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X-RAY DIFFRACTION STUDIES DURING DILUTE ACID PRETREATMENT OF LIGNOCELLULOSIC BIOMASS.

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Abstract

Lignocellulosic biomass is proven raw material for production of bioethanol production. This biomass material is a complex mixture of various organic materials. The presence of carbohydrates in these biomass materials is making it an attractive alternate for conventional fuels. However, certain Pretreatment processes need to be employed in order to utilize these carbohydrates to produce bio-ethanol. This article aims towards the study of the effect of pretreatment process by using diluted acid on lignocellulosic biomass. The XRD study of samples reveals the changes in the morphology of the biomass material.

Keywords: Bioethanol; Diluted acid; Lignocelluloses; Pretreatment; X-ray diffraction

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MODELING AND STATISTICAL OPTIMIZATION OF DILUTE ACID HYDROLYSIS OFCATTAILS USING RESPONSE SURFACE METHODOLOGY.

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ABSTRACT

Dilute acid hydrolysis method was applied for the pretreatment of commonly occurring Cattail plants to produce fermentable sugars. Compositional analysis of the Cattails showed the major components of the lignocellulosic material were celludose, hemicellulose, and lignin to be 40.09, 22.86 and 24.12 % respectively. A four variable central composite design for response surface methodology (RSM) was employed to evaluate the simultaneous effect of acid concentration, soaking time, temperature and treatment time on the total reducing sugar concentration obtained during acid hydrolysis of Cattails. A validated quadratic statistical model was developed to relate the hydrolysis variables to the total sugar concentration. The optimal conditions of hydrolysis as obtained from RSM were as follows: acid concentration 2% v/v,soaking time 15 minutes, temperature 115°Cand treatment time 8 minute. The maximum concentration of total reducing sugar under these conditions was found to be83mg/L.

Keywords: Acid hydrolysis, Cattails, lignocellulosic biomass, central composite design, optimization

INTRODUCTION

The entire world is now aware of the problems arising by the use of crude oils and also the limited nature these reserves. Hence the focus has been shifted towards finding sustainable and environment friendly choices. Bioethanol has been getting the worldwide approval as an alternative for conventional fuels. The biomass is available worldwide and it is cheap. Conversion of abundantly available biomass to ethanol has been considered as a cost effective route. (Chen et al., 2009; Hahn-Hagerdal et al., 2006; Yang and Wyman, 2004). The biomass or precisely lignocellulosic biomass mainly consists of three components- cellulose, hemicellulose, and lignin. For converting the lignocellulosic material to bioethanol, first lignin needs to removed and subsequently the hydrolysis of the hemicellulose and a reduction in the fraction of crystalline cellulose in order to improve the accessibility of the substrate to celluloytic enzymes needs to be achieved.(Amenaghawon et al., 2013; Ballesteros et al. 2008; Emmel et al., 2003; Hosseini and Shah, 2009). Several methods have been studied and applied worldwide; typically categorized as physical (size reduction), chemical (acid hydrolysis, alkaline pretreatment, ozone, steam, and solvent pretreatment) and biological (enzymatic hydrolysis) or some combination of the three (Alvira et al., 2010; Fang et al., 2010; Lau and Dale, 2009).

Dilute acid treatment is one of the most commonly employed methods for this purpose. This process has several advantages over the other methods (Taherzadeh and Karimi 2007). It can either be used as a pretreatment step to improve the performance of hydrolysis or a standalone hydrolysis process for the production of fermentable sugars. Various dilute acids such as sulphuric acid, hydrochloric acid, phosphoric acid, and nitric acid have been used to remove hemicellulose and enhance the digestibility of cellulose.There are many factors like acid to biomass ratio, hydrolysis time particle size, hydrolysis temperature, acid concentration, etc. which affect the yield of fermentable sugars during this process.

Traditionally, optimizing these factors involves varying one factor at a time and keeping the others constant. This method has its drawbacks as is time consuming, cumbersome and often does not explain the effect of interaction between the various factors. Response surface methodology based on statistically designed experiments is a technique that has been found to be very useful in

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Research Article

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Self Sustainable Portable Structure

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Abstract:
A portable, demountable or transportable building is a building designed and built to be movable rather than permanently located. It is constructed by using different raw materials available from all sources and manufacturing methods that can efficiently satisfy a wide range of structural and aesthetic design requirements. It consist of various components such as side wall and roof panel, steel section, truss, flooring, ceiling, lighting, doors, windows. It can be easily assemble and dismantle on the site unlike conventional structure. Portable structure also consists of various foldable units. The project duration required for the construction of portable structure is less than that of conventional structure. Portable buildings provide all the facilities of a normal structure. They also provide a provision to be transported to any other location as per the needs. Providing good thermal insulation and a variety of uses these structures are now gaining their importance in areas where temporary structure is the basic need. They do not require any large amount of labour or long construction time. The construction and manufacturing process require a maximum 10 days and the cost are also affordable. The panels provide for someone looking to build a multi-family property, portable construction offers higher quality than traditional mass construction for the same amount of money. Portable construction should be strongly considered if having consistent quality is of high value.

Keywords: Portable, structure, construction, solar, engineering,

I. INTRODUCTION

A portable, demountable or transportable structure is a structure designed and built to be movable rather than permanently located. A common modern design is sometimes called modular structure, but portable structure can be different in that they are more often used temporarily and taken away later. Portable structures have been used since prehistoric times. The most familiar modern type of portable buildings are designed so that one can be carried to or from site on a large lorry and slung on and off by a crane. In this report the detail study of self-sustainable portable structure is been done. Portable buildings have been in use since humankind first began to build, yet because of their impermanent nature it is only recently that they have begun to perceive as architecture. Portable architecture consists of structures that are intended for easy erection on a site remote from their manufacture. The simplest strategy consists of buildings that are transported in one piece for instant use once they arrive at their location. The term portable architecture may be used in recognition of the fact that many contemporary examples of the structures have a significant effect on built environment. There is hardly one field of human activity that they do not support in some way- housing, education, medicine, commerce, manufacture, entertainment, military operation are a few. Portable architecture consists of structures that are intended for easy erection on a site remote from their manufacture. Portable has been used as general description for movable building for nearly two centuries. The design of portable building is not restricted by the lack of construction options, which enables them to range in size and complexity. A self-sustainable portable building includes the use of building-integrated photo-voltaic (BIPV) along with the conventional electricity.

