credit, remittances and payment services financial advisory services, insurance facilities, etc.

Deliberations on the subject of Financial Inclusion contributed to a consensus that merely having a bank account may not be a good indicator of financial inclusion. Further, indebtedness as quantified in the NSSO 59th round (2003) may not also be a reflective indicator. The ideal definition should look at people who want to access financial services but are denied the same. If genuine claimants for credit and financial services are denied the same, then that is case of exclusion. As this aspect would raise the issue of credit worthiness or bank ability, it is also necessary to dwell upon what could be done to make the claimants of institutional credit bankable or creditworthy. This would require re-engineering of existing financial products or delivery systems and making them more in tune with the expectations and absorptive capacity of the intended clientele.

Members Perception on the Impact of SHG's: A Case Study of Income Generating Women in W.G. District

Prof. D. Surya Chandra Rao [1], Vice Chancellor (I/C), Krishna University, Machilipatnam, Email: profdsrao@gmail.com, Ph: 9440149149

Dr. N. Subramanyam [2], Professor & Head, Dept. of MBA, SRK Institute of Technology, Vijayawada. Email: nsm.subramanyam@gmail.com, Ph: 9440109226

Mr. B.V.S.S. Subba Rao [3], Research Scholar Department of Commerce & Management, Krishna University. E-mail: bvsss_rao@yahoo.co.in, Ph: 098499 76199.,

Abstract

Microfinance has garnered significant worldwide attention as being a successful tool to meet this substantial demand for financial services by low-income micro entrepreneurs. It has evolved over the past quarter century across India into various operating forms and to a varying degree of success. Today, Self-Help Groups and Micro Finance Institutions are the two dominant form of microfinance in India. Microfinance in India is currently being provided by three sectors: the government, the private sector and charities. The vital function of the Self Help Group (SHG) programmeme is to provide access to credit in the context of poverty reduction and empowerment of women. With the aim to meet the millennium development goals and microfinance programmeme's role in supporting it, there has been an increasing expectation on their impact on women empowerment. However, the perception and expectations of the members of the SHGs vary from person to person. This paper explains the perceptions of the sample women members in West Godavari District who are engaged in different income generating activities, in terms of economic impact.

Key Words: Self Help Groups, Micro Finance, Empowerment, Economic Impact.

Introduction

It has been estimated that there are more than five hundred million economically active poor people in the world operating micro enterprises and small businesses. Most of them do not have access to adequate financial services. Microfinance has garnered significant worldwide attention as being a successful tool to meet this substantial demand for financial services by low-income micro entrepreneurs. It has evolved over the past quarter century across India into various operating forms and to a varying degree of success. India now occupies a significant place and a niche in global microfinance through promotion of the self-help groups (SHGs) and the home grown SHG-Bank Linkage (SBL) model. The Indian model offers greater promise and potential to address poverty as it is focused on building social capital through providing access to financial services through linking with the mainstream.

The Self Help Group is considered as a viable organisation of the rural poor particularly women, who are the marginalised groups of our society due socio-economic constraints in the rural areas, for delivering micro credit in order to undertake entrepreneurial activities. If adequate self-employment can be generated for women in compatible with their roles in home-keeping, it will help increasing their economic, social and physical well-beings and ultimately free them from the clutches of subjugation. Undoubtedly necessary vehicle for the purpose is supplied by institution of women SHGs which help improving economic status of women, protecting their relevance to and significance in the society and above all, effectively implementing the employment support practices of the government for women.

The Self Help Group is considered a a viable organisation of the rural poor particularly women, who are the marginalised groups of our society due to socio-economic constraints in the rural areas, for delivering micro credit in order to undertake entrepreneurial activities.

Need for Women Empowerment

Women represent 50% of the world's population, produce half the world's food supply, account for 60% of the working force, contribute up to 33.3% of the official labour force, perform nearly 66.6% of all working hours, receive 10% of world economy but, surprisingly own less than 1% of world's real estate. These data apparently justify that there is a need for Women Empowerment which shall be achieved only through providing opportunities and rights to basic civic amenities, education, equal wages, right to question, fight against violence and injustice, make decision and express themselves. Hence, there is an urgent necessity to improve the status of women by well-

Members Perception on the Impact of SHG's: A Case Study of Income Generating Women in W.G. District

Prof. D. Surya Chandra Rao [1], Vice Chancellor (I/C), Krishna University, Machilipatnam, Email: profdsrao@gmail.com, Ph: 9440149149

Dr. N. Subramanyam [2], Professor & Head, Dept. of MBA, SRK Institute of Technology, Vijayawada. Email: nsm.subramanyam@gmail.com, Ph: 9440109226

Mr. B.V.S.S. Subba Rao [3], Research Scholar Department of Commerce & Management, Krishna University, E-mail: bvsss_rao@yahoo.co.in, Ph: 098499 76199.,

Abstract

Microfinance has garnered significant worldwide attention as being a successful tool to meet this substantial demand for financial services by low-income micro entrepreneurs. It has evolved over the past quarter century across India into various operating forms and to a varying degree of success. Today, Self-Help Groups and Micro Finance Institutions are the two dominant form of microfinance in India. Microfinance in India is currently being provided by three sectors: the government, the private sector and charities. The vital function of the Self Help Group (SHG) programmeme is to provide access to credit in the context of poverty reduction and empowerment of women. With the aim to meet the millennium development goals and microfinance programmeme's role in supporting it, there has been an increasing expectation on their impact on women empowerment. However, the perception and expectations of the members of the SHGs vary from person to person. This paper explains the perceptions of the sample women members in West Godavari District who are engaged in different income generating activities, in terms of economic impact.

Key Words: Self Help Groups, Micro Finance, Empowerment, Economic Impact.

Introduction

It has been estimated that there are more than five hundred million economically active poor people in the world operating micro enterprises and small businesses. Most of them do not have access to adequate financial services. Microfinance has garnered significant worldwide attention as being a successful tool to meet this substantial demand for financial services by low-income micro entrepreneurs. It has evolved over the past quarter century across India into various operating forms and to a varying degree of success. India now occupies a significant place and a niche in global microfinance through promotion of the 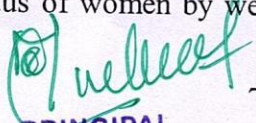self-help groups (SHGs) and the home grown SHG-Bank Linkage (SBL) model. The Indian model offers greater promise and potential to address poverty as it is focused on building social capital through providing access to financial services through linking with the mainstream.

The Self Help Group is considered as a viable organisation of the rural poor particularly women, who are the marginalised groups of our society due socio-economic constraints in the rural areas, for delivering micro credit in order to undertake entrepreneurial activities. If adequate self-employment can be generated for women in compatible with their roles in home-keeping, it will help increasing their economic, social and physical well-beings and ultimately free them from the clutches of subjugation. Undoubtedly necessary vehicle for the purpose is supplied by institution of women SHGs which help improving economic status of women, protecting their relevance to and significance in the society and above all, effectively implementing the employment support practices of the government for women.

The Self Help Group is considered as a viable organisation of the rural poor particularly women, who are the marginalised groups of our society due to socio-economic constraints in the rural areas, for delivering micro credit in order to undertake entrepreneurial activities.

Need for Women Empowerment

Women represent 50% of the world's population, produce half the world's food supply, account for 60% of the working force, contribute up to 33.3% of the official labour force, perform nearly 66.6% of all working hours, receive 10% of world economy but, surprisingly own less than 1% of world's real estate. These data apparently justify that there is a need for Women Empowerment which shall be achieved only through providing opportunities and rights to basic civic amenities, education, equal wages, right to question, fight against violence and injustice, make decision and express themselves. Hence, there is an urgent necessity to improve the status of women by well-

Retailer's Perception on FDI: an Empirical Study of Vijayawada City

*Dr. K. Krishnaiah Choudary, Associate Professor & HOD, Dept. of MBA, Sir C.R.Reddy College of Engineering, Eluru, Ph: 94410 40203. E-mail: drkc.kodali@gmail.com
** Mr. B.V.S.S. Subba Rao, Research Scholar, Department of Commerce & Management, Krishna University, Machilipatnam, Andhra Pradesh, Ph: 98499 76199. E-mail: bvsss_rao@yahoo.co.in

Abstract

Economic Development of any Country is dependent on International Economic Integration. FDI is only a gadget of attracting International Economic Integration in any Economy. Retailing is the interface between the producer and the individual consumer buying for personal consumption. Retailing is the last link that connects the individual consumer with the manufacturing and distribution chain. India's rising retail boom is a success story. FDI in Indian retailing has become one of the debatable issues today. Allowing FDI in retailing has recently generated tremendous euphoria for some and fear for others. The aim of this paper is to study and analyze the various issues related to FDI in the fast growing Retail sector in India. This empirical paper tries to study the attitude and perception of small Retailers in relation to FDI in Indian Multi Brand Retail Market. The perceptions of retailers in city of Vijayawada of Andhra Pradesh were recorded using a structured questionnaire and appropriate statistical tools were used to arrive at a general conclusion on Foreign Direct Investment in Retailing. Wherever available primary data is used and secondary data is used to supplement the primary data.

Key Words: Foreign Direct Investment, Retailer Perception, Multi brand Retail Market, Retailing.

FDI Policy With Regard To Retailing in India

The new policy shall provide a significant boost to the $28 billion Indian organised retail market which is expected to reach $260 billion by 2020. With sluggish growth in the developed markets across the globe and Indian retailers being bogged down by high debt and high cost of expansion, the new policy presents a win-win situation for both foreign and Indian retailers. The stock markets also reflected the positive outlook for the sector, by pushing up some retail stocks by up to 30% within two days of the announcement. The policy will positively impact a wide cross section of the Indian population. Consumers are expected to save 5-10% on their regular household spend and get a wider choice of products. Farmers will get 10-30% higher remuneration for their produce as back end infrastructure investments will eliminate the middlemen. The infusion of capital and setting up of new stores will also provide a boost to real estate as well and create 3 to 4 million new jobs in retail and a further 4 to 6 million jobs in logistics, contract labour, security, etc.

Review of Literature

1. "Doing Business in India", A publication of the World Bank and the International Finance Corporation, 2009 The International Bank for Reconstruction and Development / The World Bank indicate — Foreign direct investment assists in increasing the income that is generated through revenues realised through taxation. It also plays a crucial role in the context of rise in the productivity of the host countries. In case of countries that make foreign direct investment in other countries this process has positive impact as well. In case of these countries, their companies get an opportunity to explore newer markets and thereby generate more income and profits.

2. A Report by Navdanya/ Research Foundation for Science, Technology and Ecology, New Delhi titled —Corporate Hijack of Retail - Retail Dictatorship Vs Retail Democracy sets the foot right saying —Giant corporations like Wal-Mart and Reliance have started to try and take over the Indian retail sector. The entry of the giant corporate retail in India's food market will have direct impact on India's 650 million farmers and 40 million people employed in tiny retail. More than 6600 Mega Stores are planned with Rs. 40,000 crore by 2011.

3. Singh, Dr. Mandeep, Associate professor of Economics, The Earth Institute of Columbia University in his article —Foreign Direct Investment in Retailing in India – Its Emergence & Prospects published on 3rd August, 2010 says —Since the Indian retail sector is highly fragmented and domestic retailers are in the process of consolidating their position, the opening up of FDI regime should be in phased manner over 5 to 10 years time frame so as to give the domestic retailers enough time to adjust changes. FDI should not be allowed for multi brand stores in near future, as Indian retailers will not be able to face competition with these stores immediately. At present it is also not desirable to increase FDI ceiling to more than 51% even for single premium brand stores. It will help us to ensure check and

97

Evaluation of Mechanical Properties of Aluminium, Borassus Flabellifer Fiber and Polyester Composites

U. Ramesh
Department of Mechanical
Engineering,
SRK Institute Of
Technology,
Vijayawada, India.

A. Venkata Dinesh
Department of Mechanical
Engineering,
Debre Tabor University

Debre Tabor, Ethiopia.

G. Durga Prasad
Department of Mechanical
Engineering
SRK Institute Of
Technology
Vijayawada, India.

Abstract: The use of natural fibres like borassus flabellifer fiber, flax, sisal, jute, kenaf, etc. as replacement to manmade fibres in fibre-reinforced composites have increased now a days due to advantages like low density, low cost and biodegradability. But the natural fibres have poor compatibility with the matrix and they have relatively high moisture sorption. In this research, the standard test method of ASTM D638M-89is used to prepare specimens as per the dimensions for testing tensile properties of fiber-resin composites. The test specimen has a constant cross section with tabs bonded at the ends. The specimens were incorporated with borassus flabellifer fiber. Five identical specimens were prepared for each weight by varying fiber content in grams i.e. 0.5, 1.0, 1.5, 2.0, 2.5. Tensile strength of fabricated composites increases with increase in weight of fiber. The tensile properties of pure polyesters are also determined experimentally. The tensile strength of pure polyester is 35.2 N/mm². The tensile strength of a fibered composite is 64.51 N/mm² (for maximum loading fiber that is at 2.5 grams).

Keywords: Composite, Natural Fibre, Tensile strength

1. INTRODUCTION

With the increased trend for sustainable and environmentally friendly materials, polymer composites industries has lead towards bio degradable polymers from renewable resources such as PVA (polyvinyl alcohol).Biopolymers offer environmental benefits such as biodegradability, greenhouse gas emissions, and renewability of the base material. Bio-composites are usually fabricated with biodegradable/ non-biodegradable polymers as matrix and natural fibers as reinforcement. Many lignocellulosic fibers, such as jute, hemp, sisal, abaca etc. are used as reinforcement for biodegradable bio-composites because of their good mechanical properties and low specific mass. has received much attention of biodegradable polymers. PVA is linear aliphatic thermoplastic polyester, produced from renewable agricultural resources. PVA has properties that are competitive to many commodity polymers (e.g. PP, PE, PLA, PS) such as high stiffness, clarity, gloss, and UV stability. A way to improve the mechanical and thermal

properties of PVA is the addition of fibers or filler materials. Combining PVA with natural fibers which are abundantly, readily available such as kenaf, jute, sisal etc. can lead to a totally bio degradable composite made only from renewable resources.

1. Bast or Stem fibres (jute, mesta, banana etc.)
2. Leaf fibres (Palmyra palms, Elephant grass, sisal, pineapple, screw pine etc.)
3. Fruit fibres (cotton, coir, oil palm etc.).

2. EXPERIMENTAL PROCEDURE

2.1 Materials:

Palmyra palms are economically useful and widely cultivated in tropical regions. The Palmyra palm has long been one of the most important trees of Cambodia and India where it has over 800 uses. The leaves are used for thatching, mats, baskets, fans, hats, umbrellas, and as writing material and PVA (polyvinyl alcohol).

❖ Aluminum
❖ Borassus flabellifer fiber
❖ Polyester

2.2 *Extraction of Fiber*

Fiber is available in the form of bract on a Palmyra tree
.First collect dried bracts from the Palmyra tree then after segregate fibers from the bract then after Fibers are cleaned and dried under sun for two days to remove moisture content. Further, the fibers were kept in oven for 2 hours at 70⁰ C to ensure that maximum moisture was removed. The above fibers extracted by different methods are used for making composite specimens. In this work I took Palmyra bract fiber these are generally 40 cm long.

2.3 Composite Fabrication

The test specimen has a constant cross section with tabs bonded at the ends. The specimen is prepared by hand layup process in the form of a rectangular strip of 160x13x3 mm thick and ground to conform to the dimensions. The mould is prepared on smooth ceramic tile

Performance of water and diluted ethylene glycol as coolants for electronic cooling

M. Gayatri, Dr.D.Sreeramulu

M.E(Thermal Engineering) Aditya Institute Of Technology And Management, Tekkali, Srikakulam, Andhra Pradesh

Prof. department of Mechanical Engineering, Aditya Institute Of Technology And Management, Tekkali, Srikakulam, Andhra Pradesh

Abstract:
As the number of transistors increases with new generation of microprocessor chips, the power draw and heat load to dissipate during operation increases. As a result of increasing the heat loads and heat fluxes the Conventional cooling technologies such as fan, heat sinks are unable to absorb and heat transfer excess heat dissipated by these new microprocessor. So, new technologies are needed to improve the heat removal capacity. In the present work single phase liquid cooling system with mini channel is analyzed and experimentally investigated. Mini channels are chosen as to provide higher heat transfer co-efficient than conventional channel. Copper pipes of 0.36 mm diameter are taken to fabricate heat sink and heat exchanger. A pump is used to circulate the fluid through heat sink and heat exchanger. A solid heated aluminium block to simulate heat generated electronic component is used and electrical input is supplied to the heated aluminium block and cooling system is placed over the heated block. The performance of the cooling system is analyzed from the experimental data obtained. It is experimentally observed that the mini channel liquid cooling system with water as a coolant has better performance than diluted ethylene glycol as coolant at different flow rates. The surface temperature of the heated aluminium block with convective heat transfer co-efficient is observed
Keywords: Liquid cooling, water, diluted ethylene glycol, heat sink, heat transfer coefficient, pump power

I. INTRODUCTION

Today's electronic components are required to perform tasks at a faster rate, and so high-powered integrated circuits have been produced in order to meet this need. These high-speed circuits are expected to generate heat fluxes that will cause the circuit to exceed its allowable temperature. According to Moore's predictions the number of transistors will get doubled every two years and heat transfer solutions to chip is a continuous research As the number of transistors increase with development of chip integration technology, the power draw and heat load to dissipate during operation increase The failure rate of electronic components increase with increase in temperature. A hot spot created within the electronic components due to low transfer rates seems to be major failure problem. Therefore thermal control has become increasing important in the design and operation of electronic equipments. As a result of high heat loads larger fans and large heat sinks or new techniques are needed to improve the heat removal capacity. The problem with larger heat sinks and fans are objectionable mechanical and thermal stresses and also noise levels. In order to provide greater cooling efficiency many IT systems are currently developing and employing liquid cooling systems

II. LITERATURE REVIEW

Moore [1] predicted the future of integrated electronics and the advantages of integration. Integrated circuits will lead to such wonders as home computers, automatic controls for automobiles and personal portable communication equipments. The development has been possible only due to integration of millions of transistors, but one of the problems is heat problem. According to his predictions the number of transistors will get doubled every two years and heat transfer solutions to chip is a continuous research. Kanlikar and Grande [2] studied the increased circuit density on today's computer chips is reaching the heat dissipation limits for technology, the direct liquid cooling of chips is being as a viable alternative. He reviewed a liquid cooling with internal flow channels in technological options and challenges. The use of micro channels that incorporate either microstructures in the channels or grooves in the channel surface may lead to significant enhancements in single phase cooling. A simplified and well established fabrication process is described to fabricate both classes of three dimensional micro channels. Wahib Owhaib and Bjorn Palm [3] studied the heat transfer characteristics of single phase forced convection of R – 134a through single circular micro channels with

Performance and emission characteristics of Tertiary Butyl Alcohol gasoline blends on a spark ignition engine

Danaiah Puli & P Ravi Kumar

Published online: 11 Jun 2015.

Submit your article to this journal ☐

Article views: 14

View related articles ☐

View Crossmark data ☐

Vibration Analysis of Rotating Composite Beam with Dynamic Stiffness Matrix Method

[1]Matta Venkata Baji Sampath,[2]P.Ravi Kumar&[3]G.Diwakar

[1]PG Scholar,Dept. of Mechanical Engineering, PVPSIT (Autonomous), Kanuru, Vijayawada, India
[2]Assistant Professor, Dept. of Mechanical Engineering, PVPSIT (Autonomous), Kanuru, Vijayawada, India
[3]Associate professor, Dept. of Mechanical Engineering, PVPSIT (Autonomous), Kanuru, Vijayawada, India
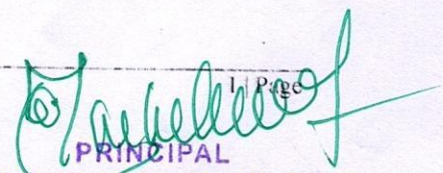
Abstract: The turbine, propeller, helicopter blades are idealized as rotating cantilever beams in the analysis of its different characteristics. The motive of this paper is to find the natural frequency of rotating composite beams. In the present work a rotating composite beam is considered and the natural frequencies of the beam are determined using dynamic stiffness matrix method. The Dynamic Stiffness matrix method developed for the homogeneous cantilever beams is implemented to composite cantilever beams. First the effective young's modulus is determined for the composite material. The effective young's modulus is used to predict the frequency of rotating composite beam for various parameters. The results obtained, indicates how the natural frequency is influenced by various parameters such as speed, hub radius and number of layers in composite.

Key words: Dynamic stiffness matrix method, Effective young's modulus, Rotating Composite Beam, Various parameters.

