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Corn Silk- A Medicinal Boon

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Abstract : Herbs are one of humanity's oldest known health care therapeutic essentials for a sustainable health, which forms the basic platform of modern medicines. Through out the world, there is now an inclination and search for stable diets with added value. One such important herb which is found extensively all over the world is corn silk. It is scientifically referred to as *Maydis stigma or Zea* as they reflect the soft, fiber-like growth that accompanies the ear of the corn.

Corn silk is an essential herb that is used traditionally to treat a wide range of diseases. Its potential use is very much related to its properties and mechanism of action of its plant's bioactive constituents such as flavonoids, terpenoids, etc. Pharmacological studies have proved that this traditional herb was found to have medicinal properties like anti-oxidant, anti-depressant, anti-hyperlidemic, anti-diabetic,anti-inflammatory,neuroprotective toxicity and many more properties.

Keywords : therapeutic; Corn silk; traditionally; Pharmacological studies.

Introduction

Corn silk is considered as a waste byproduct of maize(corn). Maize being the third most planted food crop and one of the major energy sources,it is also one of the essential cereal and edible grain the world possesses. Cornsilk,a part from having proteins, vitamins, carbohydrates, also is an excellent source of fixed and volatile oils, steroids like sitosterol, stigmasterol, alkaloids, saponins and other natural antioxidants like flavanoids. The flowers of corn are monoecious. The male flowers called as tassels which produce yellow pollen. The female flowers produce corn silk. The silks function as a stigma of a female flower and as the fruit develops, the silk elongates beyond the cob covering the edible part of the plant. Initially, the colour of corn silk is light green, which later turns to red, yellow or light brown. Each silk of corn may be pollinated to produce one kernel of corn.It also contains maizeric acid, resin, sugar, mucilage, fibres that are essential for diet[1].It also contains chemicals that work like water pills(diuretics),and it can also alter blood sugar levels and is also helpful in reducing inflammations.[2]

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"Effect of Fiber Volume on Mechanical Properties of Alkaline Treated Unidirectional Long Kenaf Fiber with Egg Shell Powder Reinforced Polymer Matrix Composite"

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Abstract - **Recently due to increasing interest in eco-friendly materials, studies on ecofriendly fiber obtained from nature have been actively conducted to the area of composite. Natural plant fibers like Jute, Sisal, Coir, Kenaf, Flax, Hemp, Sugarcane Bagasse, Bamboo pineapple leaf and Banana are typically used in composites as a reinforcing material either as continuous (very long) or discontinuous (chopped) fibers due to their low cost, high tensile strength, low thermal expansion, high strength to weight ratio, renewability, biodegradability and exponential growth. Although, the natural fiber has less strength than the synthetic fiber such as carbon fiber, it has similar strength to glass fiber. Accordingly, it can apply as very advantageous composite when an appropriate resin has been selected. Environmental concerns are now driving demand for recycled polymer (Thermoplastics) such as Polypropylene (PP), Poly Ethylene (PE), Polystyrene (PS), Polyethylene Sulphide (PPS), and Polyolefin etc. For various applications, especially in automotive and aircraft industries. The specimens are prepared according to ASTM standards and the different values are observed. Here filler material used is Egg powder which enhances the tensile property of the material.**

1.0 INTRODUCTION

The composites industry has begun to recognize that the commercial applications of composites promise to offer much larger business opportunities than the aerospace sector due to the sheer size of transportation industry. Thus the shift of composite applications from aircraft to other commercial uses has become prominent in recent years. Increasingly enabled by the introduction of newer polymer resin matrix materials and high performance reinforcement fibers of glass, carbon and aramid, the penetration of these advanced materials has witnessed a steady expansion in uses and volume. The increased volume has resulted in an expected reduction in costs. High performance FRP can now be found in such diverse applications as composite armoring designed to resist explosive impacts, fuel cylinders for natural gas vehicles, windmill blades, industrial drive shafts, support beams of highway bridges and even paper making rollers. For certain applications, the use of composites rather than metals has in fact resulted in savings of both cost and weight.

1.1Definition of Composite

A composite material is defined as the combination of two or more macro constituent materials, which are essentially insoluble into each other such that the properties of the combination are better than the sum of the properties of each constituent taken separately. The objective of this combination is to derive the best qualities of the constituent materials. These composites exhibit desirable qualities, which the constituents themselves may not possess.

1.2types of Composites

In a broad way composite materials can be classified into three groups in the basis of matrix materials. They are:

1. Metal matrix composites (MMC)
2. Ceramic matrix composites (CMC)
3. Polymer matrix composites (PMC)

1.2.1metal Matrix Composites:

These composites have many advantages over monolithic metals like higher specific strength, higher specific modulus, better properties at elevated temperatures, and lower coefficient of thermal expansion. Due to these attributes metal matrix composites are under consideration for wide range of applications.

1.2.2ceramic Matrix Composites:

One of the main objectives in preparing ceramic matrix composites is to increase the toughness. Naturally it is hoped and also it is found that there is a contomitant improvement in strength and stiffness of ceramic matrix composites.

1.2.3polymer Matrix Composites:

Most commonly used matrix materials are polymeric. In general the mechanical properties of polymers are inadequate for many structural purposes. Generally their strength and stiffness are low compared to metals and ceramics. To overcome these difficulties other materials are reinforced with polymers.

Two types of polymer composites are:

- Fiber reinforced polymer (FRP)
- Particle reinforced polymer (PRP)

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Analysis and design of multistoreyed parking building proposed at Jalahalli cross, Bangaluru

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Abstract - Now-a-day there is an increase in the number of vehicles on road. For proper storage of vehicle when not in use "parking space" is needed. When the person has to stop on route for some purpose other than traffic related, the vehicle needs some halting facility, without disturbing traffic flow otherwise on the street Such a facility is called parking. Due to increase in population there is increase in vehicle demand and we require more parking space thus in control by constructing multi-storeyed parking building.

Where parking area is unplanned, there is a need to make an improvement in the parking area by constructing multi-storeyed parking building. Parking structures has been an important element in today's urban and suburban environments.

Key Words: analysis, design, shear wall.

1. INTRODUCTION

Parking is the act of stopping and disengaging a vehicle and leaving it unoccupied. Parking on one or both sides of a road is often permitted, though sometimes with restrictions. Some buildings have parking facilities for use of the buildings' users.

TYPES OF PARKING LOT

- On street parking
  It is having three types:
  a) Parallel parking
  b) Perpendicular parking
  c) Angle parking

- Off street parking
  Off street parking are having five types:
  a) Surface car parking
  b) Multi story car parking
  c) Roof parking
  d) Mechanical car parking
  e) Underground car parking

Most multi-storey car parks are located where land costs are so high, e.g. in or about the central areas of large towns, that it is more economical to build vertical facilities rather than purchase additional land for surface parking. Multi-storey facilities can be or multi-purpose, i.e. containing other uses (e.g. offices or shopping) within the same structure; however, the more expensive the land the greater the likelihood of a parking facility being designed for multi-usage purposes. The city of Bengaluru is seeking proposals from professional designing teams to provide all labour, materials and provisions necessary to produce conceptual designs, final design, construction documents and construction of a parking building at Jalahalli cross, Bengaluru. The facility will provide a suitable parking environment for citizens and visitors to the commercial area.

2. LITERATURE REVIEW

1. Design And Analysis Of Multistorey Parking
B Vamsi, Dr. Dumpa Venkateswarlu, Dr. D V Rama Murthy [Ijrsae].
This project is aimed to design an efficient parking system and helps to minimize the parking area in the city. In the modern world where the parking space has become a major concern, in our city. The VISAKHAPATNAM city is recommended for smart city, which includes all the facilities like tourism, commercial complexes, institutions etc.
The traffic scenario is changing from day to day. All these facilities leads to the traffic congestion and efficient need for parking. To avoid this problem we suggest the design of "Multi-storey parking" at Dandubazar market near Jagadamba center, which might be a shopping hub in future. To control parking problems we suggest multi story parking system in this place. This multi storey parking enables the parking of vehicles, floor after floor and thus reducing the wastage of space. Here, we provided parking for more than 277 cars according to design. In order to determine the requirements of such parking system, we designed the building for G+3 floors.

2. A study of analysis and design of multi level parking
Upendra singh dandotia1 , Rakesh Gupta2 , Mukesh Pandey3 (IJEDR)

Car parking has been a serious issue due to rapid increase in vehicles and to cater this problem we require parking slots in important markets. We have limited land source so the construction of multilevel parking is very important as it accommodates large no. of vehicles at one place. In this project we have designed multi-level parking for capacity of 600 cars and 550 bikes. Multilevel parking is of G+2+2 Basement having 13 shops on ground floor and its design is based on framed structure. In this work we have designed different components of the multi-level parking i.e. raft foundation, retaining walls, beams, column and flat slab

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Analysis and design of Indoor Stadium building Using ETABS proposed at Sapthagiri college of Engineering, Bangalore

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Abstract - In this growing world, as civil engineering student one needs to be fully aware of structural elements and the safety parameters before and during the execution of project. As an outcome to this an attempt has been made to learn the process of analysis and design of multistory building using Limit state method. This project focuses on Analysis and Design of Indoor Stadium for Sapthagiri College of Engineering. The design, using Limit State Method is taken up. In the limit state of collapse, the strength and stability of structure is ensured. The guidelines being followed are as per IS 456:2000 and IS 800:2007. The present project deals with the Analysis and Design of Indoor stadium of G+2 Floors proposed for Sapthagiri College of engineering. All the structural elements are designed as per codal provision ETABS features contains powerful graphical interface with modeling, analytical, and design procedures. It is quick and very easy for simple structures. It can handle the largest and most complex building models.

Key Words: Design, Analysis, ETABS, AUTOCADD.

1. INTRODUCTION

The indoor stadium is a covered or a not covered enclosed area, often circular or oval shaped, designed to showcase theatre, musical performances, or sporting events. It is composed of large open space surrounded on most or all sides by seating for spectators. The key feature of an indoor stadium is that the event space is the lowest point, allowing for maximum visibility.

College indoor stadium is an important indicator to measure universities physical education, its function not only is required to meet college sports education , sports events undertaking, but also it should provide social services for mass sports activities development An Indoor stadium is a group of sports facilities. The sports facilities are of indoor kind for e.g. table tennis, carom, chess, gymnasium etc. sports are the integral part of the student life so it is the essential requirement of good educational institution. It makes institution reputation higher and also increases the financial status.

The design guide provides design principles to achieving an appropriately high quality stadium development that makes a positive contribution to the public environment.

The stadium sites is ideally suited for its intended use, being large, flat and also close enough to the city to be identified with its center and to facilitate excellent access to all modes of transport. Furthermore this site being close to the railway station, defining a major route into the city, provides an ideal setting for building that by virtue of its scale and function alone will become a major land mark and make a positive contribution to the urban form and image of the college.

Indoor stadium solve all the problems and limitations inherent in outdoor stadium. You do not have to skip games because of the weather and you can play in comfort in a controlled environment.

2. LITERATURE REVIEW

1. Analysis& Design of sports complex using ETABS

Sachin P Dyavappanavar ,Maheshkumar VS, Abhishek GJ, Chethan GN (IJIRSET)

The design process of structural planning and design requires not only imagination and conceptual thinking but also sound knowledge of science of structural engineering besides the knowledge of practical aspects. The purpose of standards is to ensure and enhance the safety, keeping careful balance between economy and safety. In the present study G+1 building is designed (Slabs, Beams, Columns and Footings) ETAB's software. In order to design them, it is important to first obtain the plan of the particular building that is, positioning of the particular rooms, that they serve their respective purpose and also suiting to the requirement and comfort of the users. Thereby depending on the suitability; plan layout of beams and the position of columns are fixed. Thereafter, the loads are calculated namely the dead loads, which depend on the unit weight of the materials used (concrete, brick) and the live loads, which according to the code IS:456- 2000 and HYSD BARS Fe500 as per IS:875-1987 part II. Safe bearing capacity of soil is adopted as 140KN/m2.