II. METHODOLOGY

The primary framing structure of a pre-engineered building is an assembly of I-shaped members is used. In pre-engineered buildings, the I beams used are usually formed by welding together steel plates to form the I section. The I beams are then field-assembled like bolted connections to form the entire frame of the pre-engineered building. Some manufacturers taper the framing members varying in web depth according to the local loading effects. Larger plate dimensions are used in areas of higher load effects. Other forms of primary framing can include trusses, mill sections rather than three-plate welded, castellated beams, etc. The choice of economic form can vary depending on factors such as local capabilities and variations in material versus labor costs. Typically, primary frames are 2D type frames. Advances in computer-aided design technology, materials and manufacturing capabilities have assisted a growth in alternate forms of pre-engineered building such as the tension fabric building and more sophisticated as is required by some building codes. Cold formed Z- and C-shaped members may be used as secondary structural elements to fasten and support the external cladding. Roll-formed profiled steel sheet, wood, tensioned fabric, precast concrete, masonry block, glass curtain wall or other materials may be used for the external cladding of the building. Various components of structure is shown in figure 1. In account of accurately design a pre-engineered building, engineers consider the clear span between bearing points, bay spacing, roof slope, live loads, dead loads, collateral loads, wind uplift, deflection criteria, internal crane system and maximum

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Effects of Different Shapes of Building on Natural Time Period during Earthquake

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Abstract

*Indian standard recommended that the natural time period is a function of a building and the Base dimension of the building. This work is a continuation of previous paper i.e. "**Effects of Various Parameters of Building on Natural Time Period**". From previous work analysis results shows that natural period was varying according to various parameters of buildings i.e. due to effect of stiffness, mass, height of building and column orientation. For that we have consider, 10 types of rectangular models from hand book "Some Concepts in Earthquake Behaviour of Buildings" by C. V. R. Murty. In this paper, we have considered same 10 types of base model but instead of rectangular shape , we have consider "C", "L" and "T" shape buildings. Test results reveals that, natural time period was varying according to different shapes of building. It was concluded that, shape of buildings affect the natural time period of the building. Results were not ideal as compare to rectangular building in case of "C", "L" and "T" shape buildings.*

Keywords: *Building, Natural Time Period, Different shape of building, Stiffness, Mass.*

INTRODUCTION

Damages occurred during an earthquake may affect the building. So it is very important that building may sustain during an earthquake. For this, study of natural time period was done. Details of total 10 buildings have considered. One of these buildings, namely a five storey building, was chosen as the basis, and is hereinafter called the Base Building. It was a bare frame with a plinth beam (and no slab) at ground floor level. The details of this benchmark building are given in Figure 1. Numerical results are used to explain the concept of natural period and the factors that influence it. Reinforced concrete moment resistant frame buildings were used to illustrate the concept; some properties of these buildings are listed in Table 1.

The aim of this study is to analyze the effect of different shapes of building due to natural period in both the directions i.e. X and Y. Analysis part has been done by using Etab's software for various types of buildings according to their different shapes.

Problem Formulation

Structural Element Sizes:

Beams: 300 × 400 mm
Columns: 400 × 400 mm
Slab: 150 mm thick

Material Properties:

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Laboratory Evaluation of Warm Mix Asphalt

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ABSTRACT

Over the last thirty years, road traffic has luxuriate significantly and loading is progressively getting cruddy due to the introduction of newer and ancillary big- wheel trucks with heavier and wider bodies in India. This study emphasizes on the mix design considerations. In this study, bituminous concrete grade-I (BC-1) and Zycotherm additive on the warm mix asphalt paving mix is used to achieve sufficient stability, durability and to satisfy requirements. It is about the effect of Zycotherm additives on the Marshall Properties, Indirect tensile strength, Tensile strength ratio and retained stability test of warm mix asphalt. The specification such as Bulk density, Volume of air voids, Voids in Mineral Aggregates, Voids Filled with Bitumen, Stability and Flow, Indirect Tensile Strength, Tensile Strength Ratio and Retained Stability are determined. It is taken up with the objectives of to know the effect of Zycotherm on the properties of bituminous mix. The different percentage of Zycotherm additives are added in bitumen and bituminous mix, and tested their viscosity test, penetration values, softening points, ductility test at low temperatures are determined and an attempt is made to compare the Marshall properties of WMA produced with the chemical additive, Zycotherm and HMA for Bituminous Concrete (BC) Grade I. The results of this study showed that the emissions are significantly reduced during the production and placement of WMA mixtures as compared to the control HMA mixture. The modified bitumen for warm mix asphalt indicated high consistency and lower softening point than ordinary bitumen. Warm mix asphalt mixtures also showed better results in term of strength, stiffness and lower rate of permanent deformation.

Keywords: Indirect Tensile Strength, Retained Stability, Warm Mix Asphalt, Zycotherm Warm Mix Additive.

I. INTRODUCTION

1.1 General

The asphalt industry all the time looks for a well-organized way to save energy and reducing the emissions. Rising energy cost and increased environmental awareness due to HMA (Hot Mix Asphalt), Asphalt industry have brought attention to the potential benefits of Warm Mix Asphalt (WMA) binders. WMA is a fast emerging new technology with potential of revolutionizing the production of asphalt mix. WMA technology may permit the mixing, and compaction of asphalt at 30°C to 40°C lower temperatures compared to HMA. WMA is produced by incorporating additives into asphalt mixtures to let the production and placement of the mix at temperatures well below the temperatures of conventional HMA.

1.2 Overview of Warm Mix Asphalt (WMA)

It is the generic term for a variety of technologies that allow producers of Hot Mix Asphalt (HMA) pavement material to lower temperatures at which the material is mixed and placed on the road. It is a proven a technology that can Reduce paving costs , Extend the paving season , Improve asphalt compaction , Allow asphalt mix to be

V.P. Ingole

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Earned Value Analysis of Residential And Commercial Building For Project Tracking

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Abstract- *Earned Value Management helps to analyze the project's performance and predict the forecast. It shows the current status of the project, tracks actual progress with the planned progress, answers various performance related queries such as whether projects are over budget or under budget and whether you are behind schedule or ahead of schedule, etc. This technique is used to compare actual cost to budgeted cost of work in civil construction projects. The present study deals with the project monitoring process and rescheduling and also to discuss the main parameter's that are involved in the calculation of Earned Value Analysis in cost management of construction projects. For EVM calculations MSP 2016software is generally used. The main objective of project to track the existing project and perform analysis for effective scheduling and cost benefit analysis. Site data sampling is done for industrial sites as well as residential sites.*

Keywords- Earned Value Analysis, Rescheduling, Project Tracking.