I. Introduction

The importance of cantilever beams as the application of engineering structures is mostly seen in gas and steam turbine blades, rotor blades of helicopter and spinning space crafts. The analysis of vibration characteristics provides useful information in designing and modeling of mechanisms. Abundance of literature is available in the free vibration of beams. Free vibration analysis of uniform beam are discussed in [1] by finite element method of formulations. Compared to the beams in the stationary state, the natural Frequencies and mode shapes vary significantly with the rotating speed caused by the additional bending stiffness of the beam. The development of methods in free vibration from the past are [2] deals with the Rayleigh-Ritz method. [3] Sinc Galerkin method, [4] Hamilton's principle and Lagranges method,[5] method of Carrera Unified Formulations , [6] Newmark direct integration method, [7] Variational Iteration Method (VIM) and Parameterized Perturbation Method (PPM), in[9,10,11,12] presented various approaches to DSM among these methods Dynamic Stiffness Matrix Method is considered as advanced and elegant method as compared to finite element formulations because it gives exact results for all natural frequencies and mode shapes. without making any approximation enroute andthe results are independent of the number of elements used in the analysis. It appears to be no work was done on rotating composite beams based on the formulations of Dynamic Stiffness Matrix method and the paper helps to fill the gap and extend the further scope of research. The prime motive of this paper is to apply the dynamic stiffness matrix method for composite beams by using the same formulations developed for homogeneous materials without any necessity of separate formulations for composite structures.

To derive the dynamic stiffness matrix of a rotating Bernoulli-Euler beam Analytical and computational efforts are required. Starting from the basic governing deferential equations in free vibration. the dynamics stiffness matrix of a uniform rotating Bernoulli-Euler beam [9] is derived in the paper with the effects of hub radius. The vibrational characteristics of static composite beams are discussed [13] by mixed finite element method, [14, 17] studies CUS (circumferentially uniform stiffness), CAS (circumferentially asymmetric stiffness) and synergistic effects by ANSYS, and It is known that the Young's modulus of a multi-layered composite beam with respect to fiber orientation may be obtained by measuring the moduli in three basic modes of deformation: longitudinal, transverse and longitudinal shear. In practical applications, most of the laminas are sufficiently thin to assume that a state of plane stress exists within each lamina. However, significant inter laminar shearing occurs in the flexure of thick laminates. For this reason, formulations have been developed for inter laminar shearing, while keeping with the assumption that the state of stress within the lamina remains that of plane stress. Effective flexural modulus obtained for the composite beams[18] is used in the dynamic stiffness matrix method for the prediction of effective young's modulus of composite by the in-plane flexural stiffness coefficients D_{ij} and the vibrational response of the rotating composite beams are obtained. The derived formulations are validated for cantilever beam results with reference [1] and the frequencies for three composites (boron epoxy, glass epoxy and graphite epoxy) are presented with respect to variation in speed, hub radius and number of layers.

RESEARCH ARTICLE

FABRICATION AND MECHANICAL TESTING OF NATURAL FIBRE REINFORCED POLYPROPYLENE HYBRID COMPOSITES

Dr. N. RAVI KUMAR, P. BHAGYA LAKSHMI

Department of Mechanical Engineering, V R Siddhartha Engineering College, Vijayawada, India

P. BHAGYA LAKSHMI

ABSTRACT

Short conventional fibers (glass, aramid, carbon etc) have been extensively used over the last decades as reinforcements of thermoplastic polymeric matrices. Now a days the growing interest in using natural vegetable fibers as a reinforcement of polymeric based composites is mainly due to their renewable origin, relative high specific strength and modulus, light weight and low price. The main aim of this research was to study the feasibility of using a Coconut & Banana natural fibers as reinforcements in the development of partially biodegradable green and environmentally friendly composites. Composites consisting of polypropylene reinforced with Coconut & Banana fibers were prepared by injection moulding technique according to the ASTM standards with varying weight fractions of fiber(0%, 5%, 7.5%, 10%, 12.5% and 15%). The developed Coconut & Banana fiber reinforced polypropylene (PP) Hybrid composites were then tested for their mechanical properties.

Key Words: Coconut & Banana fibre, Hybrid composite, Polypropylene, Mechanical properties

I. INTRODUCTION

In today's world, plastic become vitally important part of life. It is said mostly as disposable carry bags, bottles, containers, food-wraps and product of packing, but there is no particularly disposable about most plastics. If plastics are used in small amount it will be very helpful to us to keep the environment safe, but it is used in staggering quantities. The usage of plastics is becoming huge and it is unavoidable; Plastics are mainly carbon – based polymers made from petroleum oil which is a non-renewable resources and it is becoming increasingly expensive. Thinking of Environment, now it's time to think for alternative. As a result the hottest developments are the increasing interest in plastics prepared from organic matter rather than petroleum which are BIOPLASTICS. The main reason

for getting interest in FRP is due to their high stiffness, high strength to weight ratio, specific modulus compared to other conventional materials.

Now a day's natural fibers like banana, sisal, jute, cotton and other natural fibers have attracted the attention of technologists and scientists for application in packing, low cost housing and other structures. Natural fibers composites can exhibit required mechanical strength and properties such as better electrical resistance, acoustics insulating properties and good thermal properties. Since the low cost, less weight, and density of natural fibers make them an attractive alternative.

The increasing interest in inexpensive reinforcement, renewable, degradable materials which have been environment- friendly has stimulated the use of hard cellulose fibers. Banana

Dr. N. RAVI KUMAR, P. BHAGYA LAKSHMI

PRINCIPAL
SRK INSTITUTE OF TECHNOLOGI
ENIKEPADU, VIJAYAWADA

EXPERIMENTAL INVESTIGATION USING SPLIT INJECTION

By

K. BALA SHOWRY *

A.V. SITA RAMA RAJU **

P. RAVINDER REDDY ***

* Principal, SRK Institute of Technology, Vijayawada, India.
** Professor, Department of Mechanical Engineering, Jawaharlal Nehru Technological University, Hyderabad, India.
*** Professor and Head, Chaitanya Bharathi Institute of Technology, Osmania University, Hyderabad, India.

ABSTRACT

The main aim of this paper is to improve the performance and to reduce the emissions of CI engine combustion. Experiments have been conducted on a single cylinder CI engine with normal injection and two pulse injection (split injection). From the simulated results and also existing experimental results it was observed that 10° dwell for double injection gives better results. In the present work, for split injection, existing cam shaft has been replaced with a modified cam shaft with a dwell angle of 10°, and experiments have been carried out with normal camshaft for single injection and with modified cam shaft for double injection. In double injection 50% of the total mass of the fuel was injected in the first pulse and the remaining 50% was injected after a dwell of 10°.

Experiments have been carried out for Single Cylinder Diesel Engine with the normal cam shaft which was existing in the engine for different loads (25%, 50%, 75% and 100%). The modified camshaft with double injection was tested with a dwell of 10°. In the first injection 50% of the fuel was injected and remaining fuel was injected after a dwell of 10°. The cycle peak pressure in double injection has been increased by 8% for full load, NO_x emission has been reduced by 8.67%, and CO levels were reduced by nearly 30%.

Keywords: Split Injection, CFD, SOI (Start of Injection), DOI (Duration of Injection).

INTRODUCTION

The diesel engine, because of its highest thermal efficiency among currently available engines, has been a main power source for over a hundred years. Its advantage in thermal efficiency is due to its combustion characteristics. Diesel fuel is injected into a high temperature and pressure environment (compression ratio as high as 24:1). Higher the compression ratio, efficiency of the cycle is high [Hey Wood, 1998]. However, for some of the same reasons that the diesel engine is highly efficient, its power density and exhaust emissions have traditionally been less desirable than Spark Ignition (SI) Combustion Engines. In a diesel engine, the combustion rate is controlled by the fuel injection rate, mixing and diffusion rates which are usually slower than the premixed combustion rate in typical Gasoline Engines. Diesel Engines usually emit more particulate and NO_x than their gasoline counterparts. The high temperature and pressure environment in the diesel engine cylinder, because of its high compression ratio and high combustion temperatures makes it impossible to completely prevent NO_x from forming. The soot formed in the fuel – rich regions, although partially oxidized in the expansion stroke, also remains in considerable amount at Exhaust Valve Opening (EVO).

The problem of Diesel Engine emissions is exacerbated because of the trade-off feature between NO, and emissions. It is usually impossible to reduce both these emissions simultaneously, since factors that decrease one usually increases the other. For example retarding the fuel injection timing is effective to reduce formation by reducing the peak cylinder temperature and pressure. However, this method results in an increase in production because more soot is formed due to the temperature of in – cylinder gas which has shorter time to be oxidized [Lee, 2002]. Increasing the EGR rate decrease the NO_x emission level, however less oxygen available to oxidize soot. Eventually, any change in engine parameters will unavoidably affect other major engine performance measures, like retarding the timing causes lower Thermal Efficiency and higher.

Effect of Process Parameters on Weld bead geometry of Narrow V-groove Butt joint in Pulsed Gas Metal Arc Welding

A. Pavan Kumar[#1], Dr. Sanjay Kumar[*2], Z. Jitendra[*3]

[#1]PG Scholar, Mechanical Engineering, GVP College of Engineering, Visakhapatnam-530048, AP, India.
[*2]Associate Professor, Mechanical Engineering, GVP College of Engineering, Visakhapatnam-530048, AP, India.
[*3]Assistant Professor, Mechanical Engineering, SRK Institute of Technology, Vijayawada- 521108, AP, India.
[#1]apavankumar0308@gmail.com
[*2]sanjay_kumar74@gvpce.ac.in
[*3]jitendra.zaddu@gmail.com

Abstract: Weld bead geometry is influenced by a number of welding process parameters that affect the product quality of the joint. In this experimental study, an effort is made to find the effect of process parameters on bead geometry of narrow v-groove butt joint in pulsed gas metal arc welding. Three input process parameters such as wire feed rate, welding speed and groove angle, each of three levels each are considered. The experiments are conducted on narrow v-groove butt joint of 5083-h111 aluminium alloy with groove angles of 20°, 30° and 40° using full factorial design of experiments. The mathematical model for side penetration and dilution are developed using linear regression analysis. The mean analysis for side penetration and dilution is done for all three input levels. It is observed that wire feed rate has maximum effect on side penetration and dilution whereas welding speed has intermediate effect on the side penetration and dilution.

Keywords: Wire feed rate, Welding speed, Groove angle, Narrow V-groove and Aluminium alloy.

I. INTRODUCTION

Quality of a weld joint is strongly influenced by process parameters during the welding process. This work focuses on the development of mathematical models for the selection of process parameters and the prediction of weld bed geometry. Weld bead geometry is influenced by a number of welding process parameters which affect the quality of the joint. The relation between GMAW process parameters and weld bead geometry are complex because of the number of parameters involved. In order to achieve high quality welds, mathematical models that can predict the bead geometry and shape to accomplish the desired mechanical properties of the weldment should be developed. A large number of experiments are to be conducted to predict the weld bead geometry and to develop the mathematical model. Karadeniz et al: [1] studied the effect of process parameters on penetration in gas metal arc welding which includes the study of penetration for process parameters like welding current, arc voltage and welding speed.

Lee and Um [2] studied geometry prediction of the back-bead in gas metal arc welding. Multiple regression analysis and artificial neural network were used to predict the weld geometry. These geometry predictions showed low error which can be applied for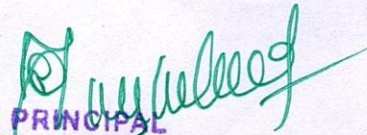 real welding process. Palani and Murugan [3] studied the selection of process parameters in pulsed gas metal arc welding, where the important parameters in pulsed gas metal arc welding are studied.

Abbasi et al. [4] studied the effect of MIG welding parameters on the weld bead and shape characteristics on mild steel specimen and concluded that shape factor increases with increase in welding speed. Ganjigatti et al. [5] made an attempt to obtain a relation between input and output parameters using regression analysis in MIG welding process. Mayur S et al. [6] conducted experiments on Al 5083 using TIG welding to find the tensile strength.

S C Juang et al. [7] used Taguchi method to reduce the number of experiments and welding is done to find the bead geometry. Biswajit Das et al. [8] investigated the effect of various process parameters on depth of penetration using MIG welding. I S Kim et al. [9] studied the relation between process parameters and bead geometry in robotic CO_2 arc welding process. Sanjay Kumar et al. [10] studied the effect of eccentricity and arc rotation on weld bead geometry in pulsed GMAW process. From the literature, it is observed that mathematical models are not available for prediction of side penetration and dilution for narrow v-groove butt joint welding. So, in the present work, an attempt is made to develop the mathematical model for predicting the side penetration and dilution using single pulsed gas metal arc welding.

II. EXPERIMENTAL PROCEDURE

For the experimental study, aluminium alloy 5083 H111, plate thickness 6 mm is used as base material. The aluminium alloy of 5000 (Al-Mg) series find their applications in production of vessel hulls, super structures, structural members, vessels, tanks and many other applications. The filler wire used for the welding is aluminium alloy 5183 of 1.2 mm dia. The chemical composition of the base material and filler wire is shown in Table 1.

The Idea of a Nation: A Post-Colonial study
of Amitav Ghosh's *The Glass Palace*

Anand Dampella,
English Language Instructor
Technical and Administrative Training Institute,
Barka, Sultanate of Oman

Abstract

Colonialism had condemned millions to a life of subservience and dispossession. At this dismal situation, the anti-colonial nationalism promised a new dawn of independence and political self-determination for colonized peoples. In the twentieth century, the myth of nation has proved highly potent and productive during several struggles against colonial rule. Through the development of created and structured myths, the nation became highly mobilized as a powerful symbol which anti-colonial movements used to organize against colonial rule. Amitav Ghosh uses his novel, *The Glass Palace,* to unveil how the colonial intrusion had imbued the spirit of nationalism in unifying the people irrespective of caste, creed, class or regional disparities.

Keywords

Colonialism, Myth of Nation, Anti-Colonial movements, Nationalism.

The idea of 'nation' is basically a western construct. This influential statement on the idea of the nation was first delivered in 1882. It emerged with the growth of western capitalism and industrialization and was a fundamental component of imperialist expansion. On the world map, each nation is separated from the other by a border. They are planned by the people and built upon particular foundations. So, a nation is primarily an idea.

The centrality to the idea of the nation lies in the notions of collectiveness and belonging, a mutual sense of community that a group of individuals imagines it shares. This sense of mutual, national belonging-ness is nurtured often by the performance of various national narratives, rituals and symbols that stimulate an individual's sense of being a member of a select group. Symbols like the national flag and national anthem are part of

Factors influencing the removal of fluoride from aqueous solution by Pithacelobium dulce Carbon

K. A. Emmanuel[a]*, A. Veerabhadrarao[b], T. V. Nagalakshmi[c], M. Gurupratap Reddy[d], P. P. Diwakar[b] and Ch. Sureshbabu[e]

[a]Department of chemistry, Sir C.R.R.College, Eluru,W.G.District, A.P. India
[b]Department of Physics ,Sir C.R.R.College,Eluru,W.G.District, A.P. India
[c]Department of Chemistry, P.P.D.C.E.T, Nunna, Krishna District, A.P. India
[d]Department of English, Sir C.R.R.College,Eluru,W.G.District, A.P. India
[e]Department of Eng. Chemistry, Eluru College of Enng & Tech, Eluru-7

ABSTRACT

The aim of this research work is to develop a new method for the removal of fluoride, from aqueous solutions by using indigenously prepared low cost activated carbon like Pithacelobiumdulce carbon (PLDC). The effects various factors like pH, dose of the adsorbent, adsorbate concentration and contact time have been investigated using a batch adsorption technique. The amount of fluoride removal increased with decrease in the initial concentration of fluoride and also increased with increase in contact time, amount of adsorbent used and the initial pH of the solution. Adsorption data were modeled using the Freundlich and Langmuir adsorption isotherms and followed first order kinetic equation –dF/dt= Kr (F). The experimental results produced a straight line fit with a relatively good correlation coefficient (R^2) indicating the acceptability of the model for the studied indigenously prepared activated carbon fluoride system. The kinetics of adsorption was found to be first order with regards to intra-particle diffusion rate.

Keywords: Adsorption; Activated carbons-indigenously prepared; Freundlich and Langmuir adsorption isotherms; Intra-particle diffusion

INTRODUCTION

Fluoride in drinking water has an intense effect on teeth and bones. Fluoride displaces hydroxide ions from hydroxyapatite, $Ca_5 (PO_4)3OH$, the principal mineral constituent of teeth (in particular the enamel) and bones, to form the harder and tougher fluoroapatite, $Ca_5 (PO_4)3F$. This will be useful in strengthening the enamel when it is present in low quantity. However, fluoroapatite is an order of magnitude less soluble than hydroxyapatite, and at high fluoride concentration the conversion of a large amount of the hydroxyapatite into fluoroapatite makes the teeth and (after prolonged exposure) the bones denser, harder and more brittle. In the teeth this causes mottling and embrittlement, a condition known as dental fluorosis. With prolonged exposure [1] at higher fluoride concentrations dental fluorosis progresses to skeletal fluorosis. Due to the industrial revolution high concentration of fluoride in water bodies causes a great damage to human life. High fluoride concentrations in groundwater, up to more than 30 mg/L, occur widely, notably in the United States of America, Africa and Asia [2-11]. Indigenously prepared activated carbons play a vital role in adsorption.

The surface chemical structure and their large surface area allow them to be used in a wide variety of industrial applications, some of the most important dealing with the environmental field and particularly with water purification

Research Article

Removal of Cationic Textile Dye (C.I. Number 11105) from Aqueous Solution by Adsorption on to Prepared Activated Carbon

T. V. Nagalakshmi[1]*, K.A. Emmanuel[2], Ch. Suresh Babu[3] and Ch. Chakrapani[4]

[1]Department of chemistry, Acharya Nagarjuna University, Nagarjuna nagar, Guntur-522510, A.P., India
[2]Department of Chemistry, Sir C R Reddy Autonomous College, Eluru-534 007, A.P., India
[3]Department of Science & Humanities, Eluru College of Engineering & Technology, Eluru-534004, A.P., India
[4]Department of Basic science & Humanities, Gudlavalleru Engineering College, Gudlavalleru-521356, A.P., India

Abstract

Activated carbon adsorbent was prepared from jackfruit waste and named as JC_{HNO3}. Batch sorption experiments were carried out with JC_{HNO3} for the removal of cationic dye Basic Blue 41(BB41) from its aqueous solution. The effect of adsorbent mass, particle size, solution P^H contact time and initial dye concentration were studied. It has been found that, solution P^H greatly influence sorption process JC_{HNO3} was characterized by BET, SEM and FTIR analyses. The BET surface area of JC_{HNO3} was found to be $987m^2g^{-1}$. The Frendlich, Langmuir, Tempkin and Dubinin-Radushkerich (D-R) Isotherms were used to describe adsorption equilibrium.

The results indicated that Langmur Isotherm was best suited. The kinetics of adsorption process was examined using pseudo-first order, Pseudo- second order, Intra particle diffusion, pore distribution and Elovich models. The adsorption process can be best described by pseudo-second order model.

Keywords: Adsorption, Basic Blue41, SEM, Isotherms, kinetics.

*Correspondence
Author: T. V. Nagalakshmi
Email: mannava_laxmi@yahoo.co.in
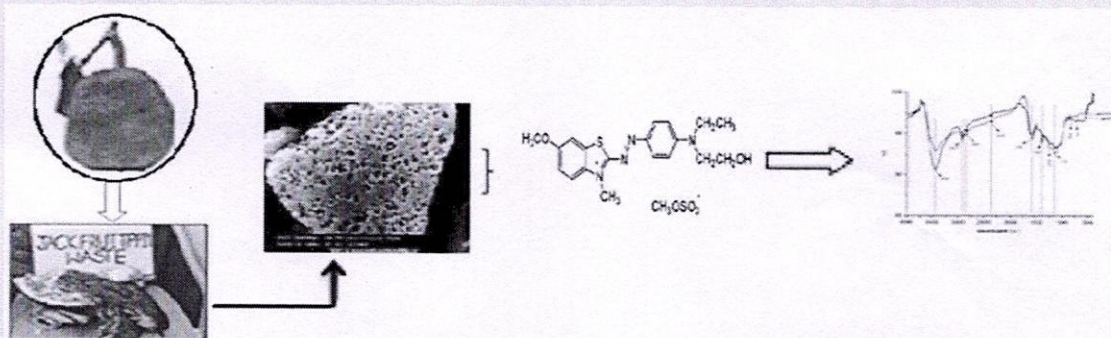
Introduction

Textile dyes have complex aromatic molecular structures. If untreated textile effluents are discharged to near-by water bodies, those molecular structures behave inert and do not bio-degradable [1]. Different types of conventional waste water treatments like coagulation, flocculation, filtration, oxidation (or) reduction and complex formations are costly textile effluent treatment process [2]. Adsorption of these dyes on to activated carbon is the one of the key technique to get clean water. As commercial activated carbon was expensive, researches are showing interest to find alternate sources like Pine cone [3], Coaca shell [4] Pomegranate peel [5], Coconut shell [6], Rice husk [7] for preparation of low cost activated carbons.

In 2012 Asia-Pacific Association of Agricultural Research Institutions (APAARI) stated that, the cultivation land for Jackfruit in India was more than in one lakh hectares [8]. The waste produced from this fruit, if not properly dispose, it leads to pollution. So in the present study Jackfruit pechiparai-1 waste was selected to prepare activated carbon and is efficiency in removing Basic Blue 41 dye from aqueous solution was tested.