2. Seismic Analysis of Indoor auditorium

DilipanboseS, Aravindan S (JCEE) The project titled "Seismic analysis of Indoor Auditorium" has been taken up with an objective to determine the seismic response and behavior of an Auditorium constructed in Chennai area. Even though Chennai is considered as least prone to major earthquake, it is expected that a structure would survive major

COMPARATIVE STUDY OF SEISMIC ANALYSIS OF MULTISTORIED BUILDING WITH SHEAR WALL AND BRACINGS

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Abstract

Multistorey building would be the greater part influenced by quake constrains to seismic prone areas. The major concern in the design of the multi-storey building is the structure to have enough lateral stability to resist lateral forces, buckling, to control lateral drift and displacement of the building. The application of the shear wall system in Reinforced Concrete (RC) buildings has been widely used to minimize seismic consequences. Besides, the buildings with concentrated steel bracings system are used for the same reasons in steel structures buildings. Both of the systems have significance of the structural performance. Although both systems are used for same reasons, their effect shows unequal variations and behavior against seismic load.

In this project, G+9 storey building, along with shear wall and bracings are being considered for the analysis. The performance of building will be evaluated on the basis of following parameters –Storey displacement, Storey drift, Base shear. In this work, the shear walls and bracings are provided at different locations with the overall analysis to be carried out using Etabs9.7 software.

Keywords: *ETAB, Seismic analysis, Bracings, Shear wall.*

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1. INTRODUCTION

1.1 Overview

An earthquake is a sudden movement of earth's crust, which originate naturally at or below the surface. In the previous twenty-eight years, considerable severe earthquakes occurred in the world at intervals of 5 to 10 years, have caused severe damages. Socio investment misfortunes have been expanded in the planet because of foundation about new urban communities to seismic tremor inclined zones. Among all the natural hazards, earthquake is most dangerous. For safety of the buildings, it is necessary that structures should have adequate lateral stability, strength, and sufficient ductility. In place to secure structures against harms previously, advancing earthquakes to extend edifices alternately should change their applications, concentrating on available states for structures and making them safe against quake may be a greater amount crucial. This work focuses on comparison of seismic analysis of G+9 building with bracings and shear walls. The performance of the building is analyzed in Zone IV and Zone V.

For my study I considered bare frame, shear wall at corners, shear wall at sides, shear wall at core, bracings at corners, bracings at sides and bracings at core are considered.

Shear Wall

Shear divider is a structural framework made for propped panels would otherwise called shear panels to counter the impacts of parallel load acting on the structure. Generally, shear divider is characterized as structural part equipped will stand up to consolidation of shear wall. Furthermore, pivotal load prompted by parallel load and gravity load exchange of the divider starting with different structural part. Wind seismic loads need aid practically as a relatable point loads that shear dividers are planned to convey. Shear dividers stand up in-plane loads need aid connected along its tallness. RC Multi-Storey structures need aid sufficient for opposing both different and level load.

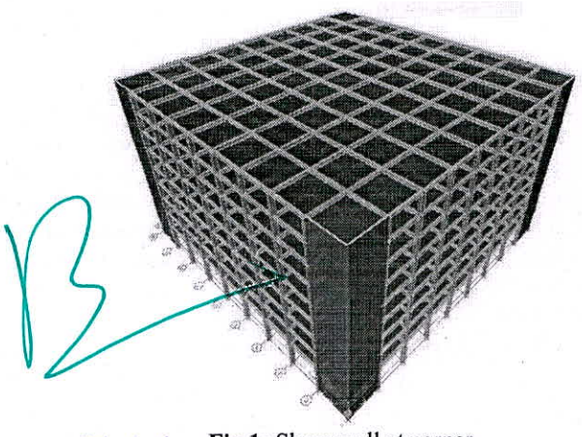

Fig 1: Shear wall at corner

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Identification of Lung Cancer Related Genes Using Enhanced Floyd Warshall Algorithm in a Protein to Protein Interaction Network

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Abstract: Lung cancer is defined as an uncontrolled cell growing in the tissues of lung, which is also said to be lung tumor. The lung cancer is curable in the starting stage, but identifying the lung cancer in starting stage is very difficult. In recent decades, researchers showed great interest on gene level lung cancer identification using shortest path between the lung cancer related genes. Many research has been done to identify the shortest path between the genes, but the conventional methods consumes more time for processing the data. In this research, Protein to Protein Interaction (PPI) structure is constructed from the weighted protein present in the Search Tool for the Retrieval of Interacting Genes/Proteins (STRING) database. For identifying the shortest path between the genes in PPI, an effective algorithm: enhanced Floyd warshall algorithm is proposed. Floyd warshall is efficient in finding the shortest path between the genes and also solves all pairs of shortest path problem. A major drawback of Floyd warshall algorithm is, it works slower than other conventional algorithms designed to perform the same task. To improve the performance of traditional Floyd warshall algorithm, an iterative matrix is used for eliminating the invalid path. Then, the comparison between the proposed method and existing system is given in the experimental result. Experimental outcome shows that the proposed approach improved the time consumption up to 2-3 sec compared to the existing methods: Dijkstra's algorithm and Floyd warshall algorithm.

Keywords: Dijkstra's algorithm, Enhanced Floyd warshall algorithm, Protein to protein interaction, Search tool for the retrieval of interacting genes/proteins.

1. Introduction

In recent decades, lung cancer is one of the leading causes of cancer mortality [1]. Generally, primary lung cancer is characterized into two types such as, Small Cell Lung Cancer (SCLC) and Non-Small Cell Lung Cancer (NSCLC) [2]. Whereas, the most common types of NSCLC are squamous cell carcinoma, large cell carcinoma and adeno-carcinoma. In the clinic, approximately 20% of lung cancer patients are diagnosed with SCLC and 80% are diagnosed with NSCLC [3, 4]. Hence, the biological behavior of SCLC and NSCLC are significantly different, these two distinct types of lung cancer grow in different ways and also treated differently. SCLC is highly malignant that is characterized by rapid proliferation and metastasis [5]. Some NSCLC tumours grow and spread more slowly, making them less prone to developing early metastases and more amenable to surgical treatment during the early stages of the disease. Due to advancing experimental techniques, it was possible to research PPI [6, 7].

Currently, system biology is the most effective approach for understanding the molecular mechanisms of lung cancer [8]. Use of bio-informatics, enables the identification of unknown protein functions as well as new functions for familiar proteins based on the PPI analysis. Identifying the key nodes of proteins would be helpful in revealing the molecular mechanisms underlying lung cancer [9, 10]. In this experimental research, an enhanced Floyd warshall algorithm is

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Bitcoin Service Transaction

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Abstract:- Bitcoin is the first decentralized digital encrypted currency and worldwide payment system. The system works without a central bank or single administrator. It has a peer-to-peer network. The transactions take place between users directly, and no intermediary necessary. The verification of transactions takes place with the help of network nodes by means of cryptography. Blockchain is the public distributed ledger used to read transactions. The smart coins with associated non uniformed funds for smart transactions are created. These transactions are with secured online OTP gateways with user friendly selection with volume of transactions. Fully service oriented architecture has to be online with asynchronous transactions facility and automated with selective transactions with email security gateway (OTP). This way transactions will carry on with fully non distributive model with a new framework (in this work we created a new framework called CST). So transactions with funds framed from coin's funds is reduced and visually appears to the user.

Keywords:- Cryptocurrency, blockchain, gateway, OTP.

I. INTRODUCTION

Bitcoin is a digital currency system proposed by Satoshi Nakamoto and then gained popularity due to its invisibility and decentralized design characteristics. One core technique of Bitcoin is called Blockchain, which is a peer-to-peer ledger system keeping track of all bitcoin transactions and the order of the transactions. The set of bitcoin transactions are recorded in blocks. Owners of bitcoins can generate new transactions by broadcasting blocks of the transactions to the Bitcoin network. Then, a process called mining confirms the transactions and includes the transactions to the Blockchain. Essentially, mining is a randomized distributed agreement of component that confirms pending transactions by including them in the Blockchain.

To process electronic payments, the financial institutions serve as trusted third parties, where the online commerce relies on it. Even though the system works fine for most of the transactions, trust based model is its major weakness. It is not possible to perform completely non-reversible transactions, since financial institutions cannot give up on mediating disputes. The transaction costs are raised due to the raised median cost and also limiting the minimum practical transaction size and lowering the possibility for small casual transactions, and there is a greater cost in the loss of ability to make non-reversible payments for non-reversible services. As the possibility of reversal is needed, the need for trust becomes essential. Vendors must be careful about their customers, not giving out more information than they would otherwise need. A certain percentage of fraud is accepted as unescapably. There is no existing mechanism to make payments without the trusted party, expect for the transactions with physical currencies. Cryptographic electronic payments are the major alternative for trusted third party system. The main objective of work is, in the existing scenario bitcoins mechanism was selective and equally distributed and the transactions were also equally distributed. But by using randomly distributed artificial intelligence mechanism, the transactions are user independent for the chosen coin frequency, as the procedure is offline hackers cannot easily intrude into the transactions, or obtain the amount details. This is unstable and unstructured flow. Transactions are limited in the existing scenario, which is enhanced.

II. RELATED WORK

A. Social media networks Fraud

Everybody is tending to use the e-wallet in the current situation of currency demonetization. Among the e-wallets, simpler and useful for making money is the Bitcoin wallet. A trusted confirmation is required for bitcoin transactions. Anju et al [1] proposed a framework; bitcoin trading including the social media which is new method was introduced. A trusted confirmation can be got from friends in a friend circle of a social media. But still by using the information of real users some fraud identities can create fake news about bitcoin trading. The system blocks the fake posts and reports about fake identities in such situations.

B. Use of digital signatures to prevent double spending

Online payments would be allowed to be sent directly from one party to another without going through a financial institution by a purely peer-to-peer version of electronic cash. The main part of the solution can be digital signatures, but in order to prevent double spending trusted third party is still required where its benefits are lost. Satoshi Nakamoto [2] proposed a solution using a peer-to-peer network for the double-spending problem. When forming a record that cannot be changed without redoing the proof-of-work, the transactions are time stamped by network by hashing them into an ongoing chain of hash-based proof-of-work. The proof of the sequence of events witnessed and the proof that it came from the largest pool of CPU power is the longest chain. They'll generate the longest chain and outpace attackers as long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network. A minimal structure is required by the network. On a best effort basis messages are broadcasted, and nodes can leave and rejoin the network, accepting the longest proof-of-work chain as proof of what happened while they were gone.

C. Bloom Filter Implementation

Kota et al [3] have proposed a privacy-preserving Bloom filter design for Bitcoins' SPV (Simplified Payment Verification) client based on Y-Deniability. Although it has been said that introducing Bloom filter improves the privacy

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Secure Data Transmission in MANET using Hybrid-RSA Algorithm

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Abstract— **Network is a group of computers or servers connected which communicates over a wired and wireless network to exchange the information in a secure manner. In wired networks, there are firewalls and a secured gateway which prevents the malicious hackers from corrupting the data, but in the case of a wireless network like MANET (Mobile Ad-hoc Network) providing security is one of the biggest challenges. Security is an important factor in networks required to lessen the risk of unauthorized information disclosure, modification, and destruction. It is at the forefront of every conversation in all the sectors. Many network security threats like viruses, worms, hacker attacks, identity theft, and denial of service attacks etc. spread over the Internet. It is important to prevent the data from being infected by an intruder. One of the widely used techniques is encrypting the data by exchanging a common key which is used to decrypt it. By increasing the complexity of the key, security can be increased which in turn increases the time to encrypt and decrypt the data. To transmit the data efficiently, both speed and security play a vital role. In this paper, HRSA (Hybrid-RSA) algorithm has been proposed which increases the security of data during the transmission without having to compromise the speed of encryption and decryption and achieves strong privacy by increasing the complexity of the key.**

Keywords— MANET, Cryptography, Security, Encryption, Decryption, Key Complexity, HRSA (Hybrid-RSA)

I. INTRODUCTION

Mobile Ad-Hoc Network (MANET) is a collection of multiple mobile nodes connected wirelessly which are free to move randomly in any direction without having centralized and fixed infrastructure. MANET consists of open peer-to-peer, self-configuring, self-healing multi-hop networks where each node act as both host and a router. Since the nodes are mobile in nature, network topology changes rapidly. MANETs are more prone to attacks when compared to wired network but they are more advantageous which makes it as the finest medium in networks. The main advantages of MANETs are flexibility, low cost, and robustness. MANETs are widely used in military application. [8]