I. INTRODUCTION

Earned Value analysis is a method of performance measurement. Earned Value is a program management technique that uses "work in progress" to forecast the future possibilities of work. Earned Value is an up gradation of the traditional accounting methods used by the project managers. In the traditional methods the main focus was on planned accomplishment i.e. expenditure and actual costs. Whereas Earned Value goes one step further and examines actual accomplishment of the project. This gives managers a greater understanding of upcoming potential risk. It is an "early warning" program/project management tool that enables managers to identify and control problems before they become insurmountable.

It allows projects to be managed better – on time, on budget. Earned Value Management is a set of guidelines that guide a company's management control system and it is not a system or a technique. When the project gets over budget, the project management team may implement a value engineering program for cost reduction by either reducing the quality work of project in some parts and by reducing the scope or providing extra budget to cover overrun cost. Similarly, for time overrun case, the may plan some program such as fast tracking or time crashing for time reduction. Therefore, the role of EVM as well as correct and on time forecasting is very important to achieve project goals. This research includes implementation and improvement on FV to achieve a forecasting EAC based on statistical and econometrics techniques and traditional EV indexes as well. The Earned Value Analysis (EVA) is a valuable technique to determine real gains and losses. EVA provides means to balance gains/losses, optimize the balance and maximize the gains. EVA is a powerful tool to control simultaneously physical and cost performance.

The solution is an appropriate WBS – Work Breakdown Structure, and a suitable account plan. The solution requires distinguishing the financial control and cost control

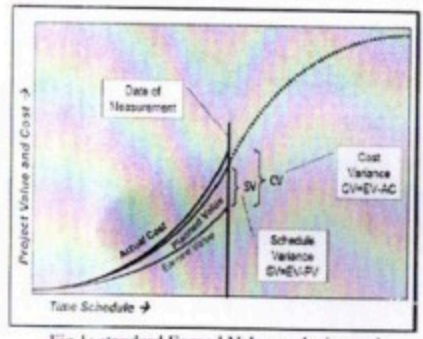

Fig 1: standard Earned Value analysis graph

1.2 Earned Value Analysis – EVA – Basics and Concepts:
The main EVA variables (indicators) are:

- BCWS (Budgeted Cost of Work Scheduled) - PV (Planned Value)

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Comparative study of different codes on steel building

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ABSTRACT

The paper mainly focuses on the comparison of two different code that is IS code is IS800: 2007 (LSM), IS 875: 1987 part (I, II, and III) and AISC LRFD code for a conventional industrial steel building. It's a case study for the industrial building based on the review and the various case studies which show their experimental and analytical study carried out in this field. Different structural design code provides different data and procedure of design to engineering. Comparisons of the different factor with the same loading. To conduct the study a 3D model of Industrial building having dimension 15m×45m, 20m×50m, 23m×65mwith three different spacing that is (4.5m,5m,6m); (5m,6m,7m); (5m,6m,7m) having column height 6m is designed and analyzed on STADD-Pro V8i structural design software.

Keywords— *IS800:2007(LSM) Limit State Method, IS875:1987 Part (I, II and III), AISC LRFD (Load and Resistance Factor Design), Industrial building, STADD-PRO V8i software*

1. INTRODUCTION

Steel is the material of choice for design because it is ductile and flexible. Steel members have high strength per unit weight and the properties of the steel member mostly do not change with time. Also, addition and alteration can be made easily steel structure. In this study, an industrial warehouse is analyzed and designed according to Indian standard IS800:2007, IS875:1987 (Part I, II and III) and also referring AISC LRFD with the built-up member. The behaviour of the structure discussed with respect to its analysis result and weight between IS code and AISC code designed of structure done by two methods explained as follow:

.1 Limit State Method (LSM)

The limit state method uses the concept of fitness of the structure to perform its function satisfactorily during its service lifespan. The condition or the state at which structure become unsafe is called the limit state and the philosophy based on this concept is called limit state philosophy of design. Several independent factors are used in the limit state design each of which plays a particular role to ensure the reliability of the structure and the guarantee against the occurrence of a limit state.

1.2 Load and Resistance Factor Design (LRFD)

In this method load on the structure is considered and the resistance factor of material is considered in design considering yield stress. Basically, LSM and LRFD both are the same. With the advantage of the modern state of the art design methodology in the form of limit state method or the load and resistance factor design method rationally and overall economy has become the keyword in the design of steel structure.

The advantages of steel construction are as follow:

(a) To provide high quality, strong, durable & stable structure.
(b) It has a high fire resistant property and is environmentally friendly material.
(c) Construction with the steel material is fast compared to other materials.
(d) The steel component can be recovered, recycled and reused effectively.

2. VARIOUS LOADS ON INDUSTRIAL BUILDING

2.1 Dead load

A dead load of truss includes a dead load of roofing materials, purlins, trusses and roof bracing system. The dead weight of trusses may be assumed to be equal to 10% of the load on the truss. A simple estimation of a roof truss is approximate in N/m^2.

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A Review on Non-linear Pushover Analysis of Flat Slab Building

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ABSTRACT:Flat slab systems in current construction practice are commonly used for relatively light residential loads and for spans from 4.5m to 6m. The flat slab type of construction provides architectural flexibility, more clear space, less building height, easier formwork, and consequently, shorter construction time. However, flat slabs are susceptible to significant reductions in stiffness as a consequence of slab cracking that can arise from construction loads, service gravity loads, temperature and shrinkage effects, and lateral loads. When subjected to earthquake action, the unbalanced moments can produce high shear stresses in the slab. Hence it is necessary to study the performance of flat slab when subjected to earthquake. Performance based seismic design (PBSD) is the modern approach to earthquake resistant design. The pushover analysis of a structure is a static non-linear analysis under permanent vertical loads and gradually increasing lateral loads. This paper will concentrate on various studies of evaluation of performance of flat slab by non-linear static (pushover) analysis.

KEYWORDS:Flat slab, Performance based seismic design, Pushover analysis.

I. INTRODUCTION

The construction of flat slab building is increasing rapidly as they have many advantages. Flat slabs are susceptible to significant reductions in stiffness as a consequence of slab cracking that can arise from construction loads, service gravity loads, temperature and shrinkage effects, and lateral loads. Flat slab systems experience excessive lateral drifts (displacement) when subjected to wind loads or seismic excitations. Therefore in regions of high seismic risk, modern seismic design codes prohibit the use of flat slab/plate as a lateral load resisting system, but allow its use as a vertical (gravity) load resisting system. When subjected to earthquake action, the unbalanced moments can produce high shear stresses in the slab. Hence it is necessary to study the performance of flat slab when subjected to earthquake.