STUDY ON EARTHQUAKE RESISTANT BUILDINGS ON GROUND SURFACE BY USING E-TABS

MALLA KARTHIK KUMAR[1], VANKA SRINIVASA RAO[2], KUSUMA SUNDAR KUMAR[3]

[1](MTECH (SE) student department of civil engineering Usha Rama college of engineering and technology)
[2](ASSOCIATE PROFESSOR department of civil engineeringUsha Rama college of engineering and technology)
[3](PROFESSOR & HEAD OF THE Department of civil engineeringUsha Rama college of engineering and technology)

ABSTRACT: *In many parts of India it is common practice to construct buildings on hill slopes, if there is a natural hill sloping terrain. The buildings on a sloping terrain undergo severe torsion under earthquake excitations due to considerable variation in the height of ground floor columns. Buildings constructed on hill slopes are highly unsymmetrical in nature. In the present study, three groups of building (i.e. configurations) are considered, out of which two are resting on sloping ground and third one is on plain ground. The first one is set back buildings and next two are step back and step back-set back buildings. The slope of ground is 10 degree with horizontal, which is neither too steep nor too flat. The height and length of building in a particular pattern are in multiple of blocks (in vertical and horizontal direction), the size of block is being maintained at 5m x 5 m x 4m. The depth of footing below ground level is taken as 2 m where, the hard stratum is available. Earthquake analysis has been carried out by Equivalent lateral force method (static method) or Dynamic analysis.' The static method is the simplest method with less computational effort. Dynamic analysis should be performed for regular buildings greater than 40 m in height in zones IV and V, and those greater than 90 m in height in zones II and III. For irregular buildings higher than 12 m in zones IV and V, and those greater than 40m in height in zones II and III, dynamic analysis is to be performed. In present case its height doesn't exceed 40m in any case. Using the analysis results various graphs were drawn between the Storey displacements, base shear, bending moment and torsion, being developed for the building on plane ground and sloping ground and the results were compared.*
KEYWORD: *E-TAB*

INTRODUCTION

On the earth surface, everyone is aware that many natural disasters such as earthquakes, floods, tornadoes, hurricanes, droughts, and volcanic eruptions occurs of-all natural disasters the least understood and most destructive are earthquakes. The annual losses due to earthquakes are very large in many parts of the world. They not only cause great destruction in terms of human casualties, but also have a tremendous economic impact on the affected area. Although the incidents of earthquakes of destructive intensity have been confined to a relatively few areas of the world, the catastrophic consequences of the few that have struck near centers of population have stressed on the need to provide adequate safety against this most terrible nature's quirks. India had witnessed several major disasters due to earthquakes over the past century. In fact more than 50 percent of the country is considered prone to severe earthquakes. The north - east region of the country as well as the entire Himalayan belt is susceptible to great earthquakes of magnitude more than 8.0 the main cause of earthquakes in these regions is due to the movement of the Indian plate towards the Eurasian plate at the rate of about 50 mm per year. Besides the Himalayan region and the Indo-Gangetic plains, even the peninsular India is prone to severe earthquakes as clearly .illustrated by the Koyna (1967), the Latur (1993), and the Jabalpur (1997) earthquakes, Sumatra earthquake (2004) Kashmir earthquake (2005).and Nepal earthquake (2015) The Bhuj earthquake is considered to be the largest intra-plate earthquake ever recorded. The 2001 Bhuj earthquake had great implications for earthquake hazard, not only in India, but also in other parts of the world.

REPRESENTATION OF STIFFNESS AND MASSES ABOUT A COMMON REFERENCE AXIS

In a building with rigid floor diaphragm, the following three situations may arise with respect to the centre of mass and centre of rigidity: Coincident centre of mass and centre of rigidity of each floor lie on the same vertical axis. In this case the building does not undergo torsional motion under lateral excitation and the standard stiffness approach for each storey is applicable. This is applicable to regular and symmetrical buildings. Center of mass of each floor lies on the same vertical axis, whereas the center of rigidity of each floor does not

HEART DISEASE DIAGNOSIS USING PREDICTIVE DATA MINING

M.Swathi Lakshmi

MTech Student,

SRKIT,Vijayawada,India

marisettyswathi@gmail.com

Dr D.Haritha

Professor in CSE Department

SRKIT,Vijayawada,India

harithadasari@rediffmail.com

Abstract

With the fast increasing rates of heart disease or Cardiovascular Disease the classification and prediction of heart diseases is of significant work. Computerized classification of heart diseases is more useful for the physicians for fast diagnosis. Prediction of heart disease accurately can help in saving the patients lives. In this paper various existing data mining techniques are applied, analyzed for classification and prediction of heart disease. The dataset used is the Cleveland Heart Database taken from UCI learning data set repository. The findings of this study revealed all the models built from Naïve Bayes classifier and SVM have high classification accuracy and are generally comparable in predicting heart disease cases.

Keywords: ANN, Data Mining, ROC.

I.INTRODUCTION:

Health is rooted in everyday life. The healthcare industry is one of the world's largest and fastest-growing industries and is the back bone of our society. For this industry a major challenge is providing quality services at reasonable prices. Diagnosing a patient's condition accurately with appropriate treatment, monitoring and evaluating the effectiveness of the treatment on a regular basis is one of such quality service. At present, the number of people suffering with heart disease is on a rise. **Cardiovascular disease** (CVD) is a class of the heart or blood vessel diseases. Cardiovascular disease includes coronary artery diseases (CAD) like heart attack, stroke, angina, hypertensive heart disease, rheumatic heart disease, cardiomyopathy, atrial fibrillation, congenital heart disease,8].This leads to number of deaths these days. At an early stage proper diagnosis is very crucial task. The

advancement of information technology, software development and system integration facilitated the development of multifaceted computer systems. One of such new powerful technology is Data mining. Data mining, deals with the extraction of hidden information from large databases, with great potential to help companies to focus on the most important information present inherently in their data warehouses. Data mining tools allow organizations to make proactive, knowledge-driven decisions based on the prediction of future trends and behaviors. The automated, prospective analyses offered by data mining outraged the analyses provided by retrospective tools typical of decision support systems. Data mining tools can answer several questions that traditionally were too time consuming to resolve in less time in an efficient manner.

Section II briefs the previous work done in the area of Heart Disease Prediction using Data mining techniques. Section III describes various Data mining techniques. The architecture of using Data mining techniques for heart disease prediction is explained in Section IV. The results and efficiency of the various techniques are discussed in Section V.

II.LITERATURE SURVEY

In 2015 T.Georgeena et al., applied Apriori Algorithm Heart Disease Diagnosis System Using Apriori Algorithm". Where k-item sets are used to explore (k+1) item sets. The data will judge the efficiency and correction rate of the algorithm. They have reduced six attributes to four which will be employed for the prediction of heart conditions [14].

In 2014 B.Venkatalakshmi et al. applied Predictive data mining techniques Naïve Bayes and Decision

PRINCIPAL
SRK Institute of Technology
ENIKEPADU, VIJAYAWADA-521 108.

REVIEW ON BASTION HOSTS

G.Vijayababu[1], D.Haritha[2], R.Satya Prasad[3]

[1] Research Scholar, Jawaharlal Nehru Technological University, Kakinada, Andhra Pradesh, INDIA

[2] Professor, S.R.K. Institute of Technology, Vijayawada, Andhra Pradesh, INDIA

[3] Associate Professor, Acharya Nagarjuna University, Guntur, Andhra Pradesh, INDIA

g.vijayababu777@gmail.com, harithadasari@rediffmail.com, profrsp@gmail.com

Abstract

Bastion hosts play a significant role in providing secure information flow between the private and public networks and thus secures the internal network from the external intruders. Bastion hosts sit on the network perimeter and can play several roles of Bastion hosts like router, DNS, FTP, SMTP, News, and/or Web servers. The different configurations and locations that the bastion hosts can be hosted make difference in their performance in different situations. This paper discusses the various bastion host architectures and building of bastion host in detail. The significance of the bastion host hardening is described.

Keywords: Bastion Host ,DMZ, Firewall, Bation host hardening

1.INTRODUCTION

Bastion Hosts are designed for secure information flow between public network and private network. Bastion hosts sit on the network perimeter. Bastion host is a server and it is meant to provide access to a private network from an external network, like Internet. The system is on the public side of the demilitarized zone (DMZ). The hardening of Bastion hosts resists attacks from external sources thus protecting the internal network. Hardening involves securing the machine, configuring the required services, installing the necessary patches, controlling the services and protocols, locking the user accounts via defining and modifying the Access Control Lists (ACLs),disabling all unnecessary TCP and UDP ports and running the security audit to establish a baseline. Frequently all these functionalities are critical to the network security system. Typically, the bastion host serves acts as a platform for an application level gateway (proxy) or circuit level gateway.
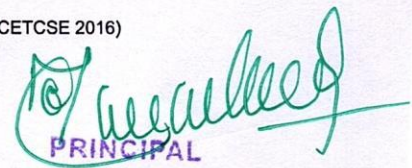
The application level gateway (proxy) is a firewall and it allows users to run specific service like FTP, TELNET, HTTP etc. or specific connection by implementing authentication, filtering and logging. Each specific service has it's own specific proxy. For example, if only HTTP connection is allowed to the Internet for internal network users, then HTTP proxy must be allowed, no other proxy is allowed. Users who need to go to Internet create a virtual circuit with the proxy server and the proxy server sends the request to connect to a specific site. Proxy server protects or hides the internal network by sending the request with its own IP. Only the IP of the proxy server is visible to the external world. After receiving the response from the Internet it sends it back to its intended internal user via the virtual circuit. The proxy is aware of the type of data it handles and can give protection to it.

The circuit-level gateway can be a stand-alone system or an application-level gateway with special functionality for certain applications. As with an application gateway, a circuit-level gateway does not permit an end-to-end TCP connection. Instead it makes two TCP connections, one between TCP user on the inner host and itself and one between itself and a TCP user on an outside host. Once the two connections are established, the gateway typically relays TCP segments between those two connections without examining the contents. The Gateway secures by accurately determining which connections are to be allowed.

Circuit-level gateway is typically used when the system administrator trusts the internal users. The gateway can be configured to support application- level or proxy service on inbound connections and circuit-level functions for outbound connections. In this configuration, the gateway can incur the overhead of examining incoming application data for forbidden functions but does not incur that overhead on outgoing data.The bastion host hardware platform takes support of a secure version of operating system and makes it a hardened system.

Only the essential services that are considered by the network administrator are installed on the bastion host which include proxy applications for DNS,FTP, HTTP, and SMTP. Prior to allowing access to the proxy services by the user, the bastion host may require additional authentication. In addition, each proxy service may require its own authentication before granting user access. The configuration of each proxy is done in such a way that it supports only a subset of the standard application's command set. The configuration of each proxy is done to allow access only to specific host systems. Detailed

An Enhanced Image retrieval Technique based on Edge-Orientation Technique

Ch.Sushmitha[1] , Dr. D. Haritha[2]

[1]M.Tech Student, Dept of CSE , SRK Institute of Technology, Vijayawada, AP, India.
E-mail: susmithachirumamilla9@gmail.com
[2]HOD, Dept of CSE, SRK Institute of Technology, Vijayawada, AP, India.
Email: haritha@rediffmail.com

Abstract

With the tremendous development in Networking and Multimedia technologies, Image Retrieval plays significant roleand is used for browsing, searching and retrieving images from a large database of digital images. Image Retrieval techniques utilize annotation methods of adding metadata such as captioning, keywords or descriptions to the images. The manual image annotation is much time consuming laborious and expensive.As the data bases size increases, annotation becomes a tedious task. Thus automatic image annotationhas drawn the attention of the researchers in recent years.. The increase in social web application and the semantic web drawn attention of researchers in the development of several web-based image retrieval tools. This paper presents an easy, efficient image retrieval approach using a new image feature descriptor called Micro-Structure Descriptor (MSD). The microstructures are defined based on an edge orientation similarly while the MSD is built based on the underlying colors in micro-structures with similar edge orientation.In this method of Image retrieval the MSD extracts features by simulating human's early visual processing by effectively integrating color, texture, color lay out information and shape. The proposed MSD algorithm has high indexing performance and low dimensionalityas it has only 72 dimensions for full color images.The technique is examined on Corel datasets with natural images; the results demonstrate that this image retrieval method is much more efficient and effective than reprehensive feature descriptors, such as Gabor features and Multi Texton Histograms.

Index Terms— Image retrieval,, Edge orientation Micro-Structure Descriptor

1.INTRODUCTION

Image Identification is an application area where the techniques of Image Retrieval are used. Image identification or copy detection is given a query image, finding the original source from where it possibly derives, together with its relevant metadata. The metadata associated can becontext, keywords, titles, authors and copyright information, etc.The document is identified based on its context, and the lack of metadata reduces its usefulness to a great extent. This necessitates devising reliable ways of retrieving all the information related to a document, when only the visual evidence is available. Organizations like museums, archives and news agencies, are often asked to perform the identification of images fromnewspaper clippings, articles, books, published papers, thesis and, where the references are missing, tosummary, outdated or incorrect. One of the most prominent applications of image identification is the tracking of the documentscontaining images, either to fetch the historic significance of a given document, or to enforce the copyright. Another way of the handling this situation is separating the image and its metadata, within the boundaries of an organization, at one of the steps of a complex workflow. In this case, images with lacking quality or incorrect metadatawill be identified and rectified. Geometric transforms like translations, rotations and scale changes can be used. Sometimes, trapezoidal and spherical distortions resulting from the photographic reproduction may be present.

Photometric and colorimetric transforms are used to change brightness, contrast, saturation, color, and occlusion effects.The image may be cropped image or may contain labels, stamps, annotations, censor bars, etc.. The image maycontain compression artifacts, electronic noise from cameras and scanners. Theacquisition of the image, intrinsic quantization effects of digitization, half toning methods used for printing and more patterns; as well as reprinting and rescanning operations may be a source of important distortion. The large variety of transformation types and intensities makes the task very challenging.Images and graphics provide significant amount of information and are widely usedin human digital communication. With the rapid development of digital imaging techniques and internet facility, and availability oflarger set of images to public, the demand for effective and efficient image indexing and retrieval methods is increasing at rapid rate.In pattern recognition and artificial intelligence areas, image retrieval has become one of the most popular topics. An image retrieval system is used for searching and retrieving images from a bulk volume of digital images.

Image retrieval methods can be based on text, content and semantics. Human visual perception can be visualized as a process of interactions among neurons, which selects preattentive properties like low level visual features rapidly and suppresses irrelevant properties. Theclose association of human visual attention system with low level visual features can be used for image retrieval and is an important and still

Detection and Prevention of Blackhole Attack, Wormhole Attack in MANET Using ACO

A. Radhika, Dr. D.Haritha

Abstract— (Mobile Adhoc network) is a infrastructure less network used for wireless communication. MANET can be built with the mobile nodes which can move anywhere at any time. This results into the dynamic topology of MANET. Each node is responsible for routing the message from one node to the other like a router, causes network more vulnerable to the different attacks. In this paper we will discuss Black Hole Attack a type of DOS attack and Worm Hole Attack. The emphasis of this paper is find detection method and prevention of these attacks in manets using Antnet Routing algorithm based on Ant Colony Optimization(ACO) framework.

Index Terms— DOS attack, Black hole attack,Worm hole attack

I. INTRODUCTION

A mobile ad hoc network (MANET) is relatively new communication paradigm. MANET has received spectacular consideration because of their self-configuration and self-maintenance. Early research assumed a friendly and cooperative environment of wireless network. As a result they focused on problems such as wireless channel access and multi hop routing. But security has become a primary concern to provide protected communication between mobile nodes in a hostile environment.

Although mobile ad hoc networks have several advantages over wired networks, on the other side they pose a number of non-trivial challenges to the security design as they are more vulnerable than wired networks [1]. These challenges include open network architecture, shared wireless medium, demanding resource constraints, and, highly dynamic network topology.

In this paper, we have considered a fundamental security problem in MANET. To protect its basic functionality to deliver data bits from one node to another. Nodes help each other in conveying information to and fro and thereby creating a virtual set of connections between each other. Routing protocols play an very imperative role in the creation and maintenance of these connections.

In contrast to wired networks, each node in an ad-hoc networks acts like a router and forwards packets to other peer nodes. The wireless channel is accessible to both legitimate network users and malicious attackers. As a result, there is a blurry boundary separating the inside network from the outside world.

Many different types of routing protocols have been developed for ad hoc networks and have been classified into two main categories as Proactive (periodic) protocols and

A.Radhika, (Ph.D), Sr.Asst Professor,SRK Institute of Technology
Dr. D.Haritha, Ph.D,Professor& Head,SRK Institute of Technology

Reactive (on-demand) protocols which has been clearly explained in [2] and [3]. Wireless ad hoc networks are vulnerable to various attacks. These include passive eavesdropping, active interfering, impersonation, and denial-of-service. A single solution cannot resolve all the different types of attacks in ad hoc networks. In this paper, we have designed a novel method to detect black hole attack: ACO, which isolates that malicious node from the network. We have complemented the reactive system on every node on the network. This agent stores the Destination sequence number of incoming route reply packets in the routing table and calculates the threshold value to evaluate the dynamic training data in every time interval as in [4]. Our solution makes the participating nodes realize that, one of their neighbors is malicious; the node thereafter is not allowed to participate in packet forwarding operation[5].

II. ANTNET

AntNet is an instance of an ACO algorithm for distributed and adaptive routing in Communication networks. In distributed adaptive routing at each network node the routing policy is continually adapted to the variations in the input traffic patterns.

The basic principle of an ant routing algorithm is that ants deposit on the ground a pheromone, while they roam looking for food. Ants can also smell pheromone and tend to follow with higher probability those paths characterized by strong pheromone concentrations. The pheromone trails allow the ants to find their way to the food source (or back to the nest). The same pheromone trails can be used by another ants. This pheromone-trail-following behaviour gives raise to the emergence of the shortest path.An ant routing algorithm can be briefly described in the following way in Fig. 1
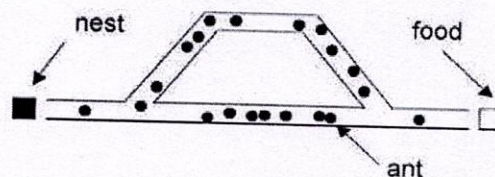

Fig 1 : Basic principle of ant routing paradigm.

From each network node, a number of discovery packets (forward ants) are sent towards the selected destination nodes. They propagate concurrently and independently. In each node routing tables consists of stochastic tables, used to select next hops according to weighted probabilities. These probabilities are calculated on the basis of the pheromone trails left by previous ants which is as shown below:

www.ijeas.org

Detection and Prevention of Blackhole Attack, Wormhole Attack in MANET Using ACO

A. Radhika, Dr. D.Haritha

Abstract— (Mobile Adhoc network) is a infrastructure less network used for wireless communication. MANET can be built with the mobile nodes which can move anywhere at any time. This results into the dynamic topology of MANET. Each node is responsible for routing the message from one node to the other like a router, causes network more vulnerable to the different attacks. In this paper we will discuss Black Hole Attack a type of DOS attack and Worm Hole Attack. The emphasis of this paper is find detection method and prevention of these attacks in manets using Antnet Routing algorithm based on Ant Colony Optimization(ACO) framework.

Index Terms— DOS attack, Black hole attack,Worm hole attack

I. INTRODUCTION

A mobile ad hoc network (MANET) is relatively new communication paradigm. MANET has received spectacular consideration because of their self-configuration and self-maintenance. Early research assumed a friendly and cooperative environment of wireless network. As a result they focused on problems such as wireless channel access and multi hop routing. But security has become a primary concern to provide protected communication between mobile nodes in a hostile environment.

Although mobile ad hoc networks have several advantages over wired networks, on the other side they pose a number of non-trivial challenges to the security design as they are more vulnerable than wired networks [1]. These challenges include open network architecture, shared wireless medium, demanding resource constraints, and, highly dynamic network topology.

In this paper, we have considered a fundamental security problem in MANET. To protect its basic functionality to deliver data bits from one node to another. Nodes help each other in conveying information to and fro and thereby creating a virtual set of connections between each other. Routing protocols play an very imperative role in the creation and maintenance of these connections.

In contrast to wired networks, each node in an ad-hoc networks acts like a router and forwards packets to other peer nodes. The wireless channel is accessible to both legitimate network users and malicious attackers. As a result, there is a blurry boundary separating the inside network from the outside world.

Many different types of routing protocols have been developed for ad hoc networks and have been classified into two main categories as Proactive (periodic) protocols and

A.Radhika, (Ph.D), Sr.Asst Professor,SRK Institute of Technology
Dr. D.Haritha, Ph.D,Professor& Head,SRK Institute of Technology

Reactive (on-demand) protocols which has been clearly explained in [2] and [3]. Wireless ad hoc networks are vulnerable to various attacks. These include passive eavesdropping, active interfering, impersonation, and denial-of-service. A single solution cannot resolve all the different types of attacks in ad hoc networks. In this paper, we have designed a novel method to detect black hole attack: ACO, which isolates that malicious node from the network. We have complemented the reactive system on every node on the network. This agent stores the Destination sequence number of incoming route reply packets in the routing table and calculates the threshold value to evaluate the dynamic training data in every time interval as in [4]. Our solution makes the participating nodes realize that, one of their neighbors is malicious; the node thereafter is not allowed to participate in packet forwarding operation[5].

II. ANTNET

AntNet is an instance of an ACO algorithm for distributed and adaptive routing in Communication networks. In distributed adaptive routing at each network node the routing policy is continually adapted to the variations in the input traffic patterns.