The ad hoc routing and data packet forwarding are the two main operations performed by the network-layer in MANETs. The routing messages are exchanged between the nodes and the routing table are maintained by MANET protocol. Based on the states in the routing table, the source forwards the data packets to the destination through intermediate nodes along an established path. The intermediate nodes are used to communicate with the destination, when it is not in the range of source node. These intermediate nodes can act as both host and a router. This dual role of nodes may cause packet drop and the intermediate node might transfer the data to the wrong destination. The routing and packet forwarding operations are more prone to malicious attacks. [9]

The architecture of MANET which evolves with time has the potential to resolve issues such as disconnection from the network. Since the data can take multiple paths, single point failure in MANETs are reduced. The MANETs have no fixed infrastructure which makes it more suitable for the applications such as environmental monitoring. On the contrary, MANETs have some drawbacks. One of biggest drawback is reduced data rates. The wave characteristics of wireless communication causes inefficient transmission of data when compared to wired networks. Routing packets between any pair of nodes is a challenging task due to its constant change in network topology. [10]

MANETs are used to provide security services such as confidentiality, authentication, integrity, availability, and anonymity. Both authorized network users and malicious hackers can access the wireless channel. As a result, providing protection is a challenge from security design perspective. Proactive and Reactive are the two approaches used to secure MANETs. In proactive approach, various cryptographic techniques are used to prevent security threats. On the other hand, the reactive approach detects threats and react accordingly. These two approaches have its own advantages and are suitable for addressing different issues. [11]

Security has become a primary concern when setting up a network due to the high rate threat of malicious hackers who try to harm as many networks as possible. It has been one of the active research topics in wireless networks. In MANET, many types of security attacks can occur which disturb the operation of data transmission. To intercept the unauthorized users from corrupting and stealing the data, several encryptions and decryption techniques have evolved over time. In cryptography, it is an important process that is

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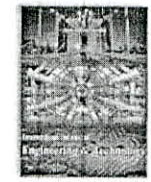

A Comparative Study of Indian Food Image Classification Using K-Nearest-Neighbour and Support-Vector-Machines

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Abstract

Food being the vital part of everyone's lives, food detection and recognition becomes an interesting and challenging problem in computer vision and image processing. In this paper we mainly propose an automatic food detection system that detects and recognises varieties of Indian food. This paper uses a combined colour and shape features. The K-Nearest-Neighbour (KNN) and Support-Vector - Machine (SVM) classification models are used to classify the features. A comparative study on the performance of both the classification models is performed. The experimental result shows the higher efficiency of SVM classifier over KNN classifier.

Keywords: Food Classification, KNN (k-nearest-neighbour), SVM (Support Vector Machine), Template Matching

1. Introduction

Dietary food nutrients are the essential source for sustain life. Food being the most important source of energy it is consumed in a variety of style with diverse presentation. Earlier food was consumed mainly as whole vegetables, fruits, grain, dairy product and honey. Preparation of any food with the best nutrient values is of major concern both in domestic and industrial setting. There is a plethora of food delicacies available globally, due to which food industry is a major key player in economic growth of a country. Extensive and diverse platters offer a nutritional pallet so elaborate and attractive that the consumer inculcates both good and bad food habits. People face difficulty in choosing the best food with high nutrient value to stay healthy, thus we are proposing an openCV based food identification system to detect, localize and recognise Indian food items.

The proposed food recognition system is developed in such a way that it can classify the Indian food items based on two different classification models i.e. SVM and KNN. Food images are captured using high resolution portable cameras or cameras attached to a wearable glass, cap or hat. Eventually this system can also aide the visually impaired recognise the food on the platter with its features like colour, texture and shape.

The paper mainly classifies Indian food items. The main reason for opting Indian food is the diversified eating habits present in India. As an example the simple staple food: rice is prepared with different styles patterns. It is often difficult and challenging to classify rice as rice considering few features. Hence more complex algorithms based on colour texture and shape feature training and learning is required.

The other intricacies are, the colour of food items may resemble another dish itself example colour of idly resembling rice. In this paper we use the combine feature present in food images and classify with KNN and SVM classifiers. Fig 1 shows the sample image used in the proposed system as in put images.

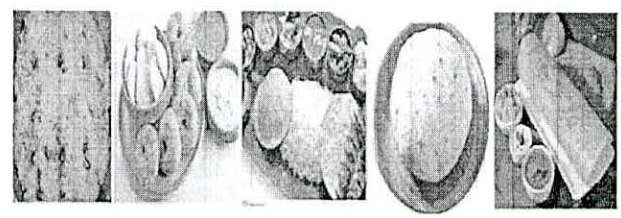

Fig. 1: Indian Food Images

The paper is organised as follows: in section 2, a brief coverage of related literature is given. In section 3, we discuss few challenges faced during the detection and recognition process. In section 4, we have discussed the how processing is done using Indian food images. In section 5 the Pre-processing in Indian Food Images are discussed. In section 6, gives the detailed insight about the proposed system. In section 7, the observational results are discussed. In section 8, we conclude the paper.

2. Literature Survey

There are several on-going research works based on food detection and recognition. Several android applications based on dietary nutrients management also exist. Brief appraisals on the available literatures are illustrated in this section.

Most of the literatures used methods that include naïve Bayes classifier, support vector machines, K-nearest neighbors, Gaussian mixture model, decision tree and radial basis function (RBF) classifiers [3,4].These classifiers are used in algorithms that involve food recognition.

An alternative technique proposed in [6] is visual life logging that consists of using a wearable camera that automatically captures pictures from the user point of view (egocentric point of view) with the aim to analyse different patterns of his/her daily life and extract highly relevant information like nutritional habits [6].

Marios M. Anthimopoulos, Lauro Gianola, Luca Scarnato, Peter Diem, and Stavroula G. Mougiakakou, in [15], proposed the Computer vision-based food recognition could be used to estimate

AN ALGORITHM FOR ENHANCING THE SECURITY ON CLOUD DATA SHARING SYSTEM

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ABSTRACT

Cloud data Storage is a new innovative service model of data storage where data from the organizations are remotely maintaining, managing, and backup. This system will allow the users of different prospective and requirements to store their files online and access them from any location via the Internet The most critical aspect in cloud data storage environment will rise the different security issues based on the group data sharing which relates to both cloud centric and conventional insider treats. The focus of cloud data storage architecture is to achieve the goal of providing the security and privacy for the user data that is shared among the group of defined user. However there are many ways that the malicious users are attempting the get an access to the shared data and also the personal information stored on cloud servers. Thus there is a need of new techniques to solve the serious problems in the area of information security for group sharing concept. To highlight this aspect, in this paper we are proposing and developing an prototype system that will encrypt the user file to be shared with the group through the use of trusted cryptographic server to ensure the data sharing, confidentiality and access control.

Keywords: .NET framework, Cloud computing, C# language, Single key encryption, Information security.

INTRODUCTION

The new evolution in recent days of cloud computing is the cloud computing storage system which was not designed from scratch but it is an evolution of the many of the computer architectures such as web system, networking, application infrastructure, database management system. The Cloud computing system constitutes infrastructures, platforms and applications on demand. Now cloud storage system is an integrated cross platform system for mechanism of storage and retrieval of data. It is a data model which stores huge digital data in logical pools of physical storages. The physical storages will span over multiple servers (often located in different places of the world) and the physical data storage environment is owned by the hosting company.

Cloud computing is an growing architecture continues to provide an large savings for investment in IT Industries, the popularity for cloud is rising in many mission-critical areas which are very sensitive such as medical areas and energy areas. The Cloud computing always provides cost effective scalable services for deployment and infrastructure for these sectors with large computing power and increase in productivity. But, the availability of data, confidentiality and integrity of data are of great importance in these sectors. The chapter provides a brief introduction of cloud security. This

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A SURVEY ON NETWORK TRAFFIC CLASSIFICATION TECHNIQUES

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Abstract*— Network traffic classification process deals with various parameters such as port and protocol based that are used to automatically identify the traffic classes. This type of classification is used to provide security in network level as well as system level in a complex classification environment where data is in encrypted form. It also addresses the issues related to Encryption of data, Security in Modern Network Architecture and its Management, Controlling QoS for products, Identifying Intruders in the Network and Privacy protection of users among the network. This paper lists the problems faced by Traffic Classification while handling the network traffic. Most of the traffic classification methods are not able to satisfy the special requirements of individual datasets. There are massive amount of network traffic datasets and limited numbers of resources are available to produce classification analysis. The survey reveals that traffic classification need to be updated regularly to maintain the accuracy and should be able to adapt the dynamic behaviour of network flow.

Keywords*— Network Traffic, Network Traffic Class, Network Features, Statistical features, Classification

1. Introduction

Internet has become an unavoidable information hub in our daily life and in the work place. Internet today has created a great evolution in network technology and interconnection of networks. Newly emerging network architectures, network protocols and the applications are becoming complex to understand and research community spurred a lot to invent a noble research work in complex networks. Network traffic classification can be adopted in the important applications such as network operators, Twitter, Facebook, Bit Torrent, WhatsApp, Skype, Youtube (i.e., live video streaming) or Uploading and Downloading Videos. Network traffic classification help for planning and designing new infrastructures. Through this accurate classification, Internet Service Providers (ISPs) can be able to provide appropriate billing based on user's actual usage and recommend for Quality of Service (QoS) based on the application needs. Research Community has invented various methodologies of traffic classification from real time network traffic. Internet Assigned Number Authority (IANA) assigns port numbers for TCP or UDP in Port based attributes and also assigns source port and the destination port for every packet in the IP traffic. All the applications in the network traffic do not have registered port numbers, hence it's very difficult to identify the unknown application using port based methods. Some applications dealing with online games and peer to peer networks are using dynamic port numbers so that it's difficult to classify such applications using port based techniques. In Payload based approach, attributes are based on application layer level traffic signatures. Statistical based attributes related to traffic such as duration between the flow, packet ideal time, Length of the packets and it's inter arrival time also play an important role in traffic classification. Payload based uses the technique named deep packet inspection that match both the payload of the packet and known traffic signature but this method will not produce good classification accuracy in encrypted packets.

Assigned Port	Application
20	FTP Data
21	FTP Control
22	SSH
23	Telnet
25	SMTP
53	DNS
80	HTTP
110	POP3
123	NTP
161	SNMP
3724	WoW

Basically there are two types of flows in the network traffic: unidirectional and bidirectional. The unidirectional flow shares information such as source and destination ports, IP and Transport Protocol. In bidirectional the analysis of flow between source and destination starts from the establishment of connection to end of the network connection. Flow Directional Neutrality is calculated from the forward and backward direction of individual statistical features. IP traffic indicated by the Traffic classes can be caused by a single application or multiple applications. Features are in the form of numerical attributes and usually more number of packets belong to same flow

P2P Protocol	String	Trans. Prot.
eDonkey 2000	0xe319010000	TCP/UDP
	0xe53f010000	
Fasttrack	"Get /.hash"	TCP
	0x2700000002980	UDP
BitTorrent	"0x13Bit"	TCP
Gnutella	"GNUT" "GIV"	TCP
	"GND"	UDP
Ares	"GET hash:"	TCP
	"Get sha1:"	

Network Feature selection play a major role in providing accurate results. It is necessary to identify unique attributes in the network traffic flow and in the flow observation taken

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Identification of lung cancer related genes using enhanced Floyd warshall algorithm in a protein to protein interaction network

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Abstract: Lung cancer is defined as an uncontrolled cell growing in the tissues of lung, which is also said to be lung tumor. The lung cancer is curable in the starting stage, but identifying the lung cancer in starting stage is very difficult. In recent decades, researchers showed great interest on gene level lung cancer identification using shortest path between the lung cancer related genes. Many research has been done to identify the shortest path between the genes, but the conventional methods consumes more time for processing the data. In this research, Protein to Protein Interaction (PPI) structure is constructed from the weighted protein present in the Search Tool for the Retrieval of Interacting Genes/Proteins (STRING) database. For identifying the shortest path between the genes in PPI, an effective algorithm: enhanced Floyd warshall algorithm is proposed. Floyd warshall is efficient in finding the shortest path between the genes and also solves all pairs of shortest path problem. A major drawback of Floyd warshall algorithm is, it works slower than other conventional algorithms designed to perform the same task. To improve the performance of traditional Floyd warshall algorithm, an iterative matrix is used for eliminating the invalid path. Then, the comparison between the proposed method and existing system is given in the experimental result. Experimental outcome shows that the proposed approach improved the time consumption up to 2-3 sec compared to the existing methods: Dijkstra's algorithm and Floyd warshall algorithm.