The pushover analysis is becoming popular method of predicting seismic force and deformation demands for the purpose of performance evaluation of existing and new structures. This procedure is mainly used to estimate the strength and drift capacity of existing structure and the seismic demand for this structure subjected to selected earthquake. This procedure can be used for checking the adequacy of new structural design as well. The effectiveness of pushover analysis and its computational simplicity brought this procedure in to several seismic guidelines (ATC-40[3] and FEMA 356[4]) in last few years.

The flat-slab system, as shown in Fig.1, is a special structural form of reinforced concrete construction that possesses major advantages over the conventional moment-resisting frames. The former system provides architectural flexibility, unobstructed space, lower building height, easier formwork and shorter construction time.

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Feasibility Study of Domestic Wastewater using Hybrid Process

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Abstract:
With the introduction of stringent effluent standards, it is the responsibility of wastewater treatment engineer to treat the wastewater to satisfy the requirement of receiving streams. The wastewater is conventionally treated either by Attached Growth System or by Suspended Growth System. Recently a new trend is developed to adopt the combination of Attached and Suspended Growth System of treatment. The combinations of treatment systems provide better results and as such the efforts will be made to study the efficiency of treatment. The combined activated & suspended growth system is advantageous for improvement of the efficiency. The present paper describes techniques for effective domestic waste management. Effort is made to treat the domestic waste by developing a technique such as Hybrid Process. Hybrid process is a technology which enhances the efficiency of domestic wastewater treatment. Hybrid process is a technique of using attached & suspended growth system by effectively using the advantages of both systems. The performance of various reactors best on attached & suspended growth system is discussed. Suitability of attached & suspended growth system is discussed thoroughly. The lab scale model is operated for different operating conditions at different detention time. To study the performance of the reactor a laboratory model is fabricated with steel having appropriate dimension. The model is provided with appropriate arrangements of inlet, outlet arrangements. Extensive study is carried to study the performance of reactor various parameter such as BOD, COD. Energy & cost consideration of combined attached & suspended growth system is discussed.

Keywords: Attached growth system, Suspended growth system, Removal efficiency, media, Diffused Aerators.

I. INTRODUCTION

Water Water is essential to all forms of life and makes up 50-97% of the weight of all plants and animals and about 70% of human body. Water is also a vital resource for agriculture, manufacturing, transportation and many other human activities. There are household uses such as showering, dishwashing, laundry and, of course, flushing the toilet. Despite its importance, water is the most poorly managed resource in the world. Wastewater is water that has been polluted due to anthropogenic activities. Wastewater is the byproduct of many uses of water. Types of wastewater include domestic, commercial, industrial and agricultural, categorized by their sources as well as type of contaminants and concentration. Untreated or inadequately treated wastewater discharged into a receiving stream brings with it biodegradable organic material that diverse communities of microbes decompose. These reduction/oxidation processes consume dissolved oxygen in streams and mineralize organically bound nutrients that become available to plants. The mineralized nutrients stimulate growth of algae at the base of the food web. Excessive microbial depletion of dissolved oxygen, or eutrophication, can impair the ability of streams, lakes or coastal waters to support aerobic forms of aquatic organisms. Untreated wastewater causes major damage to the environment and to human health. Almost always, therefore, wastewater should be treated in order to reduce the transmission of excreta-related diseases and to reduce water pollution and the consequent damage to aquatic biota. Only if there is a very large available dilution (>500) in the receiving watercourse can consideration be given to discharging untreated wastewater. Increasing affluent lifestyles, continuing industrial and commercial growth in many countries around the world in the past decade has been accompanied by rapid increases in both the municipal and industrial solid waste production. One of the many byproducts of civilization is waste. Waste arises from households, industrial factories, and other facilities to purge the unwanted wastes, sewage systems were created in populated areas. Sewage systems wash down the waste with water, disposing the resulting wastewater in the desired locations. The increase in population and the expansion of cities have led to a greater disposal of wastewater into the environment improper disposal of wastewater has led to outbreaks of disease arising from wastewater in many parts of the world. These outbreaks increased the need for wastewater management and treatment, driving the demand for wastewater treatment to higher levels. Wastewater is any water that has been adversely affected in quality by anthropogenic influence. It comprises liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture and can encompass a wide range of potential contaminants and concentrations. In the most common usage, it refers to the municipal wastewater that contains a broad spectrum of contaminants resulting from the mixing of wastewaters from different sources. Wastewater also known as sewage originates from residential commercial and industrial area. Wastewater engineering is that branch of environmental engineering in which the basic principles of science and engineering are applied to solving the issues associated with the treatment and reuse of wastewater. The ultimate goal of wastewater engineering is the protection of public health in a manner commensurate with environmental, economic, social, and political concerns. When untreated wastewater accumulates and is allowed to go septic, the decomposition of the organic matter it contains will lead to nuisance conditions including the production of malodorous gases. In addition, untreated wastewater contains numerous pathogenic microorganisms that dwell in the human intestinal tract. Wastewater also contains nutrients, which can stimulate the growth of aquatic plants, and

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STUDY OF NOISE POLLUTION IN WASHIM TOWN

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ABSTRACT

In the recent year's due to urbanization industrialization, growth in construction industry and facility provided in road transport in India has created excessive noise pollution which is displeasing for human and animal life. Noise pollution refers to such levels of Noise or Sound in the environment that are disturbing, irritating and annoying to living being. Both physiological and psychological health of human being and behavioral in nature can be affected by Noise Pollution. Also Noise pollution can cause annoyance and aggression, hypertension, high stress levels, hearing loss, sleep disturbances and child development. Washim is district place belonging to Vidarbha Region of Maharashtra State in India. As Washim town is developing area and a connected big rural area, there is a rapid urbanization and migration of people, alarming growth of population is causing serious environmental problems. Noise is one of the environmental problems that uncomforts in daily life. The objective of this paper is to study the noise level values for exceed the standards set by the central pollution control board and, to investigate the various noise parameters at different Zone.

Keywords: Noise Pollution in India, Road Traffic Noise, Noise Indicator.

I. INTRODUCTION

The environmental effects of transportation projects have come under close scrutiny in recent years. Noise is an inevitable part of everyday life; Mild noise can be annoying, excessive noise can destroy a person's hearing. The slightest unwanted sound can become very annoying if it continues for any length of time. While some nearby residents may ignore the continuous hum of a busy freeway, others will never be able to ignore it and increasingly will find it irritating. Over the years the general incidence of noise has been increasing, the development of the steam engine, the petrol engine, and technological machinery in industry, contributed to an increasingly noisy environment in the nineteenth century. This has been further exacerbated in the twentieth century by the diesel engines, the turbo prop and jet engine, the increasing use of faster industrial production machinery, construction site machinery and the increased volume of road traffic. Disturbance by noise is probably the most important environmental impact of the transportation apparatus and affects a large number of people, particularly those living in built-up areas.