The basic principle of an ant routing algorithm is that ants deposit on the ground a pheromone, while they roam looking for food. Ants can also smell pheromone and tend to follow with higher probability those paths characterized by strong pheromone concentrations. The pheromone trails allow the ants to find their way to the food source (or back to the nest). The same pheromone trails can be used by another ants. This pheromone-trail-following behaviour gives raise to the emergence of the shortest path.An ant routing algorithm can be briefly described in the following way in Fig. 1
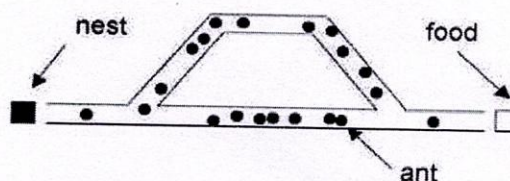

Fig 1 : Basic principle of ant routing paradigm.

From each network node, a number of discovery packets (forward ants) are sent towards the selected destination nodes. They propagate concurrently and independently. In each node routing tables consists of stochastic tables, used to select next hops according to weighted probabilities. These probabilities are calculated on the basis of the pheromone trails left by previous ants which is as shown below:

Scalable Approaches for Duplicate Detection and Deliver the Results in Quickly

Kolakaluri John Nikhel, M.Tech, Mail Id: nikheljohn123@gmail.com

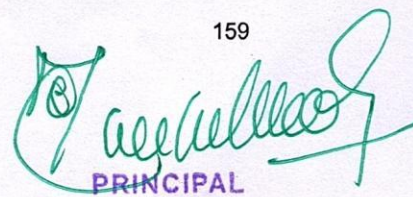Bandi Ashalatha, M.Tech (Ph.D), Assistant Professor, Mail Id: latha009asha@gmail.com

SRK Institute Of Technology, Enikepadu, Vijayawada, Krishna(Dt)

ABSTRACT:

If the intense issues are faced in number of applications with personal details management, client affiliation management, and data mining if the duplicate detection. It deals with the varied duplicate detection record techniques in each and every small and large datasets. Find the duplicity with low time of execution process. Additionally without disturbing the dataset quality, strategies like Progressive interference and Progressive Neighborhood are used. In progressive sorted neighborhood technique is additionally invoke as PSNM used of this model for locating or detection of the duplicate during in a parallel process. The progressive block algorithmic program works on the large datasets wherever finding duplication needs the huge of time. These algorithms are used to enhance duplicate detection system and efficiency is doubled over the standard duplicate detection technique using this algorithmic program. Many different strategies of information analysis are studied here with varied approaches for duplicate detection.

1. INTRODUCTION

Whenever the duplicates should be found from dataset we go for data processing. The information mining takes its'design from Knowledge Discovery in database (KDD) within the field of computer science. Within the recent past, duplication is turning into a major threat in the majority the domains. Due to this Duplication the information received is additional and therefore memory limitation becomes arduous. Therefore admin finds it tough to manage the information sets. The duplicate detection processes are expensive. The common people keep dynamical their portfolio despite retailers giving several product catalogs. Thus there happens duplication in wide selection and every one the organizations cannot afford for the de-duplication method because it is expensive. The adaptive techniques improve the potency in detecting the duplication however these techniques cannot blank up to the level of progressive techniques. The Progressive techniques could method larger dataset briefly span of time and therefore the quality of knowledge is additionally good comparatively. The Progressive duplicate detection makes it completely different from the normal approach by yielding

A System for Secured Data Retrieval in Hostile Regions using CP-ABE Based in Ad Hoc Disruption- Tolerant Networks

A.Radhika, D. VaraLaxmi
[1]Sr.Asst.Professor, Dept. of CSE
[2]M.Tech(CS),Dept. of CSE, S.R.K Instt. Of Technology Andhra Pradesh, INDIA.

Abstract-Generally Networks operated in ad hoc mode suffer isolated network connectivity in the Hostile Military environments like battlefield. Deployment of Disruption-tolerant networks (DTN) enhances the connectivity between wireless devices carried by soldiers in battle field, this provides them to communicate effectively and share the information confidently. Cipertext -policy attribute based encryption (CP-ABE) is effective cryptographic technique to access control issues. Ad hoc network are decentralized and resource constrained networks, applying CP-ABE to such networks is a challenging issue, in turn it introduces new security and privacy issues related to attribute revocation, coordination of attributes, and key escrow. This paper mainly focuses on a secure data collection mechanism using CP-ABE for ad hoc DTNs where more than one key authority manages their attributes dynamically and independently. We analyzed the proposed mechanism and applied to the disruption-tolerant military network to access the information securely.

Keywords: DTNs, CP-ABE, Ad hoc Network, Key Management.

I. Introduction

In many Military scenarios, military communication networks are decentralized by nature and connected via wireless devices carried by soldier, due to some environmental factors, and mobility they are disconnected, and jammed. To overcome researchers are finding new technologies like Disruption-tolerant network (DTN), these networks allows nodes to communicate in distinct environment conditions [2]–[3]. In multi hop ad hocnetworks data should be forwarded via intermediate nodes, the data should be stored at these nodes should be retrieved securely until the connection is established between source and destination. An approach of storage of data at nodes which can be accessed only by authorized nodes was proposed by Chuah [4] and Roy [5]. Confidentiality and integrity should be maintained in military application by applying cryptographic techniques [6]. Based on ad hoc network and hostile network features it is required to define new data policies based on user attributes and roles managed by different key management authorities. In real time DTNs can be used in military communication where a commander can store and forward the data to particular battalion and the only specified battalion can retrieve the data securely later. In DTN architecture show in fig 1 we can observe that multiple authorities can issue and manage their own attribute key in the absence of centralized authority [7]. Beside many encryption techniques attribute based encryption best suit for DTNs for secure data collection. The main feature of ABE is it provides access control over data based on access policies and qualified attributes among cipher texts and user private keys [8]-[10]. CP-ABE is a scalable approach for encryption of data where encryptor defines the attribute set which decryptor uses to decrypt the message. So based on the security policy different users are allowed to decrypt different pieces of data [10].

The major issue with ABE is applying this mechanism to DTNs which are decentralized, in the process it may lead to several privacy and security issues. In military networks due to mobility of nodes (battalion from one region to other) may compromise users private keys, the alternate to this is key revocation for every attribute through which it may achieve security. The new problem is these keys should generate whenever a node moves from one region to another. The other challenge is key escrow problem. Every key authority has a master secret key through which all user data can be decrypted, in case of key authority compromised by attackers in military communication network. This will be serious threat for security and data confidentiality. Finally

ANALYSIS OF ENERGY EFFICIENCY IN WSN BY CONSIDERING SHM APPLICATION

Pawan Kumar*, Naresh Babu**, Vaibhav Jain*, Naveen Goel***

*Department of ECE, Vaish College of Engineering, Rohtak, India
**Assistant Professor, SRK Institute of Technology, Vijayawada,India
***Department of ECE, Maharaja Agrasen University, Baddi, India
Corresponding Author: Pawan Kumar, pawankr8732@gmail.com

Abstract-The wireless Sensor Network is composed of a significant number of autonomous nodes deployed in an extensive area. In WSN, the sensor nodes have a limited transmission range, processing speed and storage capabilities as well as their energy resources are also limited. In WSN all nodes are not directly connected. The primary objective for all kind of WSN is optimization of the network lifetime. It means to minimize the energy consumption in the WSN by considering reduction in the transmission power consumption during communication, with intelligent topology layouts and by minimizing the active links in the network. There are lots of applications of WSN out of which this research paper focuses upon the Structural Health Monitoring application in which 50 Meter bridge has been taken as a test application for the simulation purpose.

Keywords: WSN, SHM, Routing Protocols

1. INTRODUCTION

Wireless Sensor Network is the wireless network which is the combination of autonomous sensors to monitor or control environment conditions. Information that are to be collected or sensed are temperature, pressure, humidity, motion, heat, sound, light, electromagnetic field, vibration, images, pollutants etc.[1,2,3,4,5,6,7].The popularity of WSN has increased due to growth in Micro-Electro-Mechanical Systems (MEMS) technology. The concept of wireless sensor networks is based on a simple equation: Sensing + CPU + Radio = Thousands of potential applications [8].The sensor node has limited resources like energy, size, memory, computational power, communication range, bandwidth, so a large no of sensor nodes are distributed over a area of interest for collecting the information. So these nodes communicate with each other either directly or through intermediate nodes and thus form a network. So each node works as a router.

The concept of is to provide the path or route between source to sink via intermediate nodes. The central goal of the routing in the network layer is to find out the minimum cost path for the packets from source to the sink. Data are routed from one node to other node using routing protocols. Routing protocols specifies how routers (sensor nodes) communicate with each other. Routing algorithm chooses the routes between nodes. If WSNs nodes are more powerful or mains-powered devices in the vicinity, it is beneficial to utilize their computation and communication resources for complex algorithms and as gateways to other networks. New network architectures with heterogeneous devices and expected advances in technology are eliminating current limitations and expanding the spectrum of possible applications for WSNs considerably

2. WSN NODE ARCHITECTURE

2.1 Sensing Unit:

Sensing units are usually composed of two subunits: sensors and analog to digital converters (ADCs). Sensor is a device which is used to translate physical phenomena to electrical signals. Sensors can be classified as either analog or digital devices. There exists a variety of sensors that measure environmental parameters such as temperature, light intensity, sound, magnetic fields, image, etc. The analog signals produced by the sensors based on the observed phenomenon are converted to digital signals by the ADC and then fed into the processing unit [9].

2.2 Processing Unit:

The processing unit mainly provides intelligence to the sensor node. The processing unit consists of a microprocessor, which is responsible for control of the sensors, execution of communication protocols and signal processing algorithms on the gathered sensor data. Commonly used microprocessors are Intel's Strong ARM microprocessor, Atmel's AVR microcontroller and Texas Instruments' MP430 microprocessor. For example, the processing unit

Mitigation of Synchronization Errors in OFDM System under Frequency Selective Fading Channels

CH. DIVYA[1], DR. T. HARITHA[2], DR. S. GOWRI[3]

[1]PG Scholar, Dept of ECE, Prasad V. Potluri Siddhartha Institute of Technology, Vijayawada, AP, India,
E-mail: divyya.cherukuru@gmail.com.
[2]Associate Professor, Dept of ECE, Prasad V Potluri Siddhartha Institute of Technology, Vijayawada, AP, India,
E-mail: harithat4770@gmail.com.
[3]Professor & HOD, Dept of ECE, SRK Institute of Technology, Enikapadu, AP, India.

Abstract: frequency offset is responsive in orthogonal frequency division multiplexing. To avoid Inter carrier Interference and Inter Symbol Interference the cyclic prefix is added upon estimation of channel attenuation in coherent OFDM systems. A new technique has been proposed that includes time and frequency offsets. For frequency selective fading channels Bit error rate (BER) performance of OFDM system has been evaluated. By taking the fading factor into consideration, Simulation results reveal that BER for Gaussian channel is more improved related to Rician channel and Rayleigh channel. Performance of the system under Rician channel is considerable related to Rayleigh channel in real time scenarios.

Keywords: Harmonization, Time offset, Frequency Offset, OFDM.

I. INTRODUCTION

From the history of few years orthogonal frequency-division multiplexing (OFDM) systems have procured a high exertion[1]. In European digital broadcast radio system the OFDM is used[2]. The role of OFDM in mobile communication systems and digital broadcast television are currently being explored [3]. While Receiver need to consider two problems into account when OFDM is considered. The inequality of the oscillators in the transmitter and receiver is one and other is unknown time instant to start sampling a novel OFDM symbol. The timing offset in multi carrier systems is high when compared with single carrier systems and we have to recognize it. The attainment of symbol harmonization may be decreased if the signal is demodulated with an offset in the carrier frequency. A design of time and a frequency offset estimate may be achieved at the receiver with the help of pilot symbols known to the receiver, by increasing the average log-likelihood function. The joint Maximum Likelihood (ML) estimation of the timing and carrier-frequency offset in OFDM systems is to be evaluated in this paper.

II. SYSTEM MODEL

A. Signal Model of OFDM

Here the channel is assumed to be non-dispersive and the transmitted signal s(k) is determined by complex, additive, white Gaussian noise (AWGN) n(k) (i.e., $h_k = 1, \forall k \in 0,...,M-1$ only. Hence, the received data is

$$r(k) = s(k - \varphi)\, e^{j2\pi\sigma k/M} + n(k). \tag{1}$$

Apart from spaced M samples, the correlation between parts of pairs of samples yielded by cyclic prefix. The timing offset φ and carrier frequency offset σ information is with r(k) because it is not a white process or due to its probabilistic structure.

B. Awareness for Timing and Frequency Offset

The phase shifts generated by symbol time delays and channel are undistinguishable by a synchronizer[4]. The Range of time error requirements may be from the order of a sample to the part of a sample. If there is no frequency offset, the frequency response of each sub channel is zero at all other subcarrier frequencies, i.e., the sub channels do not interfere with one other [5]. The orthogonality between the tones is being damaged as a consequence of frequency offset. The obtained inter carrier interference (ICI) has been scrutinized[6]. The useful signal-to-noise ratio (SNR_e) due to both additive noise and ICI is shown to be low bounded by

$$SNR_s(\sigma) \geq \frac{SNR}{1 + 0.5947\, SNR \sin^2 \pi\sigma}\left(\frac{\sin \pi\sigma}{\pi\sigma}\right)^2 \tag{2}$$

Where $SNR = \sigma_s^2 / \sigma_n^2$,

$\sigma_s^2 \triangleq E\{s(k)^2\}$ and $\sigma_n^2 \triangleq E\{(n)^2\}$

A measure of frequency offset (σ) is the variation between the SNR and the (SNR_e). To gain (SNR_e) of 30 dB or higher in absence of additive noise the frequency offset (σ) must be $\leq 1.3 \times 10^{-2}$. Degradation SNR, D_{freq} due to frequency offset is comparative as

$$D_{freq} \cong \frac{10}{3\, ln10}(\pi\Delta fT)^2 \frac{E_b}{N_0} \tag{3}$$

PRINCIPAL
SRK Institute of Technology
ENIKEPADU, VIJAYAWADA-521 108.

LOW COMPLEX PAPR REDUCTION METHODS IN OFDM/OQAM SYSTEMS

Y.Buela Pramodini [1], P.Subha Sree [2]

[1] PG scholar, Department of ECE, SRK Institute of Technology College, Vijayawada, India

[2] Associate Professor, Department of ECE, SRK Institute of Technology College, Vijayawada, India

Abstract: *An Orthogonal Frequency Division Multiplexing (OFDM) is an attractive multi carrier modulation technique for wireless transmission systems. OFDM has many advantages immunity to impulse interference, robustness to channel fading, high spectral density, resistance to multipath, much lower computational complexity. The major drawback of OFDM is signal suffers a high Peak to Average Power Ratio (PAPR), a high PAPR easily makes the signal peaks move into the non-linear region of the RF power amplifier which causes signal distortion. The alternative-signal (AS) method, which directly leads to the independent AS (AS-I) and joint AS (AS-J) algorithms, is employed to reduce the PAPR of the OFDM/OQAM signal. The AS-I algorithm reduces the PAPR symbol by symbol with low complexity, whereas the AS-J algorithm applies optimal joint PAPR reduction among M OFDM/OQAM symbols with much higher complexity. To balance the performance and the computation complexity, we propose a sequential optimization procedure, which is denoted AS-S, which achieves a desired compromise between performance and complexity. Simulation results show better results over traditional state of art methods.*

Keywords: *OFDM, OQAM, PAPR, Alternative-Signal*

I. INTRODUCTION

OFDM, which is also popularly known as simultaneous MFSK, has been widely implemented in high-speed digital communications in delay dispersive environments. Basically it is a Multi-Carrier Modulation (MCM) technique. OFDM was first proposed by Chang, (1966). Chang proposed the principle of transmitting messages simultaneously over multiple carriers in a linear band-limited channel without ISI and ICI. The initial version of OFDM employed a large number of oscillators and coherent demodulators. In 1971, DFT was applied to the modulation and demodulation process by Weinstein and Ebert, (1971).

Recently, the demand for multimedia data services has grown drastically which drive us in the age of 4th generation wireless communication system. This requirement of multimedia data service where user are in large numbers and with bounded spectrum, modern digital wireless communication system adopted technologies which are bandwidth efficient and robust to multipath channel environment known as multi-carrier communication system. The modern digital multicarrier wireless communication system provide high speed data rate at minimum cost for many users as well as with high reliability. In single carrier system, single carrier occupies the entire communication bandwidth but in multicarrier system the available communication bandwidth is divided by many sub-carriers. So that each sub-carrier has smaller bandwidth as compare to the bandwidth of the single carrier system. These tremendous features of multicarrier technique attract us to study Orthogonal Frequency Division Multiplexing (OFDM). OFDM forms basis for all 4G wireless communication systems due to its huge capacity in terms of number of subcarriers, high data rate in excess of 100 Mbps and ubiquitous coverage with high mobility.

In this paper, we employ the alternative-signal (AS) method to reduce the PAPR of OFDM/OQAM signals. We first apply the traditional SLM scheme to the OFDM/OQAM systems to obtain the independent AS (AS-I) and joint AS (AS-J) algorithms. Specifically, AS-I reduce the PAPR of each OFDM/OQAM symbol independently, and AS-J applies joint PAPR reduction among M OFDM/OQAM symbols. AS-J intuitively should yield a better performance than AS-I. However, the computation complexity of AS-J exponentially increases with M, which is impractical. To balance the performance and the computation complexity, we propose a sequential AS (AS-S) algorithm, which adopts a sequential optimization procedure over time with the computation complexity linearly increasing with M. Simulation results will be provided to compare the performance among the three algorithms

Inter Carrier Interference Cancellation in OFDM Systems under Different Channeling Environments

N.Mounika[1], P.Ratna Bhaskar[2]

P.G. Student, Department of Electronics and Communication Engineering, SRKIT, Enikepadu, Vijayawada, India[1]

Assistant Professor, Department of Electronics and Communication Engineering, SRKIT, Enikepadu, Vijayawada, India[2]

ABSTRACT: Inter carrier Interference (ICI) is the most prevalent effect that is observed in orthogonal frequency division multiplexing (OFDM) systems. This may be due to the Doppler shift or phase noise. In this paper, a parallel cancellation algorithm is proposed in space frequency domain to mitigate the ICI. The performance of this approach is evaluated under different channeling environments. Experimental results show that the proposed space frequency parallel cancellation proves better in different SUI channeling environments when compared against the conventional parallel cancellation scheme.

KEYWORDS: Inter Carrier Interference, OFDM, Space Frequency Parallel Cancellation, SUI

I. INTRODUCTION

Orthogonal frequency division multiplexing (OFDM) communication system has number of advantages over conventional communication techniques namely FDMA, TDMA and CDMA. Orthogonal frequency division multiplexing (OFDM) communication system has better spectral efficiency, high data rate, low inter carrier interference and moreover it is termed as future generation communication system because of its flexible and reliable high speed data rates, high spectral efficiency, high quality service and robustness against narrow band interference and frequency selective Fading.

In orthogonal frequency division multiplexing (OFDM) all subcarriers are orthogonal to each other which results in correlation between the subcarriers. Although orthogonal frequency division multiplexing (OFDM) supports wide range of advance applications with high data rate .In the MCM (multi carrier modulation), OFDM yields good results over Frequency division multiplexing (FDM). Generally OFDM is considered as optimal version of the MCM schemes and respective representations are as follows.
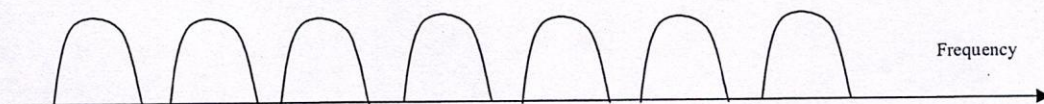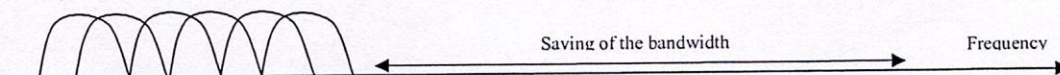

Fig. 1(a) Conventional FDM in MCM

Fig. 1(b) OFDM Multicarrier modulation technique

DOI:10.15680/IJIRSET.2016.0509149

17253

Implementation of Effective Code Converters using Reversible Logic Gates

Ponnuru Koteswara Rao[#1], P Raveendra[#2], Kankata Venkateswara Rao[#3]

[#1,2,3]*Assistant Professor, SRK Institute of Technology, Enikepadu, Vijayawada*

ABSTRACT

The development in the field of nanometer technology leads to minimize the power consumption of logic circuits. Reversible logic design has been one of the promising technologies gaining greater interest due to less dissipation of heat and low power consumption. In the digital design, the code converters are widely used process. So, the reversible logic gates and reversible circuits for realizing code converters like as Binary to Gray code, Gray to Binary code, BCD to Excess 3 code, Excess 3 to BCD codes using reversible logic gates is proposed. Designing of reversible logic circuit is challenging task, since not enough number of gates are available for design. Reversible processor design needs its building blocks should be reversible in this view the designing of reversible code converters became essential one. In the digital domain, data or information is represented by a combination of 0's and 1's. A code is basically the pattern of these 0's and 1's used to represent the data. Code converters are a class of combinational digital circuits that are used to convert one type of code in to another. The proposed design leads to the reduction of power consumption compared with conventional logic circuits.