Keywords: Dijkstra's algorithm, Enhanced Floyd warshall algorithm, Protein to protein interaction, Search tool for the retrieval of interacting genes/proteins.

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Currently, system biology is the most effective approach for understanding the molecular mechanisms of lung cancer [8]. Use of bio-informatics, enables the identification of unknown protein functions as well as new functions for familiar proteins based on the PPI analysis. Identifying the key nodes of proteins would be helpful in revealing the molecular mechanisms underlying lung cancer [9], [10]. In this experimental research, an enhanced Floyd warshall algorithm is developed for predicting the patient susceptibility of lung cancer and to identify the diagnostic molecular markers for detecting early

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Providing Security to Cloud Data using key Exposure

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ABSTRACT: Cloud computing is the technology of using a network of remote servers on the internet . It further avoids the use of a local -server. Customer can use applications without installations and access their personal files at any computer with internet access. Day to day usage of cloud has attracted attackers to break data security in the cloud data storage system. Security of cloud data is ensured by means of cryptographic keys which when exposed facilitates the attackers access the ciphertext. This paper reveals an overview and study of providing security to cloud data using key exposure.

KEYWORDS: Cloud, Data, Key exposure, Data confidentiality, Dispersed storage

I.INTRODUCTION

Cloud Computing is the fundamental change happening in the field of Information Technology .It is a representation of a movement towards the intensive large scale specialization. On the other hand it brings about not only convenience and efficiency problems but also great challenges in the field of data security and privacy protection. Currently security has been regarded as one of the greatest problems in the development of Cloud Computing .This paper describes the great requirements in Cloud Computing security key technology standard and regulation etc. and provides a Cloud Computing security framework using key exposure .This paper argues that the changes in the above aspects will result in a technical revolution in the field of information security.

Cloud system can be used to enable data sharing capabilities this can proven abundant of benefits to the user. There is currently a push for IT organization to increase their data sharing efforts. In enterprise settings, there is the rise in demand for data outsourcing, which assists in the strategic management of corporate data. It is also used as a core technology behind many online services for personal applications. With current technology user can access almost all of their files or emails by mobile phone or computer from any corner of the world.

In the cloud storage efficient public key encryption scheme which support flexible delegation in the sense that any subset of the cipher texts is decryptable by a constant-size decryption key.

Cloud computing has a lot of security issues that are gaining great attention nowadays, including the data protection, network security, virtualization security, application integrity, and identity management. Data protection is one of the most important security issues, because organizations won't transfer its data to remote machines if there is no guaranteed data protection from the cloud service providers. Many techniques are suggested for data protection in

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Research paper

Effect of different attacks on image watermarking using dual tree complex wavelet transform (DTCWT) and principle component analysis (PCA)

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Abstract

Perceptibility and robustness are two incongruous requirements demanded by digital image watermarking for digital right management and other applications. A realistic way to concurrently satisfy the two contradictory requirements is to use robust watermark algorithm. The developed algorithm uses DTCWT and PCA techniques to embed watermark signal in host signal. To prove the algorithm robustness without much affecting perceptibility several attacks like noises, cropping, blurring, rotation are applied and tested by varying attack parameters. Parameters like Peak signal noise ratio and Correlation Coefficient are calculated for each attack. Attack percentage is varied and performance parameters are calculated to prove the robustness of the developed algorithm.

Keywords: *Attack; DTCWT; Perceptibility; Robustness; PCA; Cropping.*

1. Introduction

Robustness is a measure of immunity of watermark, against attempts to image modification and manipulation. Imperceptibility is the most significant requirement in watermarking system, and it refers to the perceptual similarity between the original image before watermarking process and the watermarked image. The challenge is that imperceptibility could be achieved, but the robustness and the embedding capacity will be reduced, and vice versa, imperceptibility may be sacrificed by increasing the robustness and the embedding capacity.

Attacks are the intentional distortion introduced at transmission in order to check the robustness. These attacks types can be divided into three main categories [1].

Unauthorized removal, unauthorized embedding, and unauthorized detection. According to the specific usage of watermarking, the specific feature should be available in the watermark to resist the attacks [2]. Therefore, for unauthorized removal, the watermark should be robust and not to be removed, and for unauthorized embedding (also known as forgery), the watermark should be fragile or semi fragile to detect any modification.

In this paper, section 1 describes watermark embedding and extraction algorithm, section 2 describes embedding and extraction algorithm. Section 3 describes the application of different attacks like Gaussian Noise, Salt and Pepper Noise, Speckle noise, Poisson noise, rotation attack, compression attack, resizing and blurring, contrast attack on developed watermarking algorithm.Section 4 describes conclusion.

2. Embedding and extraction of watermarking

Image watermarking is a growing technology to protect the copy right for the digital images [3]. The Fig. 1 shows the block diagram to embed the data called watermark data or image. This embedded information [9] is insensible to human visual system. This embedded image is transmitted through the channel and reaches the receiver. During the journey the image may be corrupted by many attacks i.e. different noises, compression cropping, rotation, contrast etc.

The extraction process will extract watermark, it is expected to be similar to the original watermark image. Figure.2 shows extraction process.

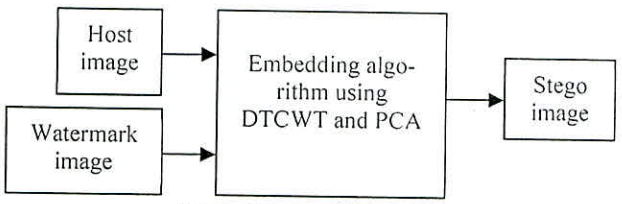

Fig. 1: Process of Embedding.

Embedding algorithm is developed in dual tree complex wavelet transform domain which is an advanced version of DWT. principle component analysis and Least Significant Bits (LSB) technique are used in the embedding process to generate the watermarked or stego image. Inverse dual tree complex wavelet transform domain is used and LSB algorithm. The extracted watermark image may not be same as original watermark and quality of host image may also be degraded. To study the robustness of the algo-

Review on Performance Analysis of UWB Bandpass Microstrip Filters

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Abstract

In the last few years, several microwave filter design with band-pass response have been proposed for ultra-wideband (UWB) application. Among various microwave filter design, microstrip filter are most widely used by researcher due to the features like light weight, easy to fabricate and low cost. Conventional microstrip filter can be in any shape like circular, rectangular or elliptical but some modification or additional variation in their basic design can be made for different purposes. This paper reviews the performance analysis of Microstrip UWB bandpass filters designed using MMR, Multi Short Circuited Stubs, PCML, Ring Resonators, SIR. In this paper an effort is made to review performance in terms of insertion loss, return losses, bandwidth and group delay.

Keywords: Multiple Mode Resonators (MMR), parallel coupled microstrip line (PCML), stepped impedence resonator (SIR), Federal Communication Commission (FCC)

I. INTRODUCTION

In early 2002, the U.S. Federal Communication Commission (FCC) approved the unlicensed use of UWB systems for a variety of applications. The FCC defined that bandwidth for indoor and hand-held UWB systems must be strictly in between 3.1 to 10.6 GHz with maximum Equivalent Isotropic Radiated Power (EIRP) equal to -41 dBm as shown in Figure 1.To fullfill the UWB bandwidth constraints sited by FCC, transmitted signal must be shaped to fit the FCC UWB PSD mask. Therefore, there are needs to design the UWB bandpass filter covering the whole UWB passband with the fractional band-width of 109.5% at center frequency of 6.85 GHz, since that, Band Pass Filter (BPF) become one of main blocks that make up UWB transmitter system. Often, in such application, passive filters are used rather than active counterpart. Passive filters designed around reactive elements only, using lumped-components such as inductors and capacitors or distributed elements such as cascaded resonators, can operate up to the microwave region. At upper microwave frequencies, the parasitic in the inductors and capacitors often proved too much constraint to use them in the wireless system. Hence, many of the filters used in microwave communication systems employed the distributed elements types. Prime advantages of Microstrip are low cost and compact sizes.

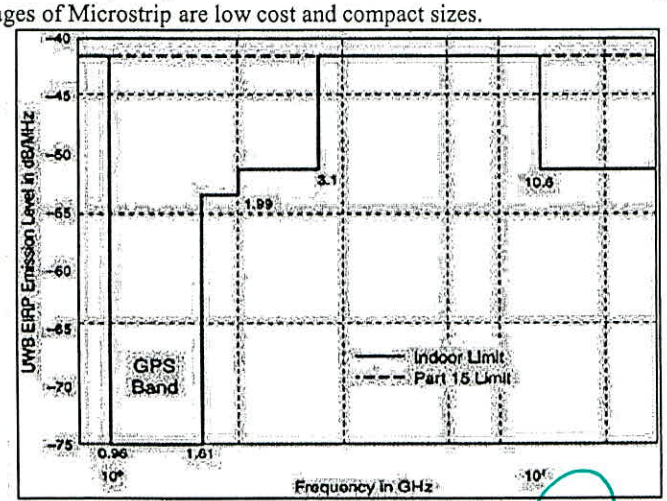

Fig. 1: Spectrum mask in indoor FCC [1]

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Image Encryption Method based on Hybrid Fractal-Chaos Algorithm

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Abstract: In recent years, there has been an increasing interest in the field of cryptography. Cryptography has applied in diverse applications and the researchers mainly concentrates on Image Encryption (IE) field. This paper proposes a hybrid encryption technique in order to provide high secure transmission. Here, an IE and decryption process is proposed by employing hybrid fractal-chaos technique. This proposed methodology consists of four modules like key generation, fractal encryption, chaos encryption and decryption. Initially, a key that is generated is utilized to encrypt and decrypt the image or data. Subsequently, fractal-IE is carried out by applying L-shaped tromino. Likewise, chaos encryption is carried by employing Discrete Cosine Transform (DCT), to have the final encrypted image. Whereas, the decryption process is carried out using chaos decryption and fractal decryption algorithms. Finally, the experimental outcome confirms that the projected technique delivers high security level network with low computational complexity.

Keywords: Discrete cosine transform, Image encryption, Key generation, L-shaped tromino.

1. Introduction

In the current scenario, information security is essential in various areas like internet communication, multimedia systems, medical imaging, tele-medicine, military communication, and so on, leading to an increasing interest in the field of cryptography [1, 2]. Cryptography is the progression of hiding information or try to keep the information safe and secure [3]. In cryptography, the image is one of the important tool for carrying information. By applying encryption process, the message or information is encoded by the authorized persons. IE schemes have been increasingly studied to meet the demand for real-time secure image transmission over private or public networks [4, 5]. Conventional-IE algorithms are not suitable for IE, because of the special storage characteristics of an image and weakness of low-level efficiency when the image is large [6]. In order to overcome these difficulties, two effective algorithms are combined for encryption and decryption process such as, fractal and chaos-based encryption algorithms [7].

Initially, the fractal based encryption algorithm encrypts the image by applying fractal key with the combination of L-shaped tromino method [8]. On the other hand, Chaos-based algorithm has found wide popularity among researchers, because of the inherent features of chaos systems, such as sensitivity to initial value and randomness, the chaos system-based IE method appears to be suitable for high-security encryption [9, 10]. This type of encryption typically requires two stages like permutation and diffusion. In the permutation step, image pixels are reallocated with the help of a chaotic map without changing the pixel's gray levels. Then, in the diffusion step, the value of each pixel is changed by applying a chaos sequence. Proposed chaos-based IE algorithm performs encryption using DCT algorithm. After encryption, the decryption procedure is performed by employing chaos and fractal based decryption methods. Finally, the experimental outcome shows that the projected hybrid technique delivers a high secure transmission with low computational complexity.

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Detecting and Monitoring of Climate Conditions by Using "Arduino UNO Microcontroller" with MATLAB

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ABSTRACT: As the speedy of Internet of Things (IoT) is rising and is habituate for remote checking of the encompassing limits and different stuffs with the utilization of sensors that familiarize for 'remote detecting of ongoing information' and move them into the desirable frame and help to send the detected information over the system cloud by means of 'web Connection'. This work depicts a Sensing and Monitoring (SM) System to detect, screen, and trade the quick natural information between the IoT cloud administrations. The IoT 'Thingspeak' web benefit is a sort of liberal API benefit that is used as a part of this venture which go about as a host for the assortment of sensors to imagine the detected information at cloud level. This work likewise emphasizes the part of light sensor, DHT22 sensor, MQ-135 sensor, BMP-180 sensor, Rain sensor that are interfaced and working under the field of ongoing condition.