II. LITERATURE REVIEW

Ramalingeswara Rao P. et al described that the environmental noise level due to motor vehicle traffic to a first approximation is a function of traffic volume. The values of sound pressure level (L10) resulting from traffic noise measurements over one-hour periods have been correlated with the equivalent measured numbers of heavy, light vehicles per hour (traffic density). A statistical analysis of the data has been made to enable L10 be expressed in terms of the traffic density in the city of Visakhapatnam, India in 1986 and 1987. Plots of L10 against logarithm Nh (equivalent heavy vehicle density) and logarithm Nl (equivalent light vehicle density) for the different zones, as well as for the entire city have been made. The validity of these equations is tested by computing the values of the noise indices from these equations, using the traffic density data and comparing them with the measured values. The difference between the measured and calculated values is very small. [1]
Mishra et al. laid emphasis on the newly introduced bus rapid transit system (BRTS) corridor at New Delhi. The paper included interpretation of primary data to predict the noise levels along the BRTS corridor. It focused on comparative study of modeled and measured noise levels. It also discussed about the impact of this corridor on

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Review on Self compacting Concrete using GBFS

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Abstract:-Self-compacting concrete (SCC) is a propelled solid that spreads into the shape without the requirement for mechanical vibration for setting and compaction. It can stream under its own weight, totally filling formwork and accomplishing full compaction, even within the sight of congested fortification.

In this paper literatures of various researches were studied. Those paper give more information about the self compacting concrete and comparison of natural and manufacture Fine Aggregate cement concrete and mortar. Granulated Blast Furnace Slag as a fine aggregate substitute in self compacting concrete.

Keywords: Self-compacting concrete, GBFS

1.0 INTRODUCTION

Aggregate affect both rheological and mechanical properties of mortars and concrete. Their specific gravity, particle size distribution, shape and surface texture notably the properties of mortars and concrete in the fresh state. Then again, the mineralogical structure, toughness, elastic modulus and degree of alteration of aggregates are for the most part found to influence the properties of mortars and concrete in the hardened state.

In India, natural river sand (fine aggregate) is generally utilized as a part of mortars and concrete. Be that as it may, developing natural limitations to the misuse of sand from riverbeds have brought about a search for elective sand, especially close to the larger metropolitan regions. This has acquired extreme strains on the accessibility of sand forcing the construction industry to search for an elective construction material. Along these lines manufactured fine aggregate show up as an alluring contrasting option to characteristic fine aggregate for cement mortars and concrete. Manufactured sand is entirely different from regular natural river sand. The surface qualities are extraordinary. The vast majority of the manufactured sand is irregular and more porous. grading vary over wide range bringing about interior porosity and decrease in workability of mortar or concrete. Various investigations have managed the impact of both grading and particle shape of the fine aggregate in mortars and concrete. For good quality manufactured sand at a given water/cement ratio, it has been found that concrete made with manufactured sand achieved compressive strength equal To or higher than concrete made with characteristic sand diminishing the void substance of the aggregate in this manner greasing up the aggregate framework without expanding the water requirement of the mixture To understand the variations in mixing water requirements, many earlier researchers have investigated the effect of particle shape of aggregates on water demand in concrete. They have discovered that the shape of the fine aggregate has a more noteworthy effect on water request than the shape of the coarse aggregate. Promote inside the allowed standard confines the particle size distribution of the fine aggregate was found to have a more noteworthy impact in the properties of concrete than that of the coarse aggregate. Therefore the decision of the suitable type of fine aggregate for a given application is of essential significance to the extent properties of mortars and concrete are concerned. Various types of slag came from copper and steel industries which are utilized as a part of mortar and concrete. The utilization of granulated blast furnace slag (GBFS) as a aggregate in mortar and concrete gives ecological and also financial advantages. Many steel industries in India are supplying GBFS as an alternative to sand. Likewise there are numerous other elective materials for aggregate got from construction and demolition wastes recycle aggregates and quarry wastes. These aggregate are effectively used in concrete production which can likewise save natural materials and to diminish the cost of waste treatment before disposal

Self-compacting concrete (SCC) has been described as "The most revolutionary development in concrete construction for several decades". Initially created to counterbalance a developing lack of skilled labour.

It is initially created in japan SCC innovation was made conceivable by the significantly prior improvement of superplasticisers for concrete. SCC has now been taken up with excitement crosswise over world for both site and precast concrete work. Useful application has been joined by much research into the physical and mechanical characteristics of SCC and the extensive variety of knowledge created has been shifted and joined in this rule record

Granulated blast-furnace slag (GBFS) is obtained by quenching molten iron slag (a by-product of iron and steel-making) from a blast furnace in water or steam, to produce a glassy the chemical composition of a slag varies considerably depending on the composition of the raw materials in the iron production process. Silicate and aluminate impurities from the ore and coke are combined in the blast furnace with a flux which lowers the viscosity of the slag. In the case of pig iron production the flux consists mostly of a mixture of limestone and forsterite or in some cases dolomite. In the blast furnace the slag floats on top of the iron and is decanted for separation. Slow cooling of slag melts results in an unreactive crystalline material consisting of an assemblage of Ca-Al-Mg silicates. To obtain a good slag reactivity or hydraulicity, the slag melt needs to be rapidly cooled or quenched below 800 °C in order to prevent the crystallization of melilite. To cool and fragment the slag a granulation process can be applied in which molten slag is subjected to jet streams of water or air under pressure. Alternatively, in the pelletization process the liquid slag is partially cooled with water and subsequently projected into the air by a rotating drum.