Keywords: Reversible logic, efficient code converters, low power logic gates & VLSI design.

I .INTRODUCTION

Reversible computing is a model of computing where the computational process to some extent is reversible, i.e., time invertible. A necessary condition for reversibility of a computational model is that the relation of the mapping states of transition functions to their successors should at all times be one-to-one. Reversible computing is generally considered an unconventional form of computing. There are two major, closely related, types of reversibility that are of particular interest for this purpose: physical reversibility and logical reversibility. A process is said to be physically reversible if it results in no increase in physical entropy; it is isentropic.

These circuits are also referred to as charge recovery logic or adiabatic computing. Although in practice no stationary physical process can be exactly physically reversible or isentropic, there is no known limit to the closeness with which we can approach perfect reversibility, in systems that are sufficiently well-isolated from interactions with unknown external environments, when the laws of physics describing the system's evolution are precisely known. Probably the largest motivation for the study of technologies aimed at actually implementing reversible computing is that they offer what is predicted to be the only potential way to improve the energy efficiency of computers beyond the fundamental von Neumann-Landauer limit of kTln energy dissipated per irreversible bit operation.

As was first argued by Rolf Landauer of IBM, in order for a computational process to be physically reversible, it must also be logically reversible. Landauer's principle is the loosely formulated notion that the erasure of n bits of information must always incur a cost of nkln in thermodynamic entropy. A discrete, deterministic computational process is said to be logically reversible if the transition function that maps old computational states to new ones is a one-to-one function; i.e. the output logical states uniquely defines the input logical states of the computational operation. For computational processes that are nondeterministic (in the sense of being probabilistic or random), the relation between old and new states is not a single-valued function, and the requirement needed to obtain physical reversibility becomes a slightly weaker condition, namely that the size of a given ensemble of possible initial computational states does not decrease, on average, as the computation proceeds forwards.

The reversibility of physics and reversible computing Landauer's principle (and indeed, the second law of thermodynamics itself) can also be understood to be a direct logical consequence of the underlying reversibility of physics, as is reflected in the general Hamiltonian formulation of mechanics and in the unitary time-evolution operator of quantum mechanics more specifically.

In the context of reversible physics, the phenomenon of entropy increase (and the observed arrow of time) can be understood to be consequences of the fact that our evolved predictive capabilities are rather limited, and cannot keep perfect track of the exact reversible evolution of complex physical systems, especially

RESEARCH ARTICLE   OPEN ACCESS

Implementation of Effective Code Converters using Reversible Logic Gates

Ponnuru Koteswara Rao[#1], P Raveendra[#2], Kankata Venkateswara Rao[#3]

[#1,2,3] *Assistant Professor, SRK Institute of Technology, Enikepadu, Vijayawada*

ABSTRACT

The development in the field of nanometer technology leads to minimize the power consumption of logic circuits. Reversible logic design has been one of the promising technologies gaining greater interest due to less dissipation of heat and low power consumption. In the digital design, the code converters are widely used process. So, the reversible logic gates and reversible circuits for realizing code converters like as Binary to Gray code, Gray to Binary code, BCD to Excess 3 code, Excess 3 to BCD codes using reversible logic gates is proposed. Designing of reversible logic circuit is challenging task, since not enough number of gates are available for design. Reversible processor design needs its building blocks should be reversible in this view the designing of reversible code converters became essential one. In the digital domain, data or information is represented by a combination of 0's and 1's. A code is basically the pattern of these 0's and 1's used to represent the data. Code converters are a class of combinational digital circuits that are used to convert one type of code in to another. The proposed design leads to the reduction of power consumption compared with conventional logic circuits.

Keywords: Reversible logic, efficient code converters, low power logic gates & VLSI design.

I .INTRODUCTION

Reversible computing is a model of computing where the computational process to some extent is reversible, i.e., time invertible. A necessary condition for reversibility of a computational model is that the relation of the mapping states of transition functions to their successors should at all times be one-to-one. Reversible computing is generally considered an unconventional form of computing. There are two major, closely related, types of reversibility that are of particular interest for this purpose: physical reversibility and logical reversibility. A process is said to be physically reversible if it results in no increase in physical entropy; it is isentropic.

These circuits are also referred to as charge recovery logic or adiabatic computing. Although in practice no stationary physical process can be exactly physically reversible or isentropic, there is no known limit to the closeness with which we can approach perfect reversibility, in systems that are sufficiently well-isolated from interactions with unknown external environments, when the laws of physics describing the system's evolution are precisely known. Probably the largest motivation for the study of technologies aimed at actually implementing reversible computing is that they offer what is predicted to be the only potential way to improve the energy efficiency of computers beyond the fundamental von Neumann-Landauer limit of kTln energy dissipated per irreversible bit operation.

As was first argued by Rolf Landauer of IBM, in order for a computational process to be physically reversible, it must also be logically reversible. Landauer's principle is the loosely formulated notion that the erasure of n bits of information must always incur a cost of nkln in thermodynamic entropy. A discrete, deterministic computational process is said to be logically reversible if the transition function that maps old computational states to new ones is a one-to-one function; i.e. the output logical states uniquely defines the input logical states of the computational operation. For computational processes that are nondeterministic (in the sense of being probabilistic or random), the relation between old and new states is not a single-valued function, and the requirement needed to obtain physical reversibility becomes a slightly weaker condition, namely that the size of a given ensemble of possible initial computational states does not decrease, on average, as the computation proceeds forwards.

The reversibility of physics and reversible computing Landauer's principle (and indeed, the second law of thermodynamics itself) can also be understood to be a direct logical consequence of the underlying reversibility of physics, as is reflected in the general Hamiltonian formulation of mechanics and in the unitary time-evolution operator of quantum mechanics more specifically.

In the context of reversible physics, the phenomenon of entropy increase (and the observed arrow of time) can be understood to be consequences of the fact that our evolved predictive capabilities are rather limited, and cannot keep perfect track of the exact reversible evolution of complex physical systems, especially

RESEARCH ARTICLE   OPEN ACCESS

Implementation of Effective Code Converters using Reversible Logic Gates

Ponnuru Koteswara Rao[#1], P Raveendra[#2], Kankata Venkateswara Rao[#3]

[#1,2,3]*Assistant Professor, SRK Institute of Technology, Enikepadu, Vijayawada*

ABSTRACT
The development in the field of nanometer technology leads to minimize the power consumption of logic circuits. Reversible logic design has been one of the promising technologies gaining greater interest due to less dissipation of heat and low power consumption. In the digital design, the code converters are widely used process. So, the reversible logic gates and reversible circuits for realizing code converters like as Binary to Gray code, Gray to Binary code, BCD to Excess 3 code, Excess 3 to BCD codes using reversible logic gates is proposed. Designing of reversible logic circuit is challenging task, since not enough number of gates are available for design. Reversible processor design needs its building blocks should be reversible in this view the designing of reversible code converters became essential one. In the digital domain, data or information is represented by a combination of 0's and 1's. A code is basically the pattern of these 0's and 1's used to represent the data. Code converters are a class of combinational digital circuits that are used to convert one type of code in to another. The proposed design leads to the reduction of power consumption compared with conventional logic circuits.
Keywords: Reversible logic, efficient code converters, low power logic gates & VLSI design.

I .INTRODUCTION

Reversible computing is a model of computing where the computational process to some extent is reversible, i.e., time invertible. A necessary condition for reversibility of a computational model is that the relation of the mapping states of transition functions to their successors should at all times be one-to-one. Reversible computing is generally considered an unconventional form of computing. There are two major, closely related, types of reversibility that are of particular interest for this purpose: physical reversibility and logical reversibility. A process is said to be physically reversible if it results in no increase in physical entropy; it is isentropic.

These circuits are also referred to as charge recovery logic or adiabatic computing. Although in practice no stationary physical process can be exactly physically reversible or isentropic, there is no known limit to the closeness with which we can approach perfect reversibility, in systems that are sufficiently well-isolated from interactions with unknown external environments, when the laws of physics describing the system's evolution are precisely known. Probably the largest motivation for the study of technologies aimed at actually implementing reversible computing is that they offer what is predicted to be the only potential way to improve the energy efficiency of computers beyond the fundamental von Neumann-Landauer limit of kTln energy dissipated per irreversible bit operation.

As was first argued by Rolf Landauer of IBM, in order for a computational process to be physically reversible, it must also be logically reversible. Landauer's principle is the loosely formulated notion that the erasure of n bits of information must always incur a cost of nkln in thermodynamic entropy. A discrete, deterministic computational process is said to be logically reversible if the transition function that maps old computational states to new ones is a one-to-one function; i.e. the output logical states uniquely defines the input logical states of the computational operation. For computational processes that are nondeterministic (in the sense of being probabilistic or random), the relation between old and new states is not a single-valued function, and the requirement needed to obtain physical reversibility becomes a slightly weaker condition, namely that the size of a given ensemble of possible initial computational states does not decrease, on average, as the computation proceeds forwards.

The reversibility of physics and reversible computing Landauer's principle (and indeed, the second law of thermodynamics itself) can also be understood to be a direct logical consequence of the underlying reversibility of physics, as is reflected in the general Hamiltonian formulation of mechanics and in the unitary time-evolution operator of quantum mechanics more specifically.

In the context of reversible physics, the phenomenon of entropy increase (and the observed arrow of time) can be understood to be consequences of the fact that our evolved predictive capabilities are rather limited, and cannot keep perfect track of the exact reversible evolution of complex physical systems, especially

PIR Sensor Based Robot With HMH Applications

Kankata Venkateswara Rao[#1], Ponnuru Koteswara Rao[#2], B Ravi[#3]

[#1,2,3]*Assistant Professor, Dept.of ECE, SRK Institute of Technology, Enikepadu, Vijayawada*
[1]kankata.venkat@gmail.com, [2]kosw.10@gmail.com, [3]rathodegec@gmail.com
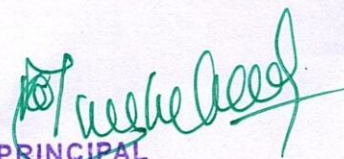
Abstract: Until now we have come across many types of sensors which are being employed in almost all the fields separately (viz., entertainment, safety). To witness the world that a single sensor can be used in multiple applications namely security, safety, user-friendly, rescue which is called PIR (Passive Infrared) sensor which detects the reflected Infrared rays from Humans as the temperature of Humans is different. So when temperature is detected then a buzzer, LCD, GSM, Virtual Keyboard are activated depending on the applications. Here we have three applications using PIR sensors likeHMH (Home, Military and Hotel)where at home it is used for detecting humans and then switch ON the lights & fans. In Military applications the robot is used at borders to detect enemies and then warn us about enemies using buzzer& send a message to us using GSM. In Hotels it is used as a steward to carry the things and then go and detect customers and give the thing present on it, and when it is taken from it again it goes back to its position. A menu card will be present on it with items having a defined numbers and customers just need to press the number using virtual keyboard and it will be displayed on LCD and then it goes back to its position and then next order will be taken. User friendly applications are like keeping things on it and then sending to the persons present somewhere in the home or any other work place. This application can be used during disasters like earth quakes, cyclones to rescue humans who are trapped under destroyed buildings.

I. INTRODUCTION

A passive infrared (PIR) sensor measures infrared light emitted from objects that generate heat, and therefore infrared radiation, in its field of view. Crystalline material at the centre of a rectangle on the face of the sensor detects the infrared radiation. The sensor is actually split into two halves so as to detect not the radiation itself, but the change in condition that occurs when a target enters its field. These changes in the amount of infrared radiation on the element in turn change the voltages generated, which are measured by an on-board amplifier. When motion is detected the PIR sensor outputs a high signal on its output pin, which can either be read by an MCU or drive a transistor to switch a higher current load.

What is actually detected is the broken field for a"normal" temperature. The field does not have to be broken by an object with a different temperature in order to register change, as highly sensitive sensors will activate from the movement alone. Designed for use at ambient temperatures of 15°C to 20°C, at higher temperatures the field of view narrows, and if below 15°C, the field of view widens and small or distant objects can activate the sensor.

All objects with a temperature above absolute zero emit heat energy in the form of radiation. Usually this radiation is invisible to the human eye because it radiates at infrared wavelengths, but it can be detected by electronic devices designed for such a purpose. The term *passive* in this instance refers to the fact that PIR devices do not generate or radiate any energy for detection purposes. They work entirely by detecting the energy given off by other objects. PIR sensors don't detect or measure "heat"; instead they detect the infrared radiation emitted or reflected from an object. A PIR-based motion detector is used to sense movement of people, animals, or other objects. They are commonly used in burglar alarms and automatically-activated lighting systems. They are commonly called simply "PIR", or sometimes "PID", for "passive infrared detector".An individual PIR sensor detects changes in the amount of infrared radiation impinging upon it, which varies depending on the temperature and surface characteristics of the objects in front of the sensor. When an object, such as a human, passes in front of the background, such as a wall, the temperature at that point in the sensor's field of view will rise from room temperature to body and then back again. The sensor converts the resulting change in the incoming infrared radiation into a change in the output voltage, and this triggers the detection.

Real-Time Design of Automation System with WSN & Pi Controller for 24/7 Surveillance

MD. SHABEENA BEGUM[1], N. MAYURI[2]

[1]Assistant Professor, Dept of ECE, SRK Institute of Technology, Vijayawada, AP, India.
[2]Assistant Professor, Dept of ECE, SRK Institute of Technology, Vijayawada, AP, India.

Abstract: Wireless technology is increasingly used in the business and a variety of wireless communications is. The development of the wireless technology, and an appropriate communications. When mobile devices are equipped with the Internet, the demand will increase because of the way power tools. Users can monitor and manage the system far placed on the web server. In this article focuses on the design and implementation of the system is a secure web-based wireless communication Raspberry Pi. Successful preparation and implementation of the system which uses this technology. GSM technology, GPRS systems around the world. Multiple sensors can be connected to the micro controller. Parameters such as light, pressure, motion measured by real-time monitoring Android phones PC file changes. The use of this technology that can reach the Super-smooth transfer a lot of data in a very less time. Because the whole system is based on a dynamic IP address at any time, I can tell you that the whole system safer than the previous system. Wireless sensor networks (wireless sensor) in order to reduce the shortage, the total price of the system and increase the fruits of success, total industrial work.

Keywords: Mobile Micro Controllers, Embedded Web Server, GPRS, Raspberry Pi, Most of the Wireless Sensor Networks.

I. INTRODUCTION

Wireless communication is very important, and essential in a variety of factory automation. Currently, the application and the wireless communications industry automation is growing rapidly, as [1]. Network used in the past are not as useful and current practice in the industry. The data collection system can be used in a great demand for companies and consumers. [2] In practice, the people will replace unmanned companies that receive data and transmit the data back to the plant. A person can control and influence the ongoing work on the basis of the train station. There is an application designed to collect and transmit data to the Modem 'server. One of the main problems the company Automation-based methods in our daily lives. M Industrial Applications Wireless network game today. affordable and necessary work of the manufacturing process to improve the efficiency of the process technology to produce high quality products and to ensure the timeliness and [3]. Wireless technology is considered to be one of the most rapidly growing in the areas of application. Industrial automation systems composed of equipment and technology in various coordinate the work. These materials are responsible for the workmanship and the like, monitoring, and control of the management [4]. Network web server, advanced ARM11 processor Raspberry Pi. Do you Frisco architecture. The web server control and the control of reproduction is a simple tool that uses the remote. [14] and the design of the system called Variable Computer and Smartphone Internet service in remote areas. Do not offer the use of portable and low maintenance technology change.

The GSM network was established in the Protocol Stack TCP /IP data transfer technology GPRS Internet. Therefore, the input different cases around the world have followed. Talk to real-time data in accordance with the sun power is greater than the benefits for further study [15].

II. LITERATURE SURVEY AND BRIEFING OF EXISTING SYSTEM

Wireless sensor networks shows various application in various sectors. These applications, it is necessary and to monitor the entrance to the high physical and mental, and support [5]. [6], the network test system is a combination of wireless radio frequent (RF), microcontrollers, sensors and power supply. set sensor networks, wireless equipment, developed to identify and bring the workers to leave the problem, or the access to the application and technology with traditional elements. Wireless sensor Network is composed of a number of monitoring sensors and mobile phones. [7] is not the transmission of wireless data transmission may be far from power lines, or "channel, the distance may be short (a few meters from the remote TV control), or large (thousands or -tapitrisany, even thousands of miles Radio) as the Foreign relations phone frequent radio communications, microwave communications, application of the Infrared (IR) communication connections with a variety of short-impact contact points, point-to-multipoint connections, transmission, etc. networks in recent years, the wireless communications industry experienced drastic changes in technology reform by many. many of the mechanisms that allows information to be used in order to get away from the entrance. Wireless Internet

Real-Time Design of Automation System with WSN & Pi Controller for 24/7 Surveillance

MD. SHABEENA BEGUM[1], N. MAYURI[2]
[1]Assistant Professor, Dept of ECE, SRK Institute of Technology, Vijayawada, AP, India.
[2]Assistant Professor, Dept of ECE, SRK Institute of Technology, Vijayawada, AP, India.

Abstract: Wireless technology is increasingly used in the business and a variety of wireless communications is. The development of the wireless technology, and an appropriate communications. When mobile devices are equipped with the Internet, the demand will increase because of the way power tools. Users can monitor and manage the system far placed on the web server. In this article focuses on the design and implementation of the system is a secure web-based wireless communication Raspberry Pi. Successful preparation and implementation of the system which uses this technology. GSM technology, GPRS systems around the world. Multiple sensors can be connected to the micro controller. Parameters such as light, pressure, motion measured by real-time monitoring Android phones PC file changes. The use of this technology that can reach the Super-smooth transfer a lot of data in a very less time. Because the whole system is based on a dynamic IP address at any time, I can tell you that the whole system safer than the previous system. Wireless sensor networks (wireless sensor) in order to reduce the shortage, the total price of the system and increase the fruits of success, total industrial work.

Keywords: Mobile Micro Controllers, Embedded Web Server, GPRS, Raspberry Pi, Most of the Wireless Sensor Networks.

I. INTRODUCTION

Wireless communication is very important, and essential in a variety of factory automation. Currently, the application and the wireless communications industry automation is growing rapidly, as [1]. Network used in the past are not as useful and current practice in the industry. The data collection system can be used in a great demand for companies and consumers. [2] In practice, the people will replace unmanned companies that receive data and transmit the data back to the plant. A person can control and influence the ongoing work on the basis of the train station. There is an application designed to collect and transmit data to the Modem 'server. One of the main problems the company Automation-based methods in our daily lives. M Industrial Applications Wireless network game today. affordable and necessary work of the manufacturing process to improve the efficiency of the process technology to produce high quality products and to ensure the timeliness and [3]. Wireless technology is considered to be one of the most rapidly growing in the areas of application. Industrial automation systems composed of equipment and technology in various coordinate the work. These materials are responsible for the workmanship and the like, monitoring, and control of the management [4]. Network web server, advanced ARM11 processor Raspberry Pi. Do you Frisco architecture. The web server control and the control of reproduction is a simple tool that uses the remote. [14] and the design of the system called Variable Computer and Smartphone Internet service in remote areas. Do not offer the use of portable and low maintenance technology change.

The GSM network was established in the Protocol Stack TCP /IP data transfer technology GPRS Internet. Therefore, the input different cases around the world have followed. Talk to real-time data in accordance with the sun power is greater than the benefits for further study [15].

II. LITERATURE SURVEY AND BRIEFING OF EXISTING SYSTEM

Wireless sensor networks shows various application in various sectors. These applications, it is necessary and to monitor the entrance to the high physical and mental, and support [5]. [6], the network test system is a combination of wireless radio frequent (RF), microcontrollers, sensors and power supply. set sensor networks, wireless equipment, developed to identify and bring the workers to leave the problem, or the access to the application and technology with traditional elements. Wireless sensor Network is composed of a number of monitoring sensors and mobile phones. [7] is not the transmission of wireless data transmission may be far from power lines, or "channel, the distance may be short (a few meters from the remote TV control), or large (thousands or -tapitrisany, even thousands of miles Radio) as the Foreign relations phone frequent radio communications, microwave communications, application of the Infrared (IR) communication connections with a variety of short-impact contact points, point-to-multipoint connections, transmission, etc. networks in recent years, the wireless communications industry experienced drastic changes in technology reform by many. many of the mechanisms that allows information to be used in order to get away from the entrance. Wireless Internet

A New Iterative Triclass OTSU Method with Llyods Clustering In Image Segmentation

K. THANUJA[1], Y. RAKESH[2]

[1]PG Scholar, Dept of ECE, S.R.K Institute of Technology, Vijayawada, AP, India.
[2]Assistant Professor, Dept of ECE, S.R.K Institute of Technology, Vijayawada, AP, India.

Abstract: Thresholding is the commonly used technique in image segmentation. In this paper, it presents an efficient iterative algorithm for finding the optimal thresholds that minimize the weighted sum-of-squared-error objective function. We have proved that the proposed algorithm is mathematically equivalent to the well-known Otsu's method, but it requires much less computation. The computational complexity of the proposed algorithm is the Lloyds clustering. Although the algorithm may be applied directly to the Euclidean plane, similarly these algorithms may also be applied to higher-dimensional spaces or to spaces with other non-Euclidean metrics. The experimental results shows that the specificity and accuracy are improved in the proposed method.