KEYWORDS: IoT, Thingspeak, SM, light sensor, DHT22 sensor, MQ-135 sensor, BMP-180 sensor, Rain sensor

I. INTRODUCTION

Today, those expanded request from claiming administration through the web required the information gathering Also trade done effective way. In place should obtain the productive IoT achievement to an application; the best possible sensing Also screening framework are vital. For the most part a sensing unit will be created for different sensors like temperature, humidity, gas and so on. At the same time a following unit made for current and voltage parameters. Those IoT need made an upset throughout the globe Furthermore fascinatingly it needs turn into essential analytics and only our exists [01]. Whether we expect, an day will turn up At the Facebook. Furthermore twitter might need their uniqueness like Facebook about things and twitter about things.

The day need landed that those legislature parts would likewise embrace the IoT due to its gigantic importance done every what's more each territory [02, 03]. This engineering headway could make more occupation scopes furthermore investigate thoughts. Those information focus ability will a chance to be 65% private. The headway done information collection, analysis, What's more association might a chance to be attained Eventually Tom's perusing checking also sensing. Besides performs the data taking care of and Moreover majority of the data transportation [05, 06]. That blend of identifying Also checking part will be superior instrument flying for propelled data gathering [07]. The correspondence between the machines should machine with web need given gadget coded those gigantic number for gadget association and robotics majority of the data exchange [08]. Those unstoppable augment in the electronic gadgets obliges the new advanced connectivity and likewise those oversaw economy rules [09]

The possibility tending to What's more ID number for units number needs correct scalable, adaptable What's more dependable framework to worth of effort "around the commercial enterprises What's more shoppers. The blending about sensing Furthermore observing aides done information gathering starting with the machines Furthermore humans; check them effectively. Those information privacy, proprietorship Furthermore administration procurement are tumbles under advanced mobile economy. The sensing what's more screening for information empowers those clients should make exceptional ongoing choice [10, 11]. The Mammon extension about "Internet of

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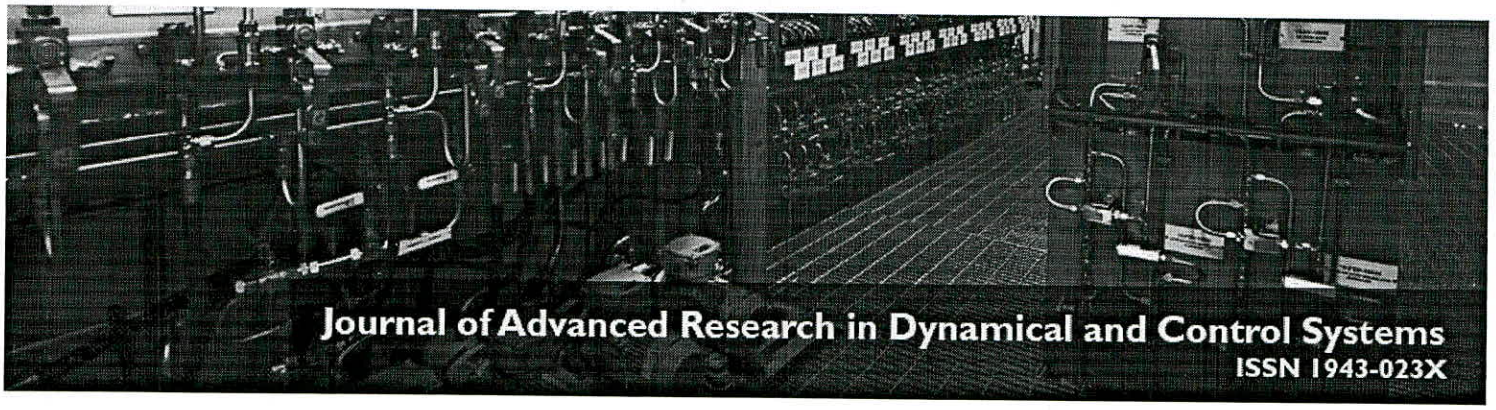

An Efficient Fault Tolerant and Cost Optimized Power Model for Distributed Power Generation System

G. Raghavendra and Dr. Manjunath Ramachandra

Abstract:

The research area of power system is always got an attention because of growing power demand. The existing conventional power systems are failing to fulfill this dynamic power demand. Thus, the idea of renewable resource based power systems are like solar, wind etc has arrived. Many power industries were focusing on the adopting the renewable power sources to fulfill the power demand to a great extent. A distributive power generation (DPG) is concept which relies on the renewable resources and is mainly used in industrial and commercial aspects. However DPG lags with performance issue under dynamic load scenario and also higher cost in power consumption. This paper introduces a stochastic model based on prediction theory and a cost optimization model based on Markov decision principle. In this, the power output of entire year is used to calculate the rate of load demand and corresponding power supply through stochastic model, while the cost optimization model is introduced to minimize the cost of electrical appliances power consumption in distributed power grid. The outcomes of the both the methods offer significant results with respect to delay constraints, energy storage capacity and financial cost of smart appliances.

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Situation Analysis of Load Shedding and its Effectiveness in the Area of Power System Security

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Abstract

With the hasty growth of the power system to impact increased consumer demand and with more inflexible economic and ecological boundaries, power systems become more composite and severely stressed. Subsequently, system extensive disturbances which lead to the disturbance of voltage and frequency stability which is a critical threat to the power system security. The frequency and voltage instability may lead to the blackout and severely damages the power system gadgets. This upturns the significance of instigating a protection scheme that conserves the system stability. The ultimate procedure prevents the occurrence of a system collapse incident is the functioning of a load shedding scheme. These paper emphases on the overview of the UFLS and UVLS scheme. This paper performs the situational analysis of the existing load shedding scheme. And reassessments some of the frequently adopted techniques along with the brief discussion of the existing scheme to extract the research gap in this area. The outcome of the review will assist the researcher to have a greater visualization of the contribution of the earlier studies.

Keywords: Under voltage load shedding, Under frequency load shedding, power system blackout

INTRODUCTION

In the area of power security, load shedding plays a vital role to captivate the dynamic power requirements of the customers. When all fundamental controls are vulnerable to preserve the power system security operation during a disturbance or contingency, load shedding will be used as the last procedure to make the loss of blackout minimum [1]. The core objective of an effective LS scheme is to curtail a lowermost number of loads and deliver a rapid, steady, and safe transferal of the system from an emergency situation to a normal stability state[2]. The Power system reaches to emergency state at the moment of an unexpected increase of system load, the unanticipated outage of the transmission line or generator or malfunction in any of the power system constituents. This disturbance may result in some problems alike line overloading, under frequency, voltage collapse, and angle insecurity. The disturbances in the power system differ in magnitude and will cause the instability of the power system. This needs, the stability condition of the system must be reviewed and forecast to avoid such incidences. The prominence of stabilizing electric power system equilibrium and consistency has encouraged the evolving of novel methods to capitalize the system stability. The main issues in load shedding are the location of load shedding, amount of shedding load, and time of load shedding. Consequently to avoid post contingency problems, detecting the location of the buses for load shedding must be determined based upon the load significance, curtailment cost and the distance of the curtailed load to the contingency location[3].

Basically, the load shedding scheme is categorized into Under frequency Load shedding (UFLS) and Under voltage load shedding (UVLS). As previously stated, when a power system distraction creates active power imbalance, consequential causes in a frequency deterioration and emergency action such as UFLS may be enforced. If system frequency decline further than the given threshold, for a short amount of time, power stations may trip off causing additional load imbalance which may lead to a power system collapse [4,5]. To prevent massive voltage collapse due to the occurrence of desperate inadequacy in reactive power reserves, power utilities designate Under voltage load shedding(UVLS) because it is an economical procedure to accomplish voltage stability.[6]

The load-shedding schemes proposed by many researchers can be categorized into three groups.

• **A fixed amount of load shed:** The number of loads to be shed is fixed earlier. This group uses time simulation analysis to determine the minimum amount of load shed using dynamic parameters. The shortcoming of such group is time-consuming and in addition incorporating optimization technique in time domain analysis.

• **Dynamic features:** In this group minimum load, to be shed is determined by using load dynamic parameters, tries to determine a minimum load for shedding by estimating dynamic load parameters. This procedure is, results are extremely vulnerable to dynamic load model parameters.

• **Optimal power-flow equation**: Lastly, in this group, minimum load shedding is fixed using optimal power-flow equations by employing the static model of the power system. The dynamics associated with voltage stability are often slow, and hence static approaches may represent a good approximation. The preliminary idea of this method is to establish a sensible solution to the power-flow equations. [7,8]

This paper, therefore, discusses various traits of the DG system with special emphasis on the research contribution in the same topic. The primary aim of this paper is to find the effectiveness of the available research contribution and elicit significant open issues and research gap at the end of the discussion. Section II of this paper discusses the significance of the distributed generation followed by a brief discussion of

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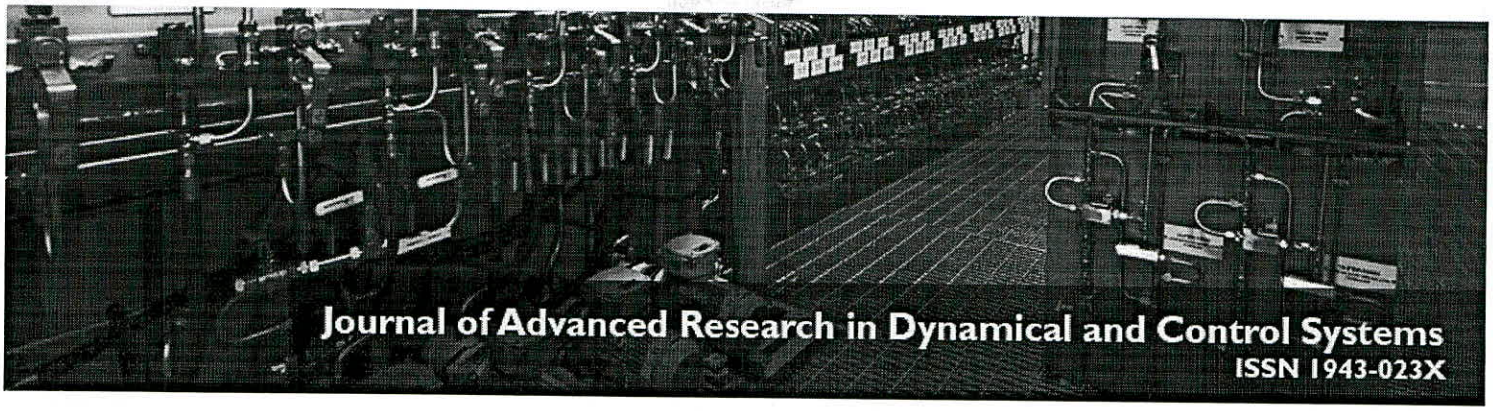

CASE STUDIES ON VVVFD PART I: ESTIMATION OF HARMONICS AND INTERHARMONICS AT VARIOUS OPERATING FREQUENCIES

G.S. Mahesh, H.M.Ravi Kumar, N.Lavanya ,G.Raghavendra

Abstract:

The primary objective of this paper is to present the impacts of power quality events like harmonics and interharmonics in an industrial distribution system, where regulating the temperature is the significant parameter of the space. The Variable Voltage Variable Frequency Drives are most popularly used equipment in controlling the valve pressure of the compressor, where the temperature is varied. When the drive is operated at different frequencies, the amount of power consumed and increase in the current harmonic distortion also varies, thus reduces the life of the expensive drive. Various case studies are performed on Variable Voltage Variable Frequency Drives using Harmonic Analyzer.