2.0 LITERATURE REVIEW

M C Nataraja, P G Dileep Kumar, A S Manu and M C Sanjay Studied on a use of Granulated blast furnace slag as Fine aggregate in cement mortar. This study focuses on investigates the possibility of utilizing Granulated Blast Furnace Slag (GBFS) as a sand substitute in cement mortar, in order to reduce environmental problems related to aggregate mining and waste disposal. In their experiment, cement mortar mix is1:3 and GBFS at 0, 25, 50, 75 and 100% replacement to natural sand for constant w/c ratio of 0.5 is considered. They extended

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Preliminary Investigations into Behavior of Load Bearing Structure Using Non-Autoclave Aerated Concrete

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ABSTRACT *:Since the time immemorial, load bearing structures are constructed using burnt / unburnt bricks having compressive strength ranging from 1.5 to 3.5 MPa and above. An attempt have been made in this paper to present preliminary analytical & experimental investigations into behavior of load bearing structure using Non Autoclave Aerated Concrete using the reinforced foam concrete walls. Reinforced foam concrete walls are cast monolithically to receive the load transmitted from roof slab and transfer it to strata. The Foam concrete being light weight, dead load is expected to be reduced. As the casting of walls is carried out monolithically with the slabs, the construction time may be reduced drastically up to in 7 days depending upon the size & extent of construction with nominal workforce. It will also facilitate the repeated use of shuttering & formwork. For making foam concrete sand is eliminated upto 75% and replaced by 10 mm metals. This will help us to counter the problem of shortage of sand. Foam concrete walls can act as good thermal insulator and can be used for extreme weather conditions. For preparation of foam concrete aluminum and liquid foaming agent are used.*

KEYWORDS *- coarse aggregate, foaming agent, Foam concrete, NAAC(Non Autoclaved Aerated Concrete), sand*

I. INTRODUCTION

Traditionally, aerated concrete is autoclaved in order to achieve the high compressive strength necessary for structural use. While the high temperatures and pressures from the autoclaving process give rise to crystallization and thus high compressive strength, the process is extremely energy intensive. Eliminating autoclaving would save significant energy and will also solve the problem of autoclaving at work site, but other methods would need to be employed to maintain good compressive strength. Thus, the primary aim of this project is to develop a form of concrete with a high strength to density ratio: low density for high materials efficiency and high compressive strength with the elimination of autoclaving.

- Our prototype is a non autoclaved aerated concrete (NAAC) with two main benefits: Efficient material usage due to a porous structure and less embodied energy due to the elimination of autoclaving.
- Since aerated concrete is less dense than traditional concrete, it uses less material. The use of aerated concrete would cut down on emissions and energy associated with the primary materials used in concrete.

The demand of natural sand is quite high in developing countries to satisfy the rapid infrastructure growth due to extensive use of concrete; causing very high global consumption of natural sand. Now-a-days large amount of depletion of natural sand is causing a serious threat to the environment as well as society. Increasing extraction of natural sand from river beds causes many problems like retaining sand strata, deepening of the river courses and causing bank slides, loss of vegetation on the banks of rivers, exposing the intake well of water supply schemes, disturbs the aquatic life and also affecting agriculture due to lowering the underground water table etc are few examples. Now a day's sand is becoming a very scarce material, in this situation research began for inexpensive and easily available alternative material of natural sand. Some alternative materials have already been used as a part of natural sand e.g. fly-ash, slag lime-stone and siliceous stone powder are used in concrete mixtures as a partial replacement of natural sand. In this paper we are worked on replacing sand by fly ash and 10mm metal. Traditionally the Frame structures are usually constructed with components like slabs, columns and beams. The load is shared and transmitted by all and hence components only so the grade of the concrete required is moderately high M20 (density 24KN/m^3), however if equal load is shared by all the components (i.e. monolithic construction of walls, slabs and columns of same grade) then the grade of concrete required is significantly low M5 (density 12KN/m^3)for one or two storey building. The purpose can be fulfilled by using light weight concrete. So we aimed at preparation of **non autoclave aerated concrete**. Since we are using light weight concrete, the dead load transferred from floor to floor is reduced considerably. So load coming on substructure is also reduced. We are also aiming at comparing Frame structure design with NAAC structure. **Since no Indian standard code is available** for foam concrete, extensive laboratory research

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DESIGNING OF SOFT STOREY FOR RC STRUCTURE USING IS-1893(PART I)-2016, AND IS-13920-2016

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Abstract

With urbanization and increasing unbalance of required space to availability, it is becoming imperative to provide open ground storey in commercial and residential building. These provisions reduce the stiffness of the lateral load resisting system and a progressive collapse becomes unavoidable in a severe earthquake for such buildings due to soft storey. Soft storey behavior exhibits higher stresses at the columns and the columns fail as the plastic hinges are not formed on predermined positions. Thus the vulnerability of soft storey effect has caused structural engineers to rethink the design of a soft storey building.
In the current study the focus is on the design of soft storey for RC structure according to updations given in IS 1893(part I)-2016 and some clauses of IS 13920-2016 using different models

Keywords:- *Soft storey, open storey, shear wall, braces(infill),Dynamic analysis, seismic loads*

I. INTRODUCTION

Reinforced-concrete framed structure in recent times has a special feature i.e the ground story is left open for the purpose of social and functional needs like vehicle parking, shops, reception lobbies, a large space for meeting rooms or a banking hall etc. such buildings are often called open ground storey buildings or soft storey buildings. Experience of different nations with the poor and devastating performance of such buildings during earthquakes always seriously discouraged construction of such a building with a soft ground floor. This storey known as weak storey because this storey stiffness is lower compare to above storey. So that easily collapses by earthquake.

II. BEHAVIOUR OF SOFT STOREY

Large open areas with less or no infill and exterior walls in ground floor compared to upper floors are the cause of damages.Due to the presence of infill walls in the entire upper storey except for the ground storey makes the upper storey much stiffer than the open ground storey. Thus, the upper storey move almost together as a single block and most of the horizontal displacement of the building occurs in the soft ground storey itself. In other words, this type of buildings sway back and forth like inverted pendulum

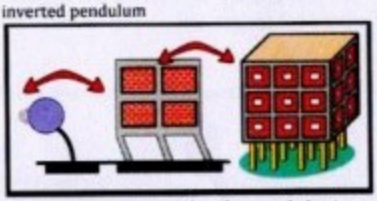

Figure 1 Building with soft storey behaving as inverted pendulum

during earthquake shaking, and hence the ground storey columns and beams are heavily stressed. Therefore it is required that the ground storey columns must have sufficient strength and adequate ductility.

III. Revisions in IS 1893(Part I)-2016, for design of soft storey

Clause 7.10.1-Open ground storey buildings shall be provided with

1-RC Structural walls, or

2-Braced Frames, in selected bays of the building.

Clause 7.10.2-When RC Structural walls are provided,they shall be

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URBANIZATIONAL CHALLENGES IN UTTRAKHAND STATE: A CASE STUDY

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ABSTRACT

Advancement in technology is a tool to predict the response of structure against disaster (like earthquake, landslides, flood, tsunamis etc.). Development in technology and increasing living standards causes urbanization and developed country needs urbanization. Development in transportation, infrastructure and industrialization are basic terms to urbanize any country. Natural calamities may create hurdles if proper planning and design is not done. Take example of Uttarakhand state of India. Uttarakhand is a mountainous state of north India and its ecology is very fragile. Major industries are hydropower generation and religious tourism. Tourism is putting immense pressure on natural resources. Analysing a natural disaster is a complex task. Many a times, a natural disaster and its human impacts are result of multiple things occurring together. Uttarakhand state has to face natural disaster frequently. Due to unplanned urbanization, the effect of disaster was increased many folds. In this research paper case study of disaster in Uttarakhand (June 2013) is discussed. Various preventing majors for mitigation of disaster are given.