Keywords: Binarization, Thersholding Image Segmentation, Lloyds Clustering.

I. INTRODUCTION

Digital images are subject to a wide variety of distortions during acquisition, processing, compression, storage, transmission and reproduction, any of which may result in a degradation of visual quality. For applications in which images are ultimately to be viewed by human beings, the only "correct" method of quantifying visual image quality is through subjective evaluation. In practice, however, subjective evaluation is usually too inconvenient, time-consuming and expensive. The goal of research in objective image quality assessment is to develop quantitative measures that can automatically predict perceived image quality[1]. An objective image quality metric can play a variety of roles in image processing applications. First, it can be used to dynamically monitor and adjust image quality. Image enhancement techniques are the algorithms which improve the quality of images by removing blurring and noise, increasing contrast and sharpness of digital medical images. There are many image enhancement approaches (theories) like Contrast stretching, Range compression, Histogram equalization and noise smoothing. A certain amount of trial and error usually is required before a particular image enhancement approach is selected. There is no general theory of image enhancement. When an image is processed for visual interpretation, the viewer is the ultimate judge of how well a particular method works. Visual evaluation of image quality is a highly subjective process.

A. Image Segmentation

Image segmentation [2]is the fundamental approach for digital image processing. In image processing, segmentation is the first step to preprocess the images to extract the objects and make it easier to analyze The segmentation[2] process

identifies the group of pixels having similar properties within the image. Segmentation is a valuable tool in many fields in our daily life like industry, health care's, Digital image processing, remote sensing, Road traffic image, content based retrieval, pattern recognition, and computer vision etc. binarization[10] techniques for grayscale documents can be grouped into two broad categories: global binarization and local binarization. Global binarization methods like that of Otsu method try to find a single threshold value for the whole document. But all the method should be applied to all the type of images for that an algorithm like Lloyds means should be considered to classify the depth and extension region of the identified area.
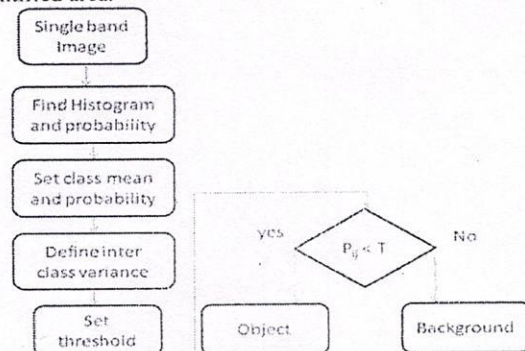

Fig.1. Algorithm for Otsu Method.

II. EXISTING METHOD

A. Otsu Thersholding

The Otsu's thresholding[8] method may be recommended as the simplest and standard method for automatic threshold selection, which can be applied to various practical problems

An Efficient FPGA Implementation of OFDM Modem for Wireless Applications

K.Siva Rama Lakshmi
M.Tech Student,
Department of ECE,
S.R.K Institute of Technology,
Enikepadu, Vijayawada, Krishna District,
Andhra Pradesh -521108.

K.Venkateswara Rao, M.Tech
Assistant Professor,
Department of ECE,
S.R.K Institute of Technology,
Enikepadu, Vijayawada, Krishna District,
Andhra Pradesh -521108.

Abstract:

The new mobile technologies trying to give broadband over wireless channel allowing the user to have bandwidth connectivity even inside moving vehicle. The metropolitan-broadband wireless networks require a non-line-of-sight (NLOS) capability, and the scheme Orthogonal Frequency Division Multiplex(OFDM) becomes essential to overcome the effects of multipathfading. Orthogonal Frequency Division Multiplexing (OFDM)has become very popular, allowing high speed wirelesscommunications. OFDM could be considered either a modulationor multiplexing technique, and its hierarchy corresponds to thephysical and medium access layer. A basic OFDM modulator systemconsists of a QAM or PSK modulator, a serial to parallel, andan IFFT module. The iterative nature of the IFFT and itscomputational order makes OFDM ideal for a dedicated architectureoutside or parallel to the main processor.

The VHDL implementationallows the design to be extended for either FPGA or ASICimplementation, which suits more for the Software Defined Radio (SDR)design methodology. In this project the OFDM modulator anddemodulator will be implemented with full digital techniques.VHDL will be used for RTL description and FPGA synthesis toolswill be used for performance analysis of the proposed core.Modelsim Xilinx Edition will be used for functional simulationand verification of results. Xilinx ISE will be used for synthesis.The Xilinx's chipscope tool will be used for verifying the results onSpartan 3E 3S500EFG320-4 FPGA.

Keywords:

OFDM Technology, FFT,IFFT,VHDL,FPGA design..

1. INTRODUCTION:

The telecommunications industry faces the problem of providing telephone services to rural areas, where the customer base is small, but the cost of installing a wired phone network is very high. One method of reducing the high infrastructure cost of a wired system is to use a fixed wireless radio network. The problem with this is that for rural and urban areas, large cell sizes are required to obtain sufficient coverage. This results in problems cased by large signal path loss and long delay times in multipath signal propagation.Currently Global System for Mobile Telecommunications (GSM) technology is being applied to fixed wireless phone systems in rural areas or Australia. However, GSM uses Time Division Multiple Access (TDMA), which has a high symbol rate leading to problems with multipath causing inter-symbol interference.

Several techniques are under consideration for the next generation of digital phone systems, with the aim of improving cell capacity, multipath immunity, and flexibility. These include Code Division Multiple Access (CDMA) and Coded Orthogonal Frequency Division Multiplexing (COFDM). Both these techniques could be applied to providing a fixed wireless system for rural areas. However, each technique has different properties, making it more suited for specific applications.COFDM is currently being used in several new radio broadcast systems including the proposal for high definition digital television Digital Video Broadcasting (DVB) and Digital Audio Broadcasting (DAB). However little research has been done into the use of COFDM as a transmission method for mobile telecommunications systems.With CDMA systems, all users transmit in the same frequency band using specialized codes as a basis of channelization.

A Novel Mitigation Technique for PAPR in Mimo-OFDMA Using RBWA

Gummadi Suryaprakash[1], Bala Krishna Konda[2]

[1]M.Tech (DECS), Department of Electronics & Communication Engineering,
Eluru College of Engineering & Technology, Eluru, AP, India

[2]Assistant Professor, Department of Electronics & Communication Engineering,
Eluru College of Engineering & Technology, Eluru, AP, India

Abstract: *A new peak-to-average power ratio (PAPR) reduction approach for MIMO-OFDM/A is developed based on the well known Resource block weight algorithm (RBWA). This combines two ideas: 1) time domain signals from "resource blocks" (consisting of several subcarriers) may be linearly combined using precoding weights, transparent to the receiver; 2) the precoding weights can be designed to minimize the modulus variations of the resulting signal, leading generally to a reduction in PAPR. This technique is compatible with various beam forming modes in single antenna and MIMO systems. Simulation results show a noticeable improvement relative to the Selective mapping (SLM) technique with significantly less complexity.*

Keywords: Beam forming, convex optimization, multiple input multiple output (MIMO), orthogonal frequency division multiplexing (OFDM), Selective mapping technique (SLM).

1. Introduction

OFDM is known as one of the most favorable modulation techniques for communication over frequency selective wireless channels, and is widely used in telecommunication standards. A well-known drawback of OFDM is that the amplitude of the time domain signal varies strongly with the transmitted symbols modulated on the subcarriers in the frequency domain, resulting in a „peaky" signal. If the maximum amplitude of the time domain signal is too large, it pushes the transmit amplifier into a non-linear region which distorts the signal resulting in a substantial increase in the error rate at the receiver. Over the past decade, an extensive amount of literature has been dedicated to Peak to Average Power Ratio (PAPR) reduction techniques. These techniques are associated with costs in terms of bandwidth or/and transmit power. Also, most of them require modifications to both the transmitter and the receiver which makes them non-compliant to existing standards. Multiple signal representation methods, such as PTS and selected mapping (SLM) are among the most cited techniques [1], [2]. Extension of these algorithms to multiple antenna (MIMO) systems is not straightforward. Another combined precoding and PAPR reduction technique has been proposed for multiuser MIMO systems with sorted Tomlinson-Harashima precoding (sTHP).For more details and further developed techniques on MIMO-OFDM peak reduction see [3] and references therein.

A new technique called CP-PTS is proposed in [4] which is adaptable for different beam forming schemes in standard point to point or multiuser MIMO systems. In this technique, the OFDM subcarriers are grouped into blocks and the phase of each block is changed in a manner similar to the PTS method but without the drawback of sending explicit side information. As long as each block is multiplied with only one phase coefficient, the receiver will perceive this as a channel effect and will compensate for it during the channel equalization process [5]. An extension of CP-PTS to MIMO-

OFDM systems is introduced in[6]. In both cases, a sequential quadratic programming (SQP) algorithm is used to solve the phase optimization problem. The computational complexity of this algorithm can be prohibitive for high data rate and/or low latency communication links. The PAPR weights need to be determined again for every OFDM data block, hence the underlying algorithm should be sufficiently efficient to enable a real-time processing.

In this discussion , the same configuration as CP-PTS is used but instead of solving a non-convex optimization problem, an alternative problem formulation is proposed based on a cost function used in constant modulus algorithms (CMAs). Accordingly, the block-iterative SDCMA algorithm [7] is used to find the precoding PAPR weights. The resulting computational complexity is linear in the number of subcarriers. Furthermore, to make sure that the BER performance of the system is not affected by the PAPR precoding an additional constraint is appended to the CMA objective function which requires the weights to be on the unit circle. Like CP-PTS, the proposed technique is transparent to the receiver; this means that it only affects the base station (BS) and it does not require any signal processing in the mobile station (MS).

The proposed method does not function if the channel estimation exploits the smooth changes of the channel coefficients over the complete OFDM block. However, this assumption is not valid in the modern multiuser systems based on RB assignment [5], [8].

2. Back Ground Work

2.1. Clipping Technique for PAPR Reduction

In this approach, we can perform time-domain based clipping or frequency-domain based coding. The simplest approach for PAPR reduction is to deliberately clip the amplitude of the signal to a predefined value before

DESIGN OF COMPACT HALF-CIRCULAR SLOT UWB ANTENNA FOR WIRELESS APPLICATIONS

Ch. Vijayasekhar Babu

Assistant Professor, Department of ECE, SRK Institute of Technology, AP, India

Abstract: In this communication, the design of a compact patch antenna is proposed for operating in UWB applications. The patch antenna is composed of a circular slot in the ground plane and a circular patch serves as the radiating element. The antenna is studied with different iterations of the base antenna such as the half-structure, and corresponding down scaled structures of a scaling factor of 0.4, 0.5, 0.6. In this experimentation, the study of antenna parameters such as return loss. VSWR, gain, radiation patterns have been presented which are obtained in the HFSS simulations. The proposed compact models are observed to be suitable for UWB high data rate applications.

Keywords: Half-Circular patch, down-scale, VSWR, HFSS, gain.

I. Introduction

Ultra Wide Band antenna has much importance in Communication Systems because of its potential for accommodating higher data rate [1,2]. Various antenna configurations are more popular such as planar monopoles, slot antennas and dipoles for use in wireless applications [3,4]. Slotted UWB antennas have more merits like Omni directional radiation patterns, simple structure and low cost. Advantages of UWB technology is low power, high data rate and short range wireless communications. The necessity of small size UWB antennas increased and many miniaturization techniques were presented. In [5,6], a simple a CPW-fed U type monopole antenna and a microstrip square ring slot antenna (MSRSA) are proposed. A slot coupled patch antenna with two slots on the ground plane with a feedline in a non-symmetric U-shape is presentedfor the 10–22 GHz applications(75%) [7]. In [8], a UWB antenna design is presented with printed circular slot configuration and a half-cutting method is used.

In this paper, we have presented the design of a compact half-circular slot antenna for UWB applications. The characteristics of the antenna have been studied including the down-scaled version of the base antenna to study the its miniaturization effect. The results of various antenna scaled variations are made for comparative study. The details of the antenna geometry are discussed and the results of the models are presented in the subsequent sections.

II. Antenna Design

(a) 40mm x 40mm UWB Antenna Design:

The proposed model is a UWB antenna based on a circular slot. Four different models of sizes 40 x 40mm, 20 x 40 mm, 10 x 20 mm and 20 x 20 mm of thickness 1.4mm were proposed and are printed on FR4 substrate with a dielectric constant of 4.4 and fed with microstrip line. A comparative analysis is to be made between all the four models. The proposed antenna is to be simulated using High Frequency Structure Simulator (HFSS) and the parameters like Return Loss, impedance, gain and radiation pattern etc. are to be analysed.

(b) 20mm x 40mm UWB Antenna Design and the down-scaledversions:

In the next iteration, the basic antenna is halved down along a center line bisecting the feed and the dimensions will become 20mm x 40mm which is shown in Fig. 1. The antenna is realized on FR4-Epoxy substrate having thickness of the PCB is 1.4mm. The radiating element is a half circular disc which is fed by microstrip line. The

Implementation of Search Engine Optimization on a Website (Anil's Diabetic Center)

G D K Kishore
Department Of CSE, DVR & DHS MIC College of Technology, India.

B. Murali Krishna
Department Of CSE, DVR & DHS MIC College of Technology, India.

Abstract – [a] In basic to check the search engine exchange information effectively and precisely and do this optimization to enhance the web search ranking, starting with comprehension the rule of search engine, this paper trades the particular clarification of search engine optimization. And after that it presents the new site building ideas and configuration ideas with the end goal of the development of search engine optimization. Through an experimental research from the fields of the inside coding strategy, the site content feasible structure and site general engineering, the paper explains search engine optimization apparatuses, methodologies and techniques, and investigation the new believed that the venture and e-trade locales with the search engine do the viable site advancement. What's more, when the client through the search engine to search, the site can get a decent rankings position in the search results, in order to enhance the webpage movement lastly improve the site deals capacity or support limit.

Index Terms – Rank, Content, length, keyword, research, image optimization, URL length, keyword density.

1. INTRODUCTION

[c] Search engine optimization (SEO) alludes to systems that help your site rank higher in natural (or" natural") search results, hence making your site more noticeable to individuals who are searching for your item or administration by means of search engines. SEO is a piece of the more extensive theme of Search Engine Marketing (SEM),a term used to portray all advertising procedures for search. SEM involves both natural and paid search. With paid search, you can pay to list your site on a search engine so that your site shows up when somebody writes in a particular catchphrase or expression. Natural and paid postings both show up on the search engine, yet they are shown in various areas on the page. Usability Along these lines, why is it essential for your business" site to be recorded on search engines? On Google alone, there are more than 694,000 searches directed each second. We Think about that. Consistently that your site is not ordered on Google, you are conceivably passing up a major opportunity for hundreds, if not a huge number of chances for somebody to visit your site, read your substance, and possibly purchase your item or administration. Honing SEO nuts and bolts, and in addition more propelled strategies after those, can definitely enhance

your website's capacity to rank in the search engines and get found by your potential customers. What about paid search? Yes, you can pay to have your site recorded on the search engines. Nonetheless, running paid search crusades can be very immoderate on the off chance that you don't realize what you're doing. Also, around 88% of search engine clients never tap on paid search promotions anyway. Because the sole reason for a search engine is to give you applicable and helpful data, it is in everyone's best enthusiasm (for the search engine, the searcher, and you) to guarantee that your site is recorded in the natural search postings. Truth be told, it is most likely best to avoid paid search all together until you feel you have a firm handle on SEO and what it takes to rank organically. Outbound showcasing as we probably am aware it is dead. It used to be that a larger part of a neighborhood company's showcasing spending plan went to business index, daily paper, and radio notices. With the end goal you should get any business, you needed to put your offers and commercials in your prospect's face. Indeed, not any longer. The age of the Internet has made it with the goal that buyers are presently in control. It has never been less demanding for shoppers to block out the plenty of notices and ads they hear every day. Since you can no more stand out enough to be noticed with outbound promoting, you need to change your way to deal with inbound advertising and ensure you're simple to discover when buyers are searching for you. At the point when was the last time you utilized a telephone directory? Google is the new telephone directory. On the off chance that your site is not listed and improved to appear for catchphrases and expressions that are pertinent to what you bring to the table, the majority of that potential activity is setting off to your rivals.

2. SEARCH ENGINE WORKS

[b] Search engines have one goal – to furnish you with the most applicable results conceivable in connection to your search inquiry. In the event that the search engine is fruitful in furnishing you with data that addresses your issues, then you are an upbeat searcher. What's more, cheerful searchers will probably return to the same search engine over and over in light of the fact that they are success the outcomes they need. In request for a search engine to have the capacity to show results

Corpus ID: 64071323

Share This Paper 🐦 f 🔗 ✉

Priority Competition and Split Replication Protocol for Minimum Average Query Delay in Mobile Adhoc Networks

M. S. Babu, M. Eranna · Published 2016 · Computer Science ·
International Journal of Research

Now
a day's mobile computing is becoming more and more popular. The efficiency of file querying suffers from the properties of networks which include node mobility and limited communication range and resource. File sharing is one of the aspects which include peer to peer file sharing over MANET. Main advantages of P2P file sharing are files can be shared without base stations, overload on server can be avoided and it can exploit the otherwise wasted peer communication opportunities among mobile... CONTINUE READING

🔖 Save to Library 🔔 Create Alert 66 Cite 👍 Launch Research Feed

References

SHOWING 1-10 OF 10 REFERENCES

Maximizing P2P File Access Availability in Mobile Ad Hoc Networks though Replication for Efficient File Sharing
K. Chen, Haiying Shen · Computer Science · IEEE Transactions on Computers · 2015
66 36   PDF   · 🔖 Save 🔔 Alert 👍 Research Feed

Optimizing File Retrieval in Delay-Tolerant Content Distribution Community
Ying Huang, Y. Gao, K. Nahrstedt, Wenbo He · Computer Science · 2009 29th IEEE International Conference on Distributed Computing Systems · 2009
66 68   PDF   · 🔖 Save 🔔 Alert 👍 Research Feed

Supporting Cooperative Caching in Ad Hoc Networks
Liangzhong Yin, G. Cao · Computer Science · IEEE Trans. Mob. Comput. · 2006
66 421   · 🔖 Save 🔔 Alert 👍 Research Feed

Supporting Cooperative Caching in Disruption Tolerant Networks
Wei Gao, G. Cao, A. Iyengar, M. Srivatsa · Computer Science · 2011 31st International Conference on Distributed Computing Systems · 2011
66 103   PDF   · 🔖 Save 🔔 Alert 👍 Research Feed

Redundancy and distributed caching in mobile DTNs
M. Pitkänen, J. Ott · Computer Science · MobiArch '07 · 2007
66 73   PDF   · 🔖 Save 🔔 Alert 👍 Research Feed

HiBOp: a History Based Routing Protocol for Opportunistic Networks
C. Boldrini, M. Conti, Jacopo Jacopini, A. Passarella · Computer Science · 2007 IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks · 2007
66 293   PDF   · 🔖 Save 🔔 Alert 👍 Research Feed

Adaptive approaches to relieving broadcast storms in a wireless multihop mobile ad hoc network

PRINCIPAL
SRK Institute of Technology
ENIKEPADU, VIJAYAWADA-521 108.

Turning the Wave of Labour Unrest in India

Dr. N. Subramanyam, Professor & HOD, Department of Business Administration, SRK Institute of Technology, Enikepadu, Vijayawada. E-Mail: nsm.subramanyam@gmail.com

Mr. B.V.S.S. Subba Rao, Research Scholar, Department of Commerce & Management, Krishna University, Machilipatnam, Andhra Pradesh. E-mail: bvsss_rao@yahoo.co.in

Abstract: This paper deals with the serious issue of labour unrest and its consequences. Labour issues have plagued India since pre independence era. The paper tries to take a macro level view of the evolution of trade unions, their increasing influence, and causes of their emergence and the overall effect of all these events on the firm, economy, state and nation as a whole. The introduction to the paper deals with the objectives and the basic premises on which the paper has been written. It has been written on the proposition that labour unions are there with the aim of full employment and labour welfare, but their demands are context dependent and sometimes not valid.

In India Trade union movement was 'born in politics' and it developed with the political movement. The evolution can be broadly classified into two eras: Pre liberalization and Post Liberalization. Each phase had its own features that characterized them. The era of 1950's to mid 1960's is the period which saw increase in public sector unionism with unions being highly centralized. The era of mid 1960's to 1979 represented massive inter-union rivalries and industrial conflicts with decreasing employment. The post liberalization era of 1980's to 1991 was that of decentralized bargaining and independent unionism.

The essay in its next phase has tried to put forth the various causes and consequences of labour unrest. The causes have always been the same, since the inception of the first union only difference being the factors may vary in their intensity as per the situation. The major issues as per the current industrial scenario are contractual labour, labour in the unorganized sector, the social security and welfare measures as expected by the unions. The consequences have definitely varied, with unions becoming more and more powerful due to the political influence and increased worker awareness.