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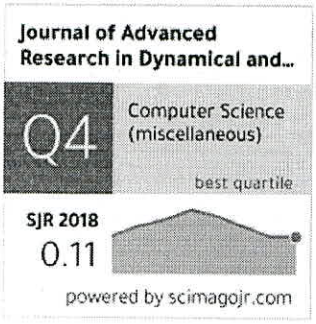

Test and Comparison of Vegetable Oil Impregnated Polypropylene Film AC Capacitors

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Abstract--- The aim of this research is to do the test and analyse the polypropylene-aluminium capacitors with oil impregnated with three different of dielectric oil. The soybean oil, Envirotemp FR3, and sunflower oil are the three different dielectric liquids which are used as impregnated fluid. The electrical properties of all the oils tested according to the liquid insulation standards. The capacitor considered for the test is a double layered single element and its value is 1.9 μF (1500ACV). The capacitor to be tested was impregnated at different temperature levels. From the test results, it is found the that dielectric oil type, the treated temperature level and space factor affected to the value of capacitance and dissipation factor of a capacitor.

Keywords--- Polypropylene, Dielectric Liquids, Dissipation Factor, Aluminium Foil, Space Factor.

I. Introduction

The polypropylene (PP) capacitor is manufactured by using pp films and aluminium foil wound together and it will form an element. This element is impregnated with oil. The pp film is used in oil impregnated capacitor is a stretched, electrical insulating film of pp, comprising zones having different degrees of roughness which lies inside side by side form fine channels between each other[1]. The pp film is very much suitable for the construction of oil impregnated capacitors. Paper film, pp film aluminium, pp film-zinc, metalized pp film-paper are the different combinations which are used in oil impregnated capacitors. This combination of capacitor elements impregnated using oil treatment chamber machines at different value of temperature. In recent trend, the development in decrease in size of the capacitor and the capacitors are built of pp film and aluminium or of metalized pp films are known as "all film capacitors".

II. Testing of Capacitors: Value of Capacitance

The bridge meter is used to measure the model capacitors parameters, particularly its capacitance value and capacitance tolerance. All manufactured capacitors will have plus or minus of some percentage of its original value. The table 1 and table 2 show the capacitance of test capacitor unit measured at 30^0 C, 1.1 times of rated voltage. The two capacitor elements are tested and their thickness of 9.0and 9.4 mm. The elements are rectangular in cross section as shown in Fig.1.

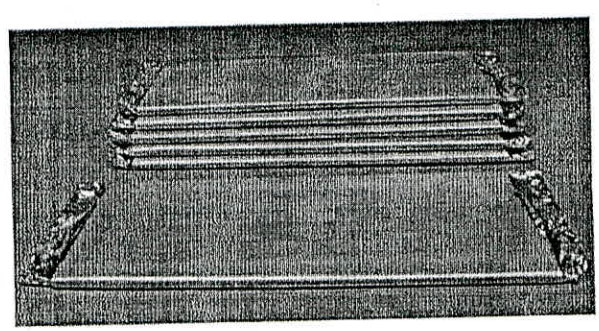

Figure 1: Polypropylene-Aluminium Capacitor Elements

All the capacitor value Graph of capacitors impregnated with different dielectric liquids for element with 9 mm thickness measured at temperature 30^0c are corrected for the temperature at 20^0C. From table 1 it is observed that the capacitance value of capacitor is increases with increase in temperature.

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HLA BASED PUBLIC AUDITING ARCHITECTURE TO FIND MALICIOUS NODE IN AD HOC NETWORK - A REVIEW

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ABSTRACT

There are two sources for packet loss i. e link error and malicious packet dropping. It is important to find whether packet losses are due to link errors only or is due to both link error and malicious packet drop. Here, I am mainly interested in the insider attack case where malicious nodes drops packets selectively to degrade the network performance. Packet dropping rate in the insider attack case is nearly equal to normal link error because of which existing algorithms cannot find the exact cause of the packet loss. I am going to find the correlation between lost packets and to ensure that these correlations are accurate i am going to use Homomorphism Linear Authenticator (HLA) based public auditing mechanism.

Keywords – Packet loss, Truthful detection, Homomorphism Linear Authenticator, Malicious node, Cryptography.

INTRODUCTION

In multi-hop wireless network, nodes help to transfer packets from source to destination. Malicious node when added into network, first it works in a cooperative way when finding the route from source to destination and when added into the route, node starts to drop the packets i.e it stops forwarding almost all the packets that are received from its upstream node. This type of dropping is called as persistent packet dropping. This type of dropping completely lowers the performance of the network. It is easy to find this type of dropping because here most of the packets are dropped.

There is another type in the packet dropping which is called as selective packet dropping. Here attacker node calculates the importance of various packets and will drop only those packets that are very important. This also lowers the performance of the network as in persistent attack case. Here the probability of getting detected is very low when compared to persistent packet dropping. In this paper I am mainly interested in finding this type of dropping. It is very difficult to detect the position of selective packet dropping and also to identify whether the packet loss is intentional or unintentional. Intentional packet dropping is because of attacker's node and unintentional packet dropping is because of harsh channel conditions. Usually link errors exist in the open environment so the attacker will make use of harsh channel condition to drop the small amount of packets. Here just by observing packet loss it is not possible to find the real culprit for the packet loss. The packet dropping rate should be greater than the link error for the accurate detection.

In this paper accurate algorithm is developed to detect the malicious packet drop. Here detection accuracy is very high which is achieved by finding the correlation of lost packets which is obtained by using the bitmap of packet reception maintained by each node. By finding correlation between lost packets we can find whether packet loss is only because of link error or is the effect of combination of both link error and malicious packet drop because both correlation gives different patterns for packet loss as shown in figure 1.In the figure the simulation of autocorrelation of two different packet loss process is shown. The packet loss in one process is caused by 10% of link error and in another process packet loss is caused by 10% of link error and 10% of malicious packet dropping.

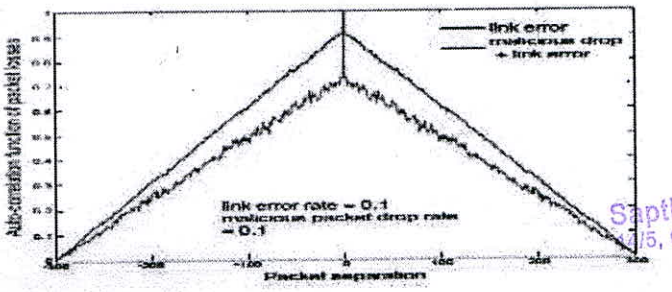

Fig.1 comparison of correlation of lost packets

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INVESTIGATION OF EFFECT OF INJECTION PRESSURE ON PERFORMANCE AND EMISSION CHARACTERISTICS OF COMPOSITE OIL BIODIESEL ON DI CI ENGINE

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ABSTRACT

The objective of the present investigation is to evaluate the Performance and Emission characteristics of Blends of methyl esters of composite oils(COme) of Karanja (PO) and Waste cooking oil(WCO)(B10, B20, B100) with Performance and Emission characteristics of methyl esters of Karanja oil(B100), methyl esters Waste cooking oil(B100) and diesel fuel at injection pressures of 160 bar, 180 bar and varying load conditions. The Transesterification process was carried out for composite oils of Karanja and Waste cooking oil (P50: W50), Karanja oil(PO), Waste cooking oil(WCO) and obtained biodiesel are blended with diesel in B10, B20, B100 for P50: W50 and B100 for individual oils of Karanja oil and Waste cooking oil. The Physico-chemical properties of biodiesel are presented and obtained as per ASTM standards. The effects of injection pressures, varying loads and blends of biodiesel with diesel on the Performance and Emission characteristics were evaluated using a Direct Injection (DI) Compression Ignition (CI) engine and tested at a constant engine speed of 1500 rpm. It was observed that there is an improvement in BTE (Brake Thermal Efficiency), while BSFC (Brake Specific Fuel Consumption) decreased when used with biodiesel blends in comparison with conventional diesel. The obtained results showed better Performance and Lower Emission of biodiesel from B20 of COme compared to biodiesel obtained from individual oils and diesel fuel and can be used without engine modification in a DI CI engine.

KEYWORDS: Transesterification, Composite Oil Biodiesel, Performance, Emission, Karanja Biodiesel,Waste Cooking Biodiesel & Diesel Engine

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Original Article

INTRODUCTION

Energy is a principal prerequisite for human existence. Consumption of fossil fuels has exceptionally expanded and the utilization of these energy assets has a major ecological effect. Diesel fuel, to a great extent, utilized as a part of transport, business, agriculture, domestic and modern divisions for the era of mechanical energy and power[1,2]. Out of all the substitute fuels accessible, bio-diesel procured from edible oils like Palm, rapeseed, Soybean, peanut, and sunflower oils suits well in biodiesel production, further even non-edible oils available like Cottonseed, Mahua, Jatropha and Karanja exhibit better properties in comparison to their edible oils counterparts. Availability and cost are the main factors for the choice of feedstock for biodiesel production and animal unsaturated fats guarantees to be more eco-accommodating at the point when contrasted with diesel fuel [3,4,5]. Notwithstanding, the cost of vegetable oils as of late has developed significantly, which will prompt higher

121 - 122.

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Evaluation of Mechanical Properties of Polymer Composites Reinforced with Jute Mat Fiber and Egg Shell Powder for Ligaments and Tendons Replacement

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Abstract — **In this present world scenario composite materials have a wide range of applications, but we are basically concerned over their medical applications. Fiber reinforced composite materials comprises of fiber embedded in matrix materials, which are discontinuous fiber or short fiber composites. These composites have a better bending ,buckling and good tensile properties. Of the commonly available annual crop fibers jute contains one of the highest proportions of stiff natural cellulose, approximately 75 wet %. Jute may be combined with phenolic, epoxy and polyester resins to form composite materials, and it has been laminated with glass fiber to form hybrid composites. Further to enhance then flexural strength, jute fiber is treated with urea. The composite fiber is incorporated with egg shell powder to increase the tensile strength and bending properties, because greater the filler contents higher are the properties.**

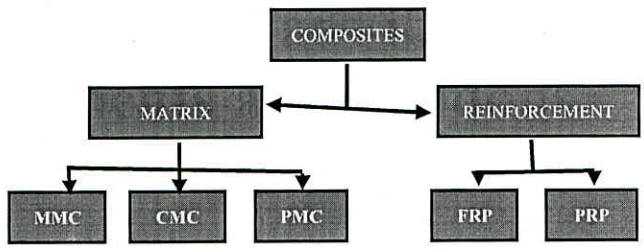
I. INTRODUCTION

Basically, when two or more than two chemically distinct materials are combined, produces synergistic effect, with a distinct separating interface of component. Due to this the component gets aggregate properties different from the component by which it is formed. The main components cannot compete with the composites in terms of properties. The component materials can be metal, ceramic or polymer etc. The use of natural or plant fiber reinforced composite is increasing with time. This is due to its advantages like low cost, ease of availability, light weight etc. The important and exclusive properties of natural composite are its renewability and biodegradability. These properties with low cost fulfil the economic interest of industries. These materials are eco-friendly and use of green materials in these composites also provides an alternative way to deal with agricultural residue. Apart from the industrial application composites have wide range of medical application and researches have been extensively carried out for their implementation. One among such application is replacement of ligaments and tendons with composite fibers whose failure is mostly common during accidents and injuries in day to day life. Composite fibers produced from naturally occurring jute fibers have extensive tensile strength and bending properties and are also safe to be embedded in human body.

1.1 DEFINITION OF COMPOSITES

A composite material is a material made from two or more constituent materials with significantly different physical or chemical properties that, when combined, produce a material with characteristics different from the individual components.