Keywords: Natural disaster, landslides, slope stability and urbanization challenges.

INTRODUCTION

Uttarakhand is a mountainous state of north India. The nature of Uttarakhand state is very fragile. Area of Uttarakhand state is 53,483 sq km. In which 86% area is covered by mountains. Northern part of the state is covered by high Himalayan peaks and glaciers. From nineteen century urbanization started, India is a developing country, as a developing country we need to improve/develop infrastructure, transportation and industrialization.

Ganga and Yamuna are the most important rivers originating from the glaciers of Uttarakhand. Uttarakhand region has a past history of heavy rainfall. In June 2013 a multi-day cloudburst centered on Uttarakhand, caused a devastating floods and landslides. It became country's worst natural disaster after the 2004 Tsunami. Prediction of the natural disaster is difficult. Lack of knowledge, improper planning and supervision of infrastructure, increases the severity of disaster. Figure1 shows the different damages occurred in Uttarakhand state in June 2013.

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Modelling of Plain Cement Concrete Pavement Patch Using ANSYS Workbench

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Abstract: The concrete roads have many advantages as compared to the flexible pavement. The durability, Strength and life are the main characteristics of good road. In the developing countries like India, the flexible roads are deteriorated very easily due to heavy loads of the vehicles. It is important to construct the durable roads and there should not be necessity of maintenance after short span. Therefore it is also important to know the stresses and strains coming out on the concrete pavement due to different loads of vehicles. The present paper has consider these aspects using analysis in finite element software i.e. ANSYS workbench. The present paper has describes the deformation, maximum stress and maximum strain. From the results it has been shown that the maximum stress has occurred at the top surface of the model.

Keywords: Concrete Pavement, ANSYS, Stress, Strain and Deformation

1. Introduction

Now days the cement concrete pavement is becoming popular as it has many advantages as compared to bituminous or asphalt pavement. The study of the concrete pavement to minimize the stresses and cracks occurred due to moving or dynamic loads are the main issue of this research work.

Almost all rigid pavements are made up of Portland Cement Concrete (PCC), typically consisting of PCC surface course constructed over either the subgrade or base course over subgrade. The PCC course is the stiffest and provides majority of strength to the pavement. The base course and the subgrade provide drainage and frost protection to the pavement and also contribute to the strength. Rigid pavements can be classified into three major categories:

a) Jointed plain concrete pavement (JPCP): In JPCP, the pavement is divided into individual slabs separated by contraction joints using dowels (for load transfer) and tie bars to connect adjacent slabs. This is the most common type of rigid pavement.

b) Jointed reinforced concrete pavement (JRCP): This type of pavement is similar to JPCP except that these slabs are much longer and are reinforced to withstand expansion and contraction due to temperature and moisture. The JRCP type is associated with long term performance problems and is not commonly used in the US.

c) Continuously reinforced concrete pavement (CRCP): In this type of rigid pavement the slabs are reinforced and continuous without any joints except construction joints.

2. Methodology

The finite element software i.e. ANSYS is the software in which analysis of concrete pavement is carried out. The following table shows the required data to be considered for the analysis.

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RESEARCH PAPER OPEN ACCESS

Review on Analysis and Design of RCC Shear Walls with and Without Openings

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ABSTRACT
Shear wall is a structural element which provides stability to structure from lateral loads like wind load and seismic loads. The stiffness and strength of wall may decreased by the reduction in the concrete area and the discontinuity of the reinforcement due to opening. To know the responses of providing openings and the behavior of shear wall without openings is the aim of the given study. Hence, it is necessary to demonstrate work on the analysis, design and post effects of shear walls when seismic forces are applied. In this paper, a review is taken out over the analysis and design of RCC shear walls with and without openings to study more detail analytical results and conclusions.
Keywords: Analysis, ETABs, High Rise, Openings, RCC Shear Wall, Seismic Performance

I. INTRODUCTION

This study investigates the analytical results and designing provisions for the shear walls with and without openings, obtained from available literature. In the seismic design of buildings, reinforced concrete structural walls or shear walls, act as major earthquake resisting members. Structural walls provide an efficient bracing system and offer great potential for lateral load resistance. The properties of these seismic shear walls dominate the response of the buildings, and therefore, it is important to evaluate the seismic response of the walls appropriately. Shear walls are commonly used in reinforced concrete construction to resist the shear force induced by earthquake. The size and location of opening may play a significant role in the response of shear walls. Though it is a well known fact that size, of openings affects the structural response of shear walls significantly, there is no clear consensus on the behavior of shear walls under different opening locations. Shear walls situated in advantageous positions in the building, they can form an efficient lateral force resisting system.

As shown in the Fig. 1(a) and Fig. 1(b), shear walls with and without openings are placed around the periphery of plan of structure. The given study also focuses for the results obtained in an analytical and designing manner, if the combination of shear walls with and without openings Fig.1(c) is established in a single structure.

Fig.1(a): Elevation of shear wall with opeings in high rise structure.

Fig.1(b): Elevation of shear wall without opeings in high rise structure.

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MAT JOURNALS

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Volume 2 Issue 1

Cracking Dynamic Response of Concrete Pavement: A Review

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Abstract

Now a days the cement concrete pavement construction in India is becoming popular. The Indian government is also very much interested to construct a durable road. The flexible pavement is now replaced by cement concrete pavement in many areas. Therefore the proper assessment and analysis of this type of roads is very essential. Especially the research should be carried out on the assessment of road for moving vehicles. The moving loads should be properly studied. In the present work the different research work carried out to study the behavior the concrete pavement under moving / dynamic loads.

Keywords: *concrete , dynamic, flexible, construction*

INTRODUCTION

Now a days the cement concrete pavement is becoming popular as it has many advantages as compared to bituminous or asphalt pavement. The study of the concrete pavement to minimize the stresses and cracks occurred due to moving or dynamic loads are the main issue of this research work.

Almost all rigid pavements are made up of Portland Cement Concrete (PCC), typically consisting of PCC surface course constructed over either the subgrade or base course over subgrade. The PCC course is the stiffest and provides majority of strength to the pavement. The base course and the subgrade provide drainage and frost protection to the pavement and also contribute to the strength. Rigid pavements can be classified into three major categories:

a) **Jointed plain concrete pavement (JPCP):** In JPCP, the pavement is divided into individual slabs separated by contraction joints using dowels (for load transfer) and tie bars to connect adjacent slabs. This is the most common type of rigid pavement.