Key Words: Labour, Trade Union, Unionism

Introduction

This paper attempts to examine the role of organized and unorganized labour in India in a structural manner, tracing the economic, political, and social effects of the trade unionism and the manner in which it has contributed to labour unrest over time. The paper tries to examine in a unbiased manner the various strategies which the labour unions and management take and which have an impact at the level of the adequate - which is to say that the study of these matters is usually informed from several points of view" .The firm, the industry and the nation. The effect of changing economic scenario or rather a globalized scenario on the trade unions and their activities are described in largely urban labour markets keeping in mind the pre and post – liberalization era.

The paper has two main objectives: a) to present industrial relations in India, broadly understood as the changing relationships between workers, trade unions, employers, the economy and the nation; and b) to suggest possible ways of developing amicable industrial relations keeping in mind India as a developing economy. The framework on which this paper is written is based on the views of Freeman and Medoff (1984) of trade unions as "monopoly" institutions, or as the "collective voice" of workers. But in the current scenario the aim should be to minimize the monopoly status of the unions and maximize their

83

Turning the Wave of Labour Unrest in India

Dr. N. Subramanyam, Professor & HOD, Department of Business Administration, SRK Institute of Technology, Enikepadu, Vijayawada. E-Mail: nsm.subramanyam@gmail.com

Mr. B.V.S.S. Subba Rao, Research Scholar, Department of Commerce & Management, Krishna University, Machilipatnam, Andhra Pradesh. E-mail: bvsss_rao@yahoo.co.in

Abstract: This paper deals with the serious issue of labour unrest and its consequences. Labour issues have plagued India since pre independence era. The paper tries to take a macro level view of the evolution of trade unions, their increasing influence, and causes of their emergence and the overall effect of all these events on the firm, economy, state and nation as a whole. The introduction to the paper deals with the objectives and the basic premises on which the paper has been written. It has been written on the proposition that labour unions are there with the aim of full employment and labour welfare, but their demands are context dependent and sometimes not valid.

In India Trade union movement was 'born in politics' and it developed with the political movement. The evolution can be broadly classified into two eras: Pre liberalization and Post Liberalization. Each phase had its own features that characterized them. The era of 1950's to mid 1960's is the period which saw increase in public sector unionism with unions being highly centralized. The era of mid 1960's to 1979 represented massive inter-union rivalries and industrial conflicts with decreasing employment. The post liberalization era of 1980's to1991 was that of decentralized bargaining and independent unionism.

The essay in its next phase has tried to put forth the various causes and consequences of labour unrest. The causes have always been the same, since the inception of the first union only difference being the factors may vary in their intensity as per the situation. The major issues as per the current industrial scenario are contractual labour, labour in the unorganized sector, the social security and welfare measures as expected by the unions. The consequences have definitely varied, with unions becoming more and more powerful due to the political influence and increased worker awareness.

Key Words: Labour, Trade Union, Unionism

Introduction

This paper attempts to examine the role of organized and unorganized labour in India in a structural manner, tracing the economic, political, and social effects of the trade unionism and the manner in which it has contributed to labour unrest over time. The paper tries to examine in a unbiased manner the various strategies which the labour unions and management take and which have an impact at the level of the adequate - which is to say that the study of these matters is usually informed from several points of view" .The firm, the industry and the nation. The effect of changing economic scenario or rather a globalized scenario on the trade unions and their activities are described in largely urban labour markets keeping in mind the pre and post – liberalization era.

The paper has two main objectives: a) to present industrial relations in India, broadly understood as the changing relationships between workers, trade unions, employers, the economy and the nation; and b) to suggest possible ways of developing amicable industrial relations keeping in mind India as a developing economy. The framework on which this paper is written is based on the views of Freeman and Medoff (1984) of trade unions as "monopoly" institutions, or as the "collective voice" of workers. But in the current scenario the aim should be to minimize the monopoly status of the unions and maximize their

PRINCIPAL
SRK Institute of Technology
ENIKEPADU, VIJAYAWADA-521 108.

Impact of Celebrity Endorsements towards Television Viewers: A Perceptive - Vijayawada City

Prof. D. Surya Chandra Rao , *Registrar, Krishna University, Machilipatnam, E-mail: profdsrao@gmail.com*

Dr. K. Krishnaiah Choudary, *Associate Professor & HOD, Dept. of MBA, Sir C.R.Reddy College of Engineering, Eluru. E-mail: arkc.kodali@gmail.com*

Mr. B. V. S. S. Subba Rao , *Research Scholar Department of Commerce & Management, Krishna University, Machilipatnam,, E-mail: bvsss_rao@yahoo.co.in*

Abstract

The instrument of celebrity endorsement has nowadays become a pervasive element in advertising and communication management. India as a country is known for loving its stars. The Indians idolize their favorite actors and cricketers. The advertisers see this as an opportunity to grab and work on so as to expand their operations and promote their product. The study focuses on examining the celebrity endorsements towards television viewers in the city of Vijayawada. Celebrities often have the Charisma to attract and influence others by their reputation, credibility, followers and fans. Companies across the globe Sheils out on celebrities endorsements to lure and pull their target audience towards their product as well as service. This study mainly focuses on (1) to find out the awareness level of celebrity endorsement. (2) To analyze the opinion of television viewers pertaining to celebrity endorsement. (3) To examine the impact of celebrity endorsements on customers product choices. (4) To analyze whether the celebrity fits to the particular products that he/she endorses. This study is based on the primary data collected from Vijayawada with the help of structure questionnaire. The result of the study states that celebrity endorsed television commercials are having much fame and charisma than other form of advertisements.

Keywords: Effectiveness, Celebrity endorsement, Television Viewers, credibility, endorsement FMCG and perception.

Introduction:

Advertising is imperative for any kind of products or services to survive in the market advertisers adopt distinctive techniques for advertising. In this globalised era "celebrity advertising" emerges as a better way of advertising. In promotion and of advertising, a testimonial or show consists of a written or spoken statement, sometimes from a person figure, sometimes from a private citizen, extolling the virtue of some product. The term "testimonial" most commonly applies to the sales-pitches attributed to ordinary citizens, whereas "endorsement" usually applies to pitches by celebrities. Advertisers have attempted to quantify and qualify the use of celebrities in their marketing campaigns by evaluating their awareness, appeal, and relevance to a brand's image and the celebrity's influence on consumer buying behavior. Endorsements by celebrities have started since a long time. Celebrities include movie stars, sports personalities, talk show personalities, politicians and others who have the "charisma". Now more than ever, celebrity images are essential to draw the attention of the modern consumer.

Celebrity Endorsement Deals have established a service based on one simple fact that is undeniable and widely recognised. Corporations can reap the financial benefits of celebrity endorsements in the form of increased sales. Non-profit Organisations can utilize celebrity names to foster higher online and event-based fundraising revenues. Celebrity endorsements can be utilized to further your business goals in a myriad of ways. For decades, celebrity spokespeople have been a favorite marketing tool of companies with products or services to sell. Instant recognition attracts the desired target audience and makes the product they are promoting more visible. Audiences have a higher recall of, and can be more persuaded by, advertisements containing celebrities. Celebrity spokespeople are a staple in

48

PRINCIPAL
SRK INSTITUTE OF TECHNOLOGY,
ENIKEPADU, VIJAYAWADA

Multiplex Boom in India

Mr. Sudheer Kumar J. S, Assistant Professor, Department of Business Administration, S.R.K Institute of Technology, Vijayawada. e-mail: boon.sudheer@gmail.com

Abstract

Approximately twenty-three million Indians go to see a film every day. With the growth of multiplexes in several cities, venue could also be an influencing factor in watching movies. The growth of multiplexes from the 1990's in India is now a pivotal factor for contribution of economic development through entertainment industry. As of 2015 there are 2050 screens in India, where as in the countries like US 40,000 and China 20,000 screens. Comparatively, India has wide scope for development of multiplexes in the coming years as the Government of India also granted industry status to the film production and with the support of 100% FDI lot of developments is in line to entertain the audience.

Key Words: Multiplex, Entertainment, FDI, Government of India
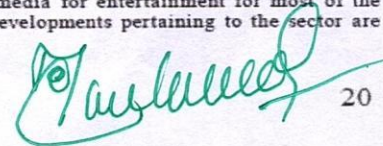
Introduction

Every consumer is significant in the success or failure of a business. What makes a consumer opt for purchasing a product or render a service is one of the important aspects to be known by an entrepreneur. One may be impacted by the cultural, geographic factors, demographic, etc.; one may be influenced by family, friends, etc. According to a study, approximately twenty-three million Indians go to see a film every day. With the growth of multiplexes in several cities, venue could also be an influencing factor in the market demand for movies. It's probably a little late to be talking about the death of single-screen theatres.

Multiplexes have become so ubiquitous these days that we forget that it was only a decade ago that standalone theatres were all we had. For a cinema-crazy nation such as ours, this change in the way we see films is no less a change in the way of life — in our urban landscape, since most of these theatres were really striking buildings. Even though India leads the world average in terms of movies produced each year, the gross under penetration of screen continues to be a cause of worry for the industry as domestic theatricals is the primary source of monetizing content for most films. There are just 7 screens per million people in India, unlike in the US, where there are 125 screens per million people. As India moves forward, the development and growth of most industries is expected to be largely driven by the Tier 2 and Tier 3 cities which are expected to hold the focus of the film industry as well. While the metros, especially Mumbai and NCR region, still contribute about 60% of the total box office collection in India, they have reached saturation and the next phase of growth is expected to come from Tier 2 and Tier 3 Centers.

Media and Entertainment Industry in India

The Indian Media and Entertainment (M&E) industry is a sunrise sector for the economy and is making high growth strides. Proving its resilience to the world, the Indian M&E sector is on the cusp of a strong phase of growth, backed by rising consumer payments and advertising revenues across all sectors. The industry has been largely driven by increasing digitisation and higher internet usage over the last decade. Internet has almost become a mainstream media for entertainment for most of the people. Recent statistics and developments pertaining to the sector are discussed hereafter.

20

ROLE OF INDIAN MULTINATIONAL CORPORATIONS WITH REGARDS TO CORPORATE SOCIAL RESPONSIBILITY

SHAIK SHAFIULLAH MBA M.com

Lecturer In Commerce & Management, Kbn College,Vijayawada

ABSTRACT

MNCs improve the quality of life of citizens in the host countries where they operate. MNCs are perceived as "intruders' or "takers' of the host-countries. Most of their business activities are not directly related to poverty eradication in the developing nations. For instance, we hardly see an annual report from MNCs that focus on long-term benefits of customers or citizens of the countries where they locate.
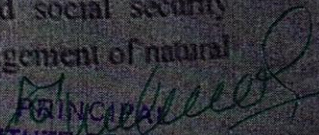
MNCs supports and involvement with the local government is essential to poverty eradication in developing nations. The reduction of poverty in developing countries depends on the growth of local and international business. For a local business to flourish it must have access to the global resources, productions and markets via MNCs. The second reason is about the momentum of MNCs and local actors in social change. Poverty reduction requires systemic change, and MNCs are the world's most efficient and sustainable engines of change. MNCs provide political leverage with local governments and international organisations. MNCs can offer opportunity for people to work and be productive. They can also work with local stakeholders to motivate and empower young people to learn and organize to gain knowledge and power. MNCs in developing countries are often the first choice for private sector jobs by young people, who are attracted by the higher salaries and the learning opportunities.

Key Words: Eradication, Poverty, Stakeholders, Sustainable political leverage engines of change

INTRODUCTION

Corporate social responsibility is basically a concept whereby companies decide voluntarily to contribute to a better society and a cleaner environment. Corporate social responsibility is represented by the contributions undertaken by companies to society through its business activities and its social investment. This is also to connect the Concept of sustainable development to the company's level.Over the last years an increasing number of companies worldwide started promoting their Corporate Social Responsibility strategies because the customers, the public and the investors expect them to act sustainable as well as responsible.

The Term Corporate Social Responsibility is imprecise and its application differs. CSR can not only refer to the compliance of human right standards, labor and social security arrangements, but also to the fight against climate change, sustainable management of natural resources and consumer protection.

E- TAILING OF MEDICINES IN INDIA BOON OR BANE

SHAIK SHAFIULLAH
Lecturer
Department of Commence
KBN College Autonomous
Vijayawada

ABSTRACT

Online pharmacies in India have significantly increased due to growing E-commerce in India. An online pharmacy is an Internet-based vendor of prescription drugs, and the term encompasses both legitimate and illegitimate pharmacies. The online sale and purchase of drugs and medicines in India is still a neglected area as far as regulations are concerned. Till January 2014 we have no dedicated online pharmacies laws in India and telemedicine laws in India. The cyber law trends and development in India 2013 (PDF) provided by Perry4Law have also highlighted this aspect. As a result illegal and unregulated online sales of medicines in India have increased a lot. This fact also came to the knowledge of Indian government and now online pharmacies websites of India are under regulatory scanner and punishment may follow. In fact, the fast growing and uncontrollable number of online pharmacies, mostly based abroad, has posed a serious challenge to State drug control authorities. They are simply not in a position to regulate the affairs of these online pharmacies that are openly violating the laws of India. The Drugs and Cosmetics Act, 1940, and the Drugs and Cosmetics Rules, 1945, have clear guidelines on the sale of Schedule H and Schedule X drugs. These can be sold only on prescription and there are specific rules, including for labeling. Even bar-coding of primary level packaging of export consignment of pharmaceuticals and drugs have been prescribed by India. The requirement of affixing barcodes on Primary Level packaging will take effect from 01.07.2014.Individuals and companies selling pharmaceutical products through website are also required to comply with various laws. These include laws related to medicines and pharmacy profession and cyber law of India. Surprisingly most of the online pharmacies stores and websites in India are not aware about the cyber law due diligence requirements and Internet intermediary liabilities. As a result they are violating the provisions of Information Technology Act, 2000.

Key Words: Uncontrollable Pharmacies, Telemedicine Schedule X Drug, **Bar**-coding etc..

Indian Multiplex: Drivers for Growth in Tier-2 and Tier-3 Cities

Sudheer Kumar J S*, Dr. A. Sathish Babu**

*Assistant Professor, Department of Business Administration,

SRK Institute of Technology, Enikepadu, Vijayawada, Andhra Pradesh

** Associate Professor, Department of Commerce and Management, VRS & YRN PG College, Chirala, Andhra Pradesh

Abstract: - Being India is one of the highest spending and fastest growing advertising market globally, has a wide scope for expansion of multiplexes. The Indian market is currently dominated by the four major players in multiplexes. A multiplex is a multi-screen entertainment complex projecting different films in same time under one roof with other supporting businesses such as food courts, shopping, video games, etc., Indian cities are classified based on the size of population, income levels, infrastructure in X, Y, Z categories. There is more room space for development of multiplexes in tier-2 and tier-3 cities as people from different streams with capability in spending amount for recreation are ready to enjoy the experience of multiplexes. There are key benefits to look for tier-2 and tier-3 cities in business development and drivers for growth are discussed in this paper.

Key Words: Multiplex, Entertainment, Cities, Recreation, Growth Drivers.

I. INTRODUCTION

Multiplexes are being the significant growth opportunity for the film industry. India is in need of 20000 screens to cater the needs of entire movie viewing population. But only 2000 screens across the country are available as of now. Being India is one of the highest spending and fastest growing advertising market globally, has a wide scope for expansion of multiplexes. The Indian market is currently dominated by the four major players in multiplexes. Of those, PVR Cinemas leading with 516 screens followed by INOX Leisure limited with 420 screens, 341 screens by carnival cinemas and Mexican chain Cinepolis positioned with 215 screens.

A multiplex is a multi-screen entertainment complex projecting different films in same time under one roof with other supporting businesses such as food courts, shopping, video games, etc., In olden days people use to watch a movie in the evening or in selected show timings of maximum four shows a day. Time being, it has been changed with the emergence of multiplexes as people can go and watch movies at about anytime and find something to watch. It is not so simple to just watch a movie and come back home now-a-days. During weekends people especially prefer to shop, eat and play along with watching movies.

II. CLASSIFICATION OF CITIES

Indian cities are classified by the Government of India based on the recommendations of sixth central pay commission and Reserve Bank of India, population census to allocate House Rent Allowance (HRA), Compensatory City Allowance (CCA) to public servants in 2008. Earlier the cities are classified into A-1, A, B-1, B-2, C, Z depending on the infrastructure available, population living, etc., Later it has been categorized into X, Y, Z and are commonly referred to Tier-1, Tier-2, Tier-3 Cities respectively.

The Reserve bank of India classifies centers into 6 tiers based on population as follows:

City Classification	Population
Tier-1	1,00,000 and above
Tier-2	50,000 to 99,999
Tier-3	20,000 to 49,999
Tier-4	10,000 to 19,999
Tier-5	5,000 to 9,999
Tier-6	Less than 5,000

Classification of cities based on population (group wise) by Reserve Bank of India as follows:

Name of the Centre	Population
Rural Centre	Up to 9,999
Semi-Urban Centre	10,000 to 99,999
Urban Centre	1,00,000 to 9,99,999
Metropolitan Centre	10,00,000 and above

FINITE ELEMENT STRESS ANALYSIS OF CRANE HOOK WITH DIFFERENT CROSS SECTIONS

B.Rama Rao[1], Abdul Raafe Mohammed[2]

[1]M.Tech Student, Dept.Of MECH, Sarojini Institute of Technology, Telaprolu(V), Unguturu (M), Gannavaram, krishna (D). A.P

[2]Assistant Professor, Dept.Of MECH, Sarojini Institute of Technology, Telaprolu(V), Unguturu (M), Gannavaram, krishna (D). A.P

ABSTRACT:

Crane hook is very basic and reliable component used in most industries. The design of crane hook contains such parameters like cross section of hook, material and radius of curvature. We have selected the cross section as a basic parameter to optimize the hook design which carries 8tons load. The design is generated in NX-UG and analyzed in Hypermesh (FEM). In this project we have compared the circular cross section with trapezoidal cross section.

I. INTRODUCTION:

Cranes are industrial machines that are mainly used for material movements in constructional sites, production halls, assembly lines, storage areas, power stations and similar places. [1] Crane hooks are the components which are used to lift heavy loads using wire ropes and cranes in constructional sites and industries. [2, 3] It is basically a hoisting fixture with pulley elongated by a rope or a chain designed to engage a ring or link of a lifting chain or the pin of a shackle or cable socket and must follow the health and safety guidelines. Hence, such an important component in an industry must be manufactured and designed in a way so as to deliver maximum performance without failure. [4, 5] Crane hooks with trapezoidal, circular, rectangular and triangular cross section are commonly used. Crane hooks are highly liable components and are always subjected to failure due to accumulation of large amount of stresses. Cranes undergo continuous loading and unloading. This causes fatigue of the crane hook. If the crack is developed in the crane hook, it can cause fracture of the hook and lead to serious accident. [6] In ductile fracture, the crack propagates continuously and is more easily detectable and hence preferred over brittle fracture. In brittle fracture, there is sudden propagation of the crack and the hook fails suddenly. This type of fracture is very dangerous as it is difficult to detect. [7] Control of lifting hooks can prevent the fall of the load during service and minimize the risk to which people are exposed in the danger zone. [8] Bending stresses combined with tensile stresses, weakening of hook due to wear, plastic deformation due to overloading, and excessive thermal stresses are some of the other reasons for failure. Continuous use of crane hooks which increases the magnitude of stresses and eventually results in failure of the hook may be prevented if the

stress concentration areas are well predicted and some design modification is made to reduce the stresses in these areas. [9] Thus the aim of this work is to design a crane hook using NX-CADD and assign Material properties of commonly used materials for hooks using ANSYS workbench and calculate the total deformation and von mises stress distribution. Von mises stress theory is considered in this work as the factor of safety in this theory is high which facilitates a safer design. The analysis is performed considering an ambient temperature of 25°C in order to replicate normal working conditions.

II IMPLEMENTATION:

Crane (machine)
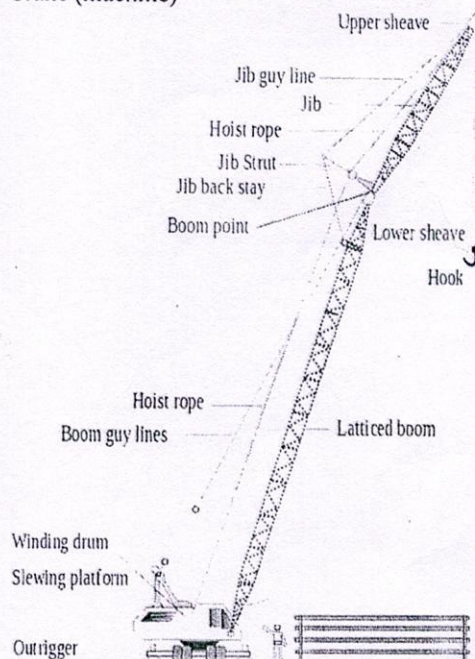
Modeling Combustion and Emissions of HSDI Diesel Engines Using Injectors with Different Spray Angles

Dr.K.Bala Showry

Principal

SRK Institute of Technology

Affiliated to JNTUK Vijayawada

gurikini@gmail.com

ABSTRACT

Due to the stringent legislation for emission of diesel engines and also increasing demand on fuel consumption, the importance of detailed 3D simulation of fuel injection, mixing and combustion have been increased in recent years. In the present work commercial validation tool was used for simulation has been used to study the performance and emission by using different included spray angles from 80 to 130 degrees. The simulation was performed with 50, 85,120 and 130 degrees. The predicted in cylinder pressure, temperature NOX and Sox values have been validated with experimental results. Simulations were conducted at detailed modeling of spray and mixture formation in a Fiat heavy duty diesel engine. The paper provides an overview of the sub models implemented, which account for liquid spray atomization droplet, secondary break-up, droplet collision, impingement, turbulent dispersion and evaporation. NOX and Soot emission data were obtained with the use of Zeldowich mechanism and Hiroyasu model. Simulations have shown a very good agreement in terms of pressure NOX and PM. Injection was modeled using Lagrangian approach and reaction was modeled using non premixed combustion.