1.2 Classification of Composites



1.2.1 Basic Types of Composites

Based on Matrix

1. Metal Matrix Composites (MMC)
2. Ceramic Matrix Composites (CMC)
3. Polymer Matrix Composites (PMC)

Based on Reinforcement

1. Fiber reinforced polymer (FRP)
2. Particle reinforced polymer (PRP)

1.3 Natural Fiber Reinforced Composite

Natural fibers are used for reinforcing material. These have complicated structure, with crystalline cellulose micro fibril-reinforced amorphous lignin or/and hemi-cellulose matrix. Natural fibers are constitutes of cellulose, hemi-cellulose, lignin, waxes and some water-soluble compounds. The major component of it are cellulose (60%-80%), hemi-cellulose (5%-20%), lignin and moisture (20%). They are renewable, cheap, completely or partially recyclable, and biodegradable. Plants such as flax, cotton, hemp, jute, sisal, pineapple, ramie, bamboo, banana, etc., as well as wood, used from time immemorial as a source of lingo celluloses fibers are more and more often applied as the reinforcement of composites. Their availability, renewability, low density, and price as well as satisfactory mechanical properties make them an attractive ecological alternative to glass, carbon and man-made fibers used for the manufacturing of composites. The natural fiber containing

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Free Vibration Behaviour of Alkali Treated Long Kenaf Fibre Reinforced Epoxy Composites

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Abstract—**Two or more chemically different constituents combined macroscopically to yield a useful material are called composites. There are several naturally occurring composites such as Wood where cellulose fibers are bounded by lignin matrix, also bone and granite are typical examples of naturally occurring composites. Some of the manmade composites are concrete, plywood, glass, Kevlar etc. During recent times, due to increasing interest and research focus in eco-friendly materials, studies on natural plant fibers like Kenaf, Jute, Hemp, Coir are typically used in composites as reinforcing materials. These natural fibers are not only strong and light weight but also relatively cheap and biodegradable. Nowadays manufacturing sectors are in constant research of such materials having low density, low cost, corrosion resistance, good impact toughness as well as chemical resistance. The natural fibers have all these required properties and hence they serve as better replacement for the present materials in various fields including automotive industries. These natural fibers can be very advantageous composites when proper resin has been selected with it.**

Keywords—Long Kenaf fiber, Epoxy resin

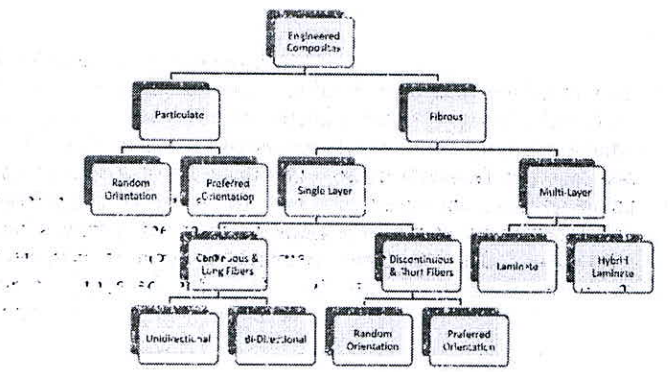
I. INTRODUCTION

The major automakers are increasingly turning to composites to help them meet performance and weight requirements, thus improving fuel efficiency. Cost is a major driver for commercial transportation, and composites offer lower weight and lower maintenance costs. typical materials are fiberglass/ polyurethane made by liquid or compression molding and fiberglass/ polyester made by compression molding. recreational vehicles have long used glass fibers, mostly for their durability and weight savings over metal. the product form is typically fiberglass sheet molding compound made by compression molding. For high-performance Formula 1 racing cars, where cost is not an impediment, most of the chassis, including the monologue, suspension, wings, and engine cover, is made from carbon fiber composites. The commercial applications of composites offer larger business opportunities. Hence introduction of these new polymer resin matrix materials and high performance reinforcement fibers of glass, carbon etc. and the penetration of these advanced materials has witnessed a steady expansion in uses and volume has resulted in reduction of cost. These Fiber Reinforced Polymers has huge applications such as in window panels, doors of automobiles, fuel cylinders, wind mill blades, beams of bridges, drive shafts.

1.1 Definition Of Composites

A Composite material can be defined as a combination of two or more materials that results in better properties than those of the individual components used alone. In contrast to metallic alloys, each material retains its separate chemical, physical, and mechanical properties. the two constituents are a reinforcement and a matrix. the main advantages of composite materials are their high strength and stiffness, combined with low density, when compared with bulk materials, allowing for a weight reduction in the finished part.

1.2 Classification of Composites



1.2.1 Basic Types of Composites

Based on Matrix

1. Metal Matrix Composites (MMC)
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Based on Reinforcement

1. Fiber reinforced polymer (FRP)
2. Particle reinforced polymer (PRP)

1.2.2 FIBRE REINFORCED POLYMER

These fiber reinforced polymers (FRPs, hereafter referred to as conventional composites) are gaining popularity as primary and secondary structural materials in aerospace, marine, automobile, civil construction applications, sports industry, defense, renewable energy sectors, textile industries and othe.

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Sugarcane Bagasse Reinforced Polyester Composites

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Abstract: *A composite material is made by combining two or more materials to give a unique combination of properties, one of which is made up of stiff, short fibres and the other, a binder or 'matrix' which holds the fibres in place. The fibres are strong and stiff relative to the matrix and are generally orthotropic. More recently natural fibers have been employed in combination with plastics. The abundant availability of natural fibre in India such as Jute, Coir, Pineapple, Sugarcane, Kenaf, Bamboo, Banana etc. gives attention on the development of natural fibre composites primarily to explore value-added applications. Reinforcement with natural fibre in composites has recently gained attention due to low cost, low density, acceptable specific properties, ease of separation, enhanced energy recovery, C02 neutrality, biodegradability and recyclable nature. Recently the interest in composite materials reinforced with natural fibers has considerably increased due to the new environmental legislation as well as consumer pressure that forced manufacturing industries to search substitutes for the conventional materials, e.g. glass fibers. The objective of paper is to evaluate the mechanical properties and characterization of sugarcane bagasse reinforced polyester composite.*

Keywords: Sugarcane Bagasse Composite, Tensile Test, Bending Test, Water Absorption Test.

1. Introduction

1.1 Need of Composites:

Plastics and Ceramics have been the dominant emerging materials. The volume and numbers of applications of composite materials have grown steadily, penetrating and conquering new markets relentlessly. Modern composite materials constitute a significant proportion of the engineered materials market ranging from everyday products to sophisticated niche applications. While composites have already proven their worth as weight-saving materials, the current challenge is to make them cost effective. The efforts to produce economically attractive composite components have resulted in several innovative manufacturing techniques currently being used in the composites industry. The composites industry has begun to recognize that the commercial applications of composites promise to offer much larger business opportunities than the aerospace sector due to the sheer size of transportation industry. Thus the shift of composite applications from aircraft to other commercial uses has become prominent in recent years.

1.2 Definition of Composite

Composites are multifunctional material systems that provide characteristics not obtainable from any discrete material. They are cohesive structures made by physically combining two or more compatible materials, different in composition and characteristics and sometimes in form. The weakness of this definition resided in the fact that it allows one to classify among the composites any mixture of materials without indicating either its specificity or the laws which should given it which distinguishes it from other very banal, meaningless mixtures. The composites should not be regarded simple as a combination of two materials. In the broader significance; the combination has its own distinctive properties. In terms of strength to resistance to heat or some other desirable quality, it is better than either of the components alone or radically different from either of them.

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Design & Fabrication of Remote Controlled Solar Lawn Mower

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Abstract - A remote controlled solar lawn mower is a device which reduces the work load on humans for trimming lawn. Rapid growth of various high-tech tools and equipment makes our work comfortable, accurate and time efficient. This project considers the implementation of a device which can be operated wirelessly with the help of a remote. Every action of the lawn mower is controlled by IR relays. The project also aims at fabricating a lawn mower in which, the motors run with the help of solar energy.

The requirement of electricity around the world is increasing at an alarming rate due to industrial growth, which in turn leads to increased and extensive use of electrical gadgets. Solar energy is the best alternative source, which is both renewable, and an eco-friendly source of energy. This project will reduce environmental and noise pollution caused by conventional lawn mowers. This prototype is user friendly, cost efficient and environment friendly.

***Key Words*: Robot, IR relays, Pollution, Renewable, Electrical gadgets.**

1. INTRODUCTION

A lawn mower is a machine that uses cutting blades or strings to trim lawn at an even height. The working principle of a lawn mower is: High speed of rotation of cutting blades provide the force required for effective and accurate trimming of lawn. Lawn mowers have become very essential in our daily life. More and more lawn mowers have been manufactured and used in the last few years. When we put all this together, a lot of power is being consumed by lawn mowers. Also, we can observe that lawn mowers have been the cause for a lot of air and noise pollution around the globe. This has led to consumers seeking for ways to reduce and solve their own carbon footprints. Also, there are government regulations limiting the pollution level of the device to a certain maximum level, which is decreasing over the years.

Our three member project team have observed this, and decided to design and fabricate a remote controlled solar lawn mower, which not only reduces air and noise pollution and dependence on non-renewable energy sources, but also reduces the work load on laborers and speeds up the work. This lawn mower integrates a conventional lawn mower with solar panels, remote controlled operation and a storage unit for collecting trimmed lawn. We have incorporated all these features in our lawn mower at the lowest price possible, without compromising much on quality of the product. We hope to see this device as the future of lawn mowers around the globe in the years to come.

2. LITERATURE REVIEW

2.1 Self-Efficient and Sustainable Solar Powered Robotic Lawn Mower. (December 2015)

Srishti Jain, Amar Khalore and Shashikant Patil

This paper proposes a solar powered vision based robotic lawn mower which is an autonomous lawn mower that will allow the user the ability to cut the grass with minimum effort. Unlike other robotic lawn mowers in the market, this design requires no perimeter wires to maintain the robot within the lawn and also with less human effort in the manual mode operation. Through an array of sensors safety takes major consideration in the device, this robot will not only stay on the lawn, it will avoid and detect objects and humans. Here they used a 12V 310mA solar panel in their project. There are 24 solar cells on the solar panel, each contributing to 0.5V each. They could attach a battery but as the lead acid rechargeable battery used is rated 12V 1.2Ah, it won't be overcharged due to the small output of solar panel. To detect the obstacles, they used IR sensors which has 1m 555 IC. There are two sensors, one on each side. This is because in case the obstacle is on the left then it will move in right direction and if the right sensor detects the obstacle then it goes towards the left. [1]

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Effect of Fiber Content on Mechanical Properties of Alkali treated Unidirectional Long Kenaf Fiber Reinforced Epoxy Composites.

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ABSTRACT

Environmental awareness of the general public and depletion of petroleum resource have trigged an enormous interest in utilizing the natural fibers, and their composites as environmentally friendly. Now a days, the numerous researchers, scientists and engineers have explored the production and properties of natural fibers and utilization of natural fibers as effectively and economically as possible to produce good quality fiber reinforced polymer composites. This will be helpful to evaluate the development and properties of natural fiber reinforced polymer composites. The use of natural fiber as reinforcement for polymer composites have generated much interest due to their availability, renewable, low cost, light weight, relative high specific strength and modulus, in explosive, minimal health hazardous, biodegradable and possibility of environmental protection. Also the use natural fibers offer some advantages regarding mechanical thermal properties.

Keywords: *Natural fiber, Kenaf, Epoxy, Alkali, Tensile test, Fexural test, Impact test, Hardness test.*

1. INTRODUCTION

Composite material is a materials system composed of a suitable arranged mixture or combination of two or more micro or macro constituents with an interface separating them that differ in form and chemical composition and are essentially insoluble in nature. The engineering importance of a composite material is that two or more distinctly different material combines to form a composite material that possesses properties that are superior or important in some other manner, to the properties of the individual components [1]. Generally composites are made of just two materials one is the matrix or binder, which surrounds and binds together fibers or fragments of the other material which is called the reinforcement. By choosing an appropriate combination of matrix and reinforcement, a new material can be made that exactly meets the requirements of a particular application. Due to their low weight and ability to be tailored for specific end use, they have gained a considerable ground in high performance applications such as aerospace and automobile industry.

2. MATERIALS, EQUIPMENT'S AND METHODS:

2.1 Materials:

The raw materials used in this study are Kanaf fiber (cannabinus –hibiscus) due to its high toughness and high aspect ratio, Epoxy resin LY-556 due to its excellent adhesion property, hardener HY-951 and sodium hydroxide. Kenaf fiber is the natural fiber available in all over places. Kenaf or hibiscus cannabisnus is a member of Malvaceae family having good mechanical and other properties also. Cannabinus as shown in figure1. Hibiscus Cannabinus is in the genus Hibiscus and is probably native to southern Asia, though is exact natural origin is unknown. The name also applies to the fiber obtained from this plant. The fiber forms are

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Effect of Graphene and Silica Fillers on Mechanical Properties of Polymer Nano Composites

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ABSTRACT

In the recent years Polymer Nanocomposites have become promising materials in all engineering materials for transportation, automotive, and biomedical applications. This paper presents various combinations of Nano fillers and matrix materials which were used to develop the Nano composite material by means of simple compression molding technique and characterization of mechanical properties. The effect of Nano Silica (0-25% by weight) and these properties was studied. The silica Nano filler has received much attention due to their ordered structure and high surface area. The Graphene has attracted considerable interest over recent years due to its intrinsic mechanical properties. Finally, Nano composites were subjected to tensile, flexural, impact and hardness testing to analyse the mechanical properties.