Keywords

Diesel engine, combustion, pollution, Computational Fluid dynamics (CFD), Duration of injection (DOI), start of injection (SOI)

1. INTRODUCTION

Diesel engine is widely used in heavy duty transport applications. Diesel engine is more fuel efficient than spark ignition engine on the other side they have relatively higher emissions and noise levels. Diesel engine manufacturers have to address these problems to meet current and future government regulations which limit particulate and NOX emissions, while maintaining a quite efficient engine to satisfy the consumers. Particulate matter and NOX production along with engine noise highly depend on the combustion process Therefore precise control over the fuel injection and spray formation is essential in making improvements to the combustion process .The optimum pressure and optimum nozzle diameter increases the performance and consequently reduces the particulate matter with the better atomization and fuel- air mixing. This in turn unfortunately increases NOX because of high temperature. To improve the performance and to reduce the NOX –particulate formation without scarifying the fuel consumption, it is important to understand the relationships between various injection parameters and how they affect the combustion process. Along with the injection pressure and nozzle diameter other injection parameters like such as nozzle hole L/D ratio, rate of injection profile , effect of fuel spray ,spray characteristics , that may affect the droplet size, spray penetration exit velocity and spray cone angle. Use of multiple injections can reduce particulate emissions by as much as a factor of three without increasing NOX emissions. This will be done by better mixing later in the cycle. Optimizing the injection pressure, injection angle and optimizing the nozzle diameter has proven to be an effective way to reduce particulate emissions and consequently improves the engine performance. Multiple injection strategies have been reported for simultaneous reduction of NOX and PM in a large bore direct injection diesel engine [1, 2, 3].Small bore diesel engines results shown by Nehmer and Reitz [2] that pulsated injection might provide a method to reduce PM and allow for reduction of NOX from controlled pressure rise. The effectiveness of double, triple and rate shaped injection strategies to simultaneously reduce NOX and PM was also evaluated. Numerical simulations were carried out to explore the mechanism of soot and NOX reduction for multiple injections [4]. Multiple injection strategies have a similar effect to the restarted single injection on NOX reduction. Reduced emissions are due to the fact that the soot producing rich region is not replenished when the injection pressure is terminated and restarted. Zang investigated the effect of [5] pilot injection on NOX , Soot emissions and combustion noise in a small diesel engine, soot emission was seen relevant to the pilot flame and reducing the pilot flame at the main injection starting time can reduce soot emissions. By optimizing pilot injection timings and quantity maintaining and dwell between main and pilot injections simultaneous reduction of NOX and PM was obtained in a HSDI diesel engine [6].It was also shown that simultaneous reduction of combustion noise and emission is possible by the influence of the pilot burned gas through minimizing the fuel quantity by advancing the pilot injection timing [7].Combustion concepts like homogeneous charge compression ignition combustion have been shown to be effective for NOX and PM reduction. The concept of HCCI was applied initially to spark ignition engines because of its volatility property for better homogeneous mixture, where as in diesel engines this concept has been delayed as diesel has low volatility. With the concept of multi pulse injection the problem of homogeneous mixture in diesel engines could be solved and the same has been applied for high speed direct injection diesel engines effectively. Hashizume [8] proposed a low soot solution called multiple stage diesel combustion for higher load operating conditions. Although, soothing luminous flame was observed, this luminous flame disappeared quickly and most of the soot was oxidized rapidly smoke and NOX were reduced. Su W ,Lin T, Pei Y.A have done work[9]on multi pulse HCCI diesel engine ,they used multiple short injection pulses for early injection and followed by main injection near top dead center and they found that for very early injection a

Distinctive Voices of Women: A Feminist Study of
Amitav Ghosh's *The Glass Palace*

Mr. Anand Dampella	**Ms. Prescilla Palaparthi**
Asst. Professor of English	Asst. Professor of English
SRK Institute of Technology	SRK Institute of Technology
Vijayawada	Vijayawada

Post-colonial feminist critics have raised a number of conceptual, methodological and political problems involved in the study of representations of gender. These problems are at once specific to feminist concerns, such as the possibility of finding an international, multicultural sisterhood between 'First World' and 'Third World' women as well as the other problems.

Feminism might be categorised into three groups: theories having a essentialist focus, which includes psychoanalytic and French feminism; theories aimed at defining or establishing a feminist literary canon or theories seeking to re-interpret and re-vision literature from less patriarchal slant which includes gyno-criticism and liberal feminism; and theories focusing on sexual differences and sexual politics including gender studies, radical feminism, cultural feminism, lesbian studies and socialist or materialist feminism.

But on a whole feminism is divided into 'First World' feminism, 'Second World' feminism and the 'Third World' feminism. The 'First World' referred to the rich, predominantly western nations in Europe, America and Australia. The 'Second World' denoted the Soviet Union and its

Distinctive Voices of Women: A Feminist Study of
Amitav Ghosh's *The Glass Palace*

Mr. Anand Dampella

Asst. Professor of English

SRK Institute of Technology

Vijayawada

Ms. Prescilla Palaparthi

Asst. Professor of English

SRK Institute of Technology

Vijayawada

Post-colonial feminist critics have raised a number of conceptual, methodological and political problems involved in the study of representations of gender. These problems are at once specific to feminist concerns, such as the possibility of finding an international, multicultural sisterhood between 'First World' and 'Third World' women as well as the other problems.

Feminism might be categorised into three groups: theories having a essentialist focus, which includes psychoanalytic and French feminism; theories aimed at defining or establishing a feminist literary canon or theories seeking to re-interpret and re-vision literature from less patriarchal slant which includes gyno-criticism and liberal feminism; and theories focusing on sexual differences and sexual politics including gender studies, radical feminism, cultural feminism, lesbian studies and socialist or materialist feminism.

But on a whole feminism is divided into 'First World' feminism, 'Second World' feminism and the 'Third World' feminism. The 'First World' referred to the rich, predominantly western nations in Europe, America and Australia. The 'Second World' denoted the Soviet Union and its

A NEW HISTORICIST READING OF AMITAV GHOSH'S *THE GLASS PALACE*

Anand Dampella

English Language Instructor

Technical Training and Administrative Institute

Barka

Sultanate of Oman

The term 'new historicism' was first used by the American critic Stephen Greenblatt whose book *Renaissance Self-Fashioning: from More to Shakespeare* (1980) is regarded as its beginning. However, similar tendencies can be seen in works by various critics published during the 1970's, a good example being J.W. Lever's *The Tragedy of State: A Study of Jacobean Drama*. A simple definition of the new historicism is that it is a method based on the parallel reading of literary and non-literary texts, generally of the same period. That is to say, new historicism refuses to 'privilege' the literary text, instead of a literary 'foreground' and a historical 'background' it envisages and practices a mode of study in which literary and non-literary works are given equal weight and constantly inform or interrogate each other. This 'equal weighting' is proposed in the definition of new historicism offered by the American critics Louis Montrose who defines it as a combined interest in 'the textuality of history, the historicity of texts'. It involves 'an intensified willingness to read all the textual traces of the past with the attention traditionally conferred only on literary texts'.

Many Indian English writers have turned to the past as much to trace the deepening attitude of nationalism so as to cherish the memories of the bygone days. Ghosh's concept of history colours all his writing. *The Glass Palace* presents history as a collective memory, which folds in a symbiotic fashion all that existed in the past into all that happens in the present. His narrative technique combined with his treatment of history weaves delicate connections between different phenomena, so that no incident becomes absolutely autonomous. This generates the mobility with which history traverses past and present, creating a standard fluid pattern of time. There is no attempt on the part of the writer to squeeze history into a preconceived shape. Certainly Ghosh's sense of history retains its historicity, a happy outcome that has eluded many great writers. In his hands, history becomes a process, which hinges on characters

INTERNATIONAL JOURNAL OF ADVANCED BIOLOGICAL RESEARCH

SYNTHESIS AND CYTOTOXIC EVALUATION OF FATTY ACID BASED-AMINO ALCOHOLS

Gorla Geethanjali[a], Korlipara V. Padmaja[a*], Pombala Sujitha[b], C. Ganesh Kumar[b], Rachapudi Badari N Prasad[a]
[a]Centre for Lipid Research, [b]Medicinal Chemistry and Pharmacology Division, CSIR-Indian Institute of Chemical Technology, Uppal Road, Hyderabad 500007, India.
* Corresponding Author e-mail: padmajak@iict.res.in

ABSTRACT
In the present investigation, we describe the synthesis of β-amino alcohols from a medium chain fatty acid, 10-undecenoic acid and evaluation of their cytotoxicity. Nucleophilic ring opening reactions of epoxy undecanoates of varying ester chain lengths (C_1-C_8) with aniline in equimolar ratio (1:1) was carried out using Bronsted acidic ionic liquid, 1-methylimidazolium tetrafluoroborate, thus playing a dual role of solvent as well as a reaction medium. The cytotoxic properties of the amino alcohols of 10-undecenoic acid were evaluated. It was observed that the compound 4f showed promising cytotoxicity against HeLa, compound 4a showed good activity against A549 cell line, while compounds 4a, 4c showed good activity against MDA-MB-231 cell line. All other compounds showed moderate activity against all the other tested cell lines.

KEYWORDS: 10-Undecenoic acid, Amino alcohols, Ionic liquid, Cytotoxicity, Anticancer agents.

INTRODUCTION

Amino alcohols are versatile intermediates in the synthesis of a vast range of biologically active natural and synthetic products. β-amino alcohols find diverse applications as chemotherapeutic agents, precursors for the synthesis of heterocycles, chiral auxiliaries, and ligands[1]. Amino alcohol N-acyl derivatives are identified as therapeutic agents against the neurogenic endoneural edema of the peripheral nerve[2]. Spingosine, (2S, 3R, 4E)-2-amino-4-octadecene-l, 3-diol, a long chain amino alcohol is known to play a vital role in the sphingolipid metabolism[3,4]. Some researchers have investigated the structure-activity relationships between the lipid chain length and the bipolar sphingolipid-like head groups and their potential use in antifungal therapy[5]. Various starting materials such as lipidic amino acids, serine, glyceraldehydes, and long chain 1, 2-diols[6] were used to synthesize the sphingosine analogues[7,8] and long chain 2-amino alcohols. In the literature, the reported methodologies for the synthesis of amino alcohols employed catalysts like rare earth metal halides, alkali metal perchlorates, and metal triflates by ring opening of epoxide with amines [9-13]. However, the reported methodologies have certain drawbacks such as potential rearrangement to allylic alcohols, requirement of stoichiometric amounts of catalyst, elevated temperatures, moderate yields *etc*. The synthesis of β-amino alcohols from terminal epoxy fatty acid methyl esters like methyl epoxy stearate and 10-undecenoic acid using zinc (II) per chlorate hexahydrate as catalyst at 80°C using cyclic, aliphatic and aromatic amines except aniline was reported However, their performance evaluation for biological studies was not reported [14, 15]. Ionic liquids have emerged as environmentally benign and an alternate reaction media to the organic solvents particularly the chlorinated hydrocarbons are widely used in organic synthesis for

various chemical and biotransformations [16, 17]. An ionic liquid exhibits unique properties such as tunable polarity, high thermal stability, immiscibility with a number of organic solvents, negligible vapor pressure, and recyclability [18]. The enhanced rates of chemical processes are due to their high polarity and solubilizing ability in both inorganic and organic compounds, we herein report synthesis of six alkyl 11-anilino-10-hydroxyundecanoates from their epoxy derivatives of varying ester chain length (C_1-C_8) using [Hmim] BF_4 as reaction medium for the synthesis. The synthesized β-amino alcohols were characterized by spectral analyses and evaluated for their cytotoxic activities.

MATERIALS AND METHODS

Materials

Aniline, diethyl ether, dichloromethane and meta chloroperbenzoic acid (mCPBA) were purchased from Sigma Aldrich (St. Louis, USA). 2-ethylhexanol, n-butanol, i-butanol, iso-propanol, methanol, hexane, ethyl acetate and ethanol were purchased from Qualigens Fine Chemicals (Mumbai, India). *p*-Toluene sulphonic acid (p-TSA), sulfuric acid (AR grade), Tetraflouro boric acid and methyl imidazole were purchased from M/s S.D. Fine-Chem Ltd., Mumbai. All the chemicals were used directly without further purification.

Spectral analysis

^{1}H NMR spectra were recorded on a Brucker (Wissenbourg, France) AR x 400 Spectrometer (400 MHz) with $CDCl_3$ solvent using TMS as internal standard. Infrared (IR) spectra were recorded on a 1600 FT-IR Perkin-Elmer Spectrophotometer (Norwalk, CT) with a liquid film between NaCl discs. Agilent 6890 Series Gas Chromatograph equipped with FID detector was used in GC analysis, using the capillary column HP1 (30 m x 0.25

REMOVAL OF CARCINOGENIC DYES FROM TEXTILE EFFLUENTS BY USING ACTIVATED CARBON PREPARED FROM AGRICULTURAL WASTE

T. V. NAGALAKSHMI[1], K. A. EMMANUEL[2], V.A.N.SATISH[3], K.JOHAR[4], D.S.PAVAN KUMAR[5], P.N.V.PRASADA RAO[6]

[1]Department of Chemistry, LakiReddy BaliReddy College of Engineering, Mylavaram -521230, A.P., India.

[2,3,4,5,6]Department of Chemistry, Sir C.R.Reddy Autonomous College, Eluru-534 007, A.P., India.
*E-mail address: mannava_laxmi@yahoo.co.in

ABSTRACT

In the present paper adsorption technique was employed for removal of Basic Blue 54 dye. Basic Blue 54 dye is a carcinogenic dye which comes in the effluents of textile industries during dyeing and rinsing processes. The technique was found to be very useful and cost effective for a better removal of dye. Although commercial activated carbon is a preferred sorbent for colour removal, its wide spread use is restricted due to high cost. Currently, the study of activated Jack fruit carbon as a low cost sorbent for removing dye has drawn attention of various researchers working in this field. In the present work, Jack fruit carbon (JC) in the form of powder was investigated for removing dyes taking Basic Blue 54 as a model system. The adsorbent was made from Jack fruit procured from Paderu and was investigated under variable system parameters such as agitation time and dose of adsorbent. An amount of 0.1 g/l of JC could remove 10 to 99 % of the dye from an aqueous solution of 50 ppm with the agitation time increasing from 20 min to 40 min. The interactions were tested for both pseudo first- order and second – order kinetics and it was observed that the interactions could be better explained on the basis of pseudo second order kinetics.

Keywords: Activated carbon, adsorption, effluents, Basic Blue 54, contact time, kinetics

I. INTRODUCTION

Colored wastewater could be generated from several industries such as textile, ceramic, rubber, paper, leather, printing, plastic, cosmetics, etc. These industries commonly use synthetic dyestuff as their colorant [1-3]. Discharge of this dye-containing-wastewater into environment can contaminate surface water and ground water system [4]. The presence of dyes even in very small amounts in water system is undesirable since dyes are highly visible and can result in a hazard to the aquatic life [5]. Furthermore, some of dyes have been reported to be mutagenic and carcinogenic especially for human [1, 6].

In the present study we used nitric acid as activating agent for activated carbon preparation using jackfruit (*Artocarpus heterophyllus*) peel waste as the precursor [7]. Here we used the activated carbon from jackfruit peel to remove Basic blue 54 from aqueous solution. The adsorption equilibrium and kinetic of Basic blue 54 onto activated carbon prepared from jackfruit peel waste were also studied. Basic blue 54 (BB 54) is one of frequently used dyes.

PRINCIPAL
SRK Institute of Technology
ENIKEPADU, VIJAYAWADA-521 108.

Decolourization of Textile Effluents to Maintain Water Quality by Using Activated Carbon

[1]T. V. Nagalakshmi, [2]K. A. Emmanuel, [3]Dr. N.V.V.S. Prasad

[1]Dept. of Chemistry, LakiReddy BaliReddy College of Engineering, Mylavara, AP, India

[2,3]Dept. of Chemistry, Sir C.R.Reddy Autonomous College, Eluru, AP, India

Abstract

Textile industries use large amount of dyes for finishing process. These dyes are chemical compounds which become a serious environmental problem if they are discharged as wastewater without any treatment. Three activated carbons were prepared from bio-waste material which is characterized by SEM, FTIR and TPD finally their adsorption efficiency in removal toxic materials from textile effluents was tested. During sequential operation of these carbons, textile effluents were decolorized with better results like 7, 5 and 3 m^{-1} absorbance at wavelengths of 436, 525 and 620 nm respectively. 2 g of each adsorbent and at optimum contact time of 40 min removed 93% of colour form collected textile effluents.

Keywords

Textile effluents, Removal, Dye, SEM, FTIR

I. Introduction

Water is the most precious, limited natural resource on this biosphere which is essential to the survival of all living beings. Discharge of effluents from industrial processes adds hazardous chemicals to surface and ground water. Textile industries consume large volumes of water, dyes and auxiliary chemicals for processing of textiles. Due to incomplete exhaustion and washing operations, 10-20% of dyes were discharged into effluents [1]. Many of these dyes were toxic and carcinogenic thus affecting the aquatic biota and human health [2]. The world population was expected to be increased by 35% by 2050 [3]. This population growth will increase the production of clothes, which in turn, increases fresh water use. So conserving water and reducing water pollution will become a challenging and essential task for textile industries. Numerous methods are available for the removal of colour from waters and wastewaters such as membrane separation, aerobic and anaerobic degradation using various microorganisms, chemical oxidation, coagulation and flocculation, and reverse osmosis. Some of these techniques have been shown to be effective however they have some limitations such as excess amount of chemical usage, accumulation of concentrated sludge that has serious disposal problems and lack of effective colour reduction. The adsorption technique, which is based on the transfer of pollutants from the solution to the solid phase, is known as one of the efficient and general wastewater treatment method [4]. The method is superior to other dye removal techniques in terms of initial cost, simplicity of design, ease of operation, and non-toxicity of the utilized adsorbents compared to other conventional wastewater treatment methods [5]. The cost effectiveness, availability and adsorptive properties are the main criteria in selection of an adsorbent to remove organic compounds from wastewaters [6], also application of adsorption procedure especially based on non-toxic and green adsorbent with high surface area and reactive surface atom is a great demand [7].

In industrial processes activated carbons are widely used as adsorbents which are composed of a micro porous, homogenous structure with high surface area and shows radiation stability [8]. The process for producing high-efficiency activated carbon is not completely investigated in developing countries. Furthermore, there are many problems with the regeneration of used activated carbon. Nowadays, there is a great interest in finding inexpensive and effective alternatives to the existing commercial activated carbon [9]. Exploring effective and low-cost activated carbon may contribute to environmental sustainability and offer benefits for future commercial applications. The costs of activated carbon prepared from biomaterials are very low compared to the cost of commercial activated carbon. Waste materials that have been successfully used to manufacture activated carbon in the recent past include waste wood [10], bagasse [11] orange peel [12], coffee husk [13], pine cone [14], coconut tree [15], sunflower seed hull [16], and Coconut husk [17].

The main objective of the present study is to prepare activated carbons from Sugarcane (SC) waste then the prepared activated carbons were characterized by TPD, FTIR and XPS. The effluents are collected from three different places of Mangalagiri town of Guntur district, Andhrapradesh, India. The efficiency of prepared carbons in decolorizing these textile effluents was studied.

II. Materials and Methods

A. Preparation of Activated Carbons

The raw material Sugar Cane (SC) waste was collected from local juice stall Vijayawada, A.P., India. The waste of sugarcane was used as precursor for preparation of activated carbon. The waste was washed with hot distilled water dehydrated at 110oC. This dried waste was then cut into small pieces. It was mixed with K_2CO_3 solution in 1:1 ratio and was carbonized in uniform nitrogen flow at 500°C. The heating was provided at rate of 10°C min^{-1}. At high temperature more than 500°C, some micropores might have combined to give large number of measopores and macropores. As a result the surface area of prepared activated carbons might be decreased at this temperature. The prepared activated carbon were cooled to room temperature and washed with hot distilled water to remove remaining chemicals and filtered. The washing and filtration steps were repeated until the filtrate showed neutral pH and finally dried. The carbon is named as SC_{500}. In order to introduce different functional groups it was divided into two parts. One part was subjected to liquid phase oxidation with 0.1N HNO_3 and the other part was soaked in 0.1N KOH for 3 hr and evaporated at 110°C. Both carbons were washed with distilled water until filtrate showed neutral pH. These carbons were dehydrated in an oven overnight at 105°C and named as 'SC_{HNO3}' and 'SC_{KOH}', indicating the chemical activating agent.

B. Characterization of Prepared Activated Carbons

Thermal stability of carbons was analyzed by temperature programmed desorption (TPD) studies. Point of zero charge was determined for SC_{500}, SC_{HNO3} and SCKOH. The nature of functional groups present on surface of activated carbons was