Key words: Polymer Nanocomposites, Nano Silica, Graphene, Nano fillers.

1. NANO COMPOSITES (NCs)

Nano composites are a class of materials in which one or more phases with nanoscale dimensions (0-D, 1D, and 2-D) are embedded in a metal, ceramic, or polymer matrix. The general idea behind the addition of the nanoscale second phase is to create a synergy between the various constituents, such that novel between the various constituents, such that novel properties capable of meeting or exceeding design expectations can be achieved. The properties of nanocomposites rely on a range of variables, particularly the matrix material, which can exhibit nanoscale dimensions, loading, degree of dispersion, size, shape, and orientation of the nanoscale second phase and interactions between the matrix and the second phase.

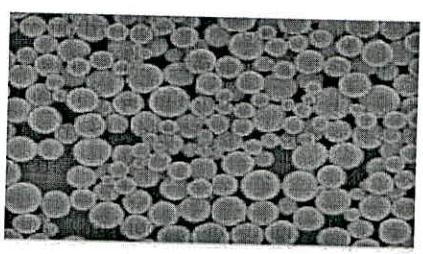

Figure 1: Nano particles

Polymer nanocomposites are defined as polymers in which small amount of Nanometer size fillers are homogeneously dispersed and will have potential significant impact on materials mechanical, electrical and thermal properties etc. Therefore in recent years polymer based nanocomposites with excellent mechanical, thermal and properties have drawn more and more attention to the research and industry peoples. Polymericnanocomposites can be broadly classified as:

1. Nano clay-reinforced composites.
2. Carbon nanostructures (Graphene, carbon nanotubes and carbon Nano diamonds) -reinforced composites.
3. Nanofiber-reinforced composites.
4. Inorganic particle reinforced composites.

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NUMERICAL ANALYSIS OF TENSILE PROPERTIES OF UNIDIRCECTIONAL COIR FIBER REINFORCED EPOXY COMPOSITE LAMINATE

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Abstract

In this paper numerical analysis of obtaining tensile strength properties of unidirectionally arranged coconut fiber reinforced epoxy composite laminate is discussed. Micromechanical analysis techniques are used to determine the elastic constants which are used as input to determine the stress and strain values. The strength and mechanical properties of the composite laminate can be predicted by knowing the stress strain values by using finite element analysis software. The stress-strain values are determined using empirical models. The empirical results have slight deviation from real time model because of different environmental conditions and this can be validated by performing the experimental testing of the composite laminate. Here the finite element analysis is carried out by considering the composite material as layered element and stress- strain values are computed using ANSYS software.

Key Words: FRP Composite, Coir Fiber, Numerical Analysis

1. Introduction to FRP Composite

Composite is a structural material composed of mixture of two or more materials which are mixed or bonded together. Fiber reinforced composite (FRP) consists of fibers as reinforcement material embedded in the matrix phase. The matrix holds the reinforcement fibers together to form the required shape of the composite material. The new material obtained will have superior properties than the individual constituent itself and is replacement for few conventional materials.

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Physico-Chemical Analysis of the Groundwater – A Case Study

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Abstract: *Groundwater samples collected from 12 different sampling stations were examined for various water quality variables namely, pH, TDS (Total Dissolved Solids), Temperature, EC (Electrical Conductivity), Chloride, Bicarbonate, Total Hardness (TH), Sodium, Potassium, Sulphate and Fluoride employing the standard methods of APHA (1998). The final experimental results were compared with the WHO variable standards (1993) and BIS variable standards (1998). The EC values of all the samples were above the permissible limits, 58% of samples exhibited TDS and TH values above the permissible limits. 16% of samples displayed calcium values above the permissible limit, 41% of the samples had Magnesium values above the permissible limit of WHO (1993). 25% of samples had Chloride values above the permissible limit of WHO (1993). Only a single sample displayed sulphate value above the permissible limit of WHO (1993). All the values are tabulated in table-1.*

Key Words: Water Quality variables; APHA; Talk; Hobli

I. INTRODUCTION

Water pollution is a rising serious concern in todays' scenario. Throughout the country with the swift upsurge in population, the demand for fresh water has also shown a linear increase. The groundwater today is witnessing two faced water crisis. On one hand, the existing aquifers are fast depleting due to its over exploitation through massive digging of bore wells (especially in metropolitan cities), encroaching of small aquifer recharge zones by expanding concrete colonies, secondly the existing groundwater is polluted by anthropogenic activities. An alarming situation of Bengaluru metropolis is mentioned by [1] wherein the groundwater table has largely depleted, many aquifer recharge zones have dried up, some have been encroached as a consequence of rapid urbanization. A few have them have been polluted with domestic wastes. Similar situations were observed by[2], [3] and [4].

Anthropogenic activities like excessive industrialization and irrigation pollutes the groundwater [5]. The dumping of industrial wastes and effluents deep in the ground may come in contact with the groundwater thereby polluting it. Increased use of chemical fertilizers, pesticides in agricultural fields may seep into the water table over a period of time may be along with rain water thereby causing groundwater pollution[6]. The current study area consists of both small scale industries and agricultural fields. Hence the current investigation deals with the assessment of groundwater quality for few water quality variables keeping in view the possible pollution by the above mentioned industrial and agricultural sectors.

II. METHODOLOGY

Groundwater were sampled from twelve stations in Hutridurga Hobli, Kunigal taluk, Tumkur district for various physicochemical parameters mentioned above. Variables namely pH, EC and TDS were estimated on the field, using portable water analyzer. Remaining variables such as Chloride, and Total Hardness were estimated using titrimetric analysis. Sulphate was estimated by Turbidimetry using spectrophotometer Elico in the laboratory of Atria Institute of Technology, Bengaluru. AR-grade

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Spatial Distribution of Fluoride in Groundwater

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ABSTRACT:*Groundwater samples were collected from thirteen sampling stations in Kolar city, Karnataka, India in June 2015. Water quality variables such as pH, Total Dissolved Solids (TDS) and Electrical Conductivity (EC), Total hardness (TH), Bicarbonate, Calcium, Magnesium and Fluoride were estimated using the standard guidelines of APHA (1998). From the analysis it was found that 15.4% of the samples were out of the range prescribed by WHO (1993), 92.3% of the samples had the TDS values exceeding the permissible limit of WHO (1993), 70% and 54% of the groundwater samples had Total Hardness (TH) and Bicarbonate values exceeding the permissible limits of WHO (1993), 38.4%, 902.3% and 54% of the groundwater samples have shown the Calcium, Magnesium and Fluoride values to be above the permissible limits of WHO (1993). The correlation study has shown that the variables Fluoride and pH have shown insignificant correlation between themselves and with all the other water quality variables. All the results obtained are discussed in detail in the paper.*

KEYWORDS: Groundwater; APHA (1998); Kolar City; Fluoride; Correlation.

INTRODUCTION:

In today's scenario we are witnessing a two dimensional water crisis. On one hand the rate of Aquifer depletion has exceeded the rate of Aquifer recharge due to increase in fresh water demand, which is in turn a function of the elevated population. On the other hand the existing fresh water in the active sources are subjected to Geogenic and Anthropogenic pollution which is paving way for the further worsening of the situation. This paper analysis the groundwater pollution in Kolar city for its pollution with respect to Fluoride along with other water quality variables due to Geogenic causes.

The problems caused due to elevated concentration of fluoride in water is not new to India. The first problem related to Fluoride is India was reported as early as 1937 in Andrapradesh[1], later on 17 states were reported with endemic fluorosis in 1999[2]. Karnataka state also falls into this category where it has witnessed fluoride related problems mainly towards its eastern belt. A Physicochemical study of groundwater was carried out by [3] and [4] in Kolar and Chintamani taluks wherein higher concentration of fluoride were witnessed.

The most common minerals below through which fluoride enters into the groundwater are apatite, rock phosphate, topaz and fluorite [5]. Fluoride intake through water can be beneficial or detrimental to health depending on its concentration in water [6]. Consumption of water with Fluoride concentration about 1.5 ppm results in Dental and Skeletal fluorosis. Dental fluorosis includes discoloured, blackened, mottled or yellowish teeth, skeletal fluorosis includes stiffness of joints and calcifying of bones [7]. Both these types of 'Fluorosis' are irreversible and no effective treatment is known at the acute stages. A number of people suffering from dental fluorosis and bed-ridden through skeletal fluorosis was observed during the field work. Hence, it is high time that the concerned authorities in power should look into this situation with great concern and do the needful for the benefit of the people of Kolar city.

MATERIALS AND METHODS:

Groundwater samples from thirteen sampling stations were collected from Kolar city in pre-cleaned polythene containers of 2L capacity. Water quality variables namely pH, TDS and EC were

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Effect of textile mill waste water on growth of Maize (Zeamays.l)

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ABSTRACT

The present investigation was carried out to assay the effects of effluents on the seedling growth &plant growth of Maize (Zea mays. L). For that purpose textile effluent were chosen. Concentrations used for the effluents were 0, 25, 50, 75 & 100%.Minimum relative toxicity percentage was in 25% concentration and increases gradually as the concentration increases. Textile effluent has more relative toxicity. A number of seeds also decreases with the increase in concentration. Irrigation with high TDS (Total Dissolved Solids) resulted in a decrease in optimal crop production.

Keywords— *Hgcl2, Sterilized distilled water, Seeds, Sterilized Petri dishes, Germination %, Root length, Shoot lengths, Relative Toxicity (%R.T.) The degree of inhibition over control*

1. INTRODUCTION

Maize is grown on more than 240 million hectares, larger than for any other crop. World trade in Maize is greater than for all other crops Compared to paddy in 2009, world production of Maize was 682 million tons, making it the second most produced cereal after Soya (817 million tons). Maize normally needs 110 and 130 days between planting and harvest, depending upon climate, seed type, and soil conditions. Pollen formation from the mother cell and the stages between a thesis and maturity are susceptible to high temperatures, and this adverse effect is made worse by water stress.

The two biggest Maize producers are China and Russia, followed currently by India then the USA. Amongst global resources, water is emerging as perhaps the most critical but misused natural resources. With certain limitations, one has to turn to non-conventional resources to meet the irrigation water demand. Among others, one of the most important irrigation6 as well as nutrient resources is industrial wastewater, which consists of about 95% water and there set as organic and inorganic nutrients. At higher pollution levels, the root system is extremely lost and at maturity, plants yield are much-reduced 5-7. Wastewater from industries also destroys our productive land by adding chemical compounds to these soils. Delayed germination and earlier leaf senescence are the two most important parameters which correspond to the final yield loss at the end of the season. Physico-chemical characteristics and fertilizing efficiency of dairy effluent is highly alkaline in nature and contains large amounts of suspended and dissolved solids resulting in high BOD (3892 mg/l) and COD (9682 mg/l) effluent has deleterious effects on agriculture and ecosystem when they are directly disposed off. Seed germination is a critical stage that ensures reproduction and controls the dynamics of plant populations, so it is a critical test of probable crop productivity. An attempt has been made to understand the effect of Textile mill effluent on seedling & plant growth in Maize.

2. MATERIALS AND METHODS

The study was carried out by systematic collection of Textile effluent (untreated) in 2 liters of polyethylene bottles. The samples were collected from the inlets of Textile industry (Andhra Pradesh) the collected samples were analyzed for pH, BOD, COD, TDS, SS, oil, and grease, calcium, magnesium, iron, manganese, copper, etc. The effluent was collected and stored in a clean polythene bottle that had been pre-washed with 10% nitric acid and thoroughly rinsed with de-ionized water and then standard methods were used for the analysis of effluents. The effluents were stored at 4^0C during storage period so as to avoid any change in its characteristics. Standard methods were used for analyzing water and wastewater.

2.1 Petridish Experiment procedure

For the germination experiments, certified healthy and equally sized seeds of Maize *(Zeamays* L.) sterilized with 0.1% HgCl2. After repeated washings with sterilized distilled water, seeds were soaked in the same water for 4hrs. Then 10 sterilized seeds

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