- **Jointed Plain Concrete Pavement (JPCP)**

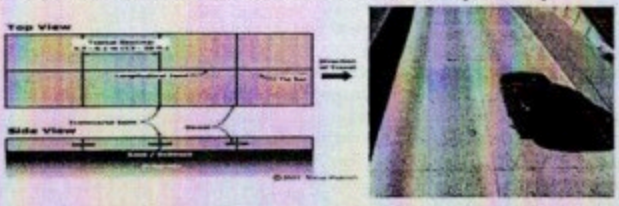

Fig.1: *Jointed plain concrete pavement (JPCP)*

2-12-18 ✓

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Journal of Ceramics and Concrete Sciences
Volume 2 Issue 1

Cement Grouted Macadam : A Review

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Abstract

The new pavement construction is the need of an hour in all over the world and it can be seen through various researches which is being carried out. The present work consists of a surface course which consists of semi-flexible material. This provides advantages to other pavement like concrete pavement and conventional bituminous or asphalt pavement. Such type of pavement is good resistant to percolation of water to the foundation as the surface layer becomes impermeable. Such type of pavement is called as grouted macadam. This macadam should be properly studied in order to use it for economical pavement construction. It was observed by the researcher that Stiffness is mostly related to the volume of bitumen used in grouted macadams, increasing with a reduction of the bitumen volume. Fatigue performance of grouted macadams is not affected by small variations in the binder content.

Keywords: *flexible, rigid, low volume roads, grout macadam and bitumen*

INTRODUCTION

The flexible pavement includes the construction by the materials like asphalt / bitumen while the rigid pavement construction consists of cement concrete with / without reinforcement. The flexible pavement is less costly as compared to the rigid pavement. Therefore the aim of the present work is to find out the middle path between the flexible pavement and rigid pavement. The introduction part consists of various methods adopted by the researchers to construct the grouted macadam.

The design of flexible and flexible composite pavements has traditionally been carried out by using design charts whereby the thickness of each layer is obtained as a function of the design traffic. Furthermore, this approach has recently been used in a revision of the design methodology in order to improve the pavement design principles to respond to the evolution of traffic characteristics. Thus, following the same principles, several design charts should be developed for pavements incorporating grouted macadam, which show enhanced properties when compared with conventional asphalt mixtures [1].

It has been observed that the soil moisture is a critical link between the hydrologic cycle and the energy budget of land surfaces. Therefore, to study the soil moisture is useful in many disciplines including civil engineering, water resources, meteorology and soil science. Temporary soil moisture variability of the surface can be a function of spatial parameter such as land-slope. The topography, soil type, vegetation, and land use are the parameters to control the soil moisture. To characterize the surface soil moisture there are different techniques such as small-scale techniques, field-scale techniques and large-scale techniques [2].

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MANTECH Publications

International Journal of Advance Civil Engineering and Technology
Volume 2 Issue 1

Use of ANSYS workbench for modeling Concrete road patch

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Abstract

It is important to construct the durable roads and there should not be necessity of maintenance after short span. The concrete roads have many advantages as compared to the flexible pavement. The durability, Strength and life are the main characteristics of good road. In the developing countries like India, the flexible roads are deteriorated very easily due to heavy loads of the vehicles. Therefore it is also important to know the stresses and strains coming out on the concrete pavement due to different loads of vehicles. The present paper has describes the deformation, maximum stress and maximum strain. The present paper has consider these aspects using analysis in finite element software i.e. ANSYS workbench.

Keywords: *Concrete road, ANSYS, stress, strain and deformation*

INTRODUCTION

The flexible pavement includes the construction by the materials like asphalt / bitumen while the rigid pavement construction consists of cement concrete with / without reinforcement. The flexible pavement is less costly as compared to the rigid pavement. Therefore the aim of the present work is to find out the middle path between the flexible pavement and rigid pavement. The introduction part consists of various methods adopted by the researchers to construct the grouted macadam.

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Research Article

Volume 7 Issue No.8

Comparative Study of Resource Management for Pre-Engineered and Conventional Industrial Building

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Abstract:
In this paper 'comparative study of resource management of pre-engineering industrial building and conventional industrial building.' Pre Engineered Buildings (PEB) fulfils this requirement along with reduced time and cost as compared to conventional structures. In this thesis the Pre-engineering Industrial shed the SATIJI steel industry in Buldhana is consulted. The structural designer Mr. Vikram Maldhure has given the design for PEB. It was very useful to me for study of resource management for pre-engineering and conventional industrial building. Design is used to calculate quantity of steel required for Conventional as well as Pre-engineering industrial shed. In this thesis focus on resource management required for both industries by using that basis we can reduce time and we can easily understand how to manage resources.

Keywords: Pre-Engineered-Buildings; conventional steel building. Staad Pro, building cost, comparison, MSP, Resource Management

I. INTRODUCTION

India has the second fastest growing economy in the world and a lot of it is attributed to its construction industry which figures just next to agriculture in its economic contribution to the nation. In its steadfast development, the construction industry has discovered, invented and developed a number of technologies, systems and products, one of them being the concept of Pre-engineered Buildings (PEBs). As opposed to being on-site fabricated, PEBs are delivered as a complete finished product to the site from a single supplier with a basic structural steel framework with attached factory finished cladding and roofing components. The structure is erected on the site by bolting the various building components together as per specifications. Pre-Engineered Buildings (PEB) is the future for India. Most of the Indian business community is just started to realize the benefits of PEB's. Where you have been building with concrete for as long as anyone can remember, it is difficult to change. However India's most progressive companies are seeing the benefits of PEB's. The Pre-engineered Building is the combination of pre-casted and pre-fabricated structures. These are generally ideal for offices, houses, showrooms, shop fronts etc. Long span, Column free structures are the most essential in any type of industrial structures and Pre Engineered Buildings (PEB) fulfil this requirement along with reduced time and cost as compared to conventional structures. This methodology is versatile not only due to its quality pre- designing and prefabrication, but also due to its light weight and economical construction. Where you have been building with concrete for as long as anyone can remember, it is difficult to change. However India's most progressive companies are seeing the benefits of PEB's.

II. NEED OF STUDY

Steel industry is growing rapidly in almost all the parts of the world. The use of steel structures is not only economical but also eco friendly at the time when there is a threat of global warming. Here, "economical" word is stated considering time and cost. Time being the most important aspect, steel structures (Pre fabricated) is built in very short period and one such example is Pre Engineered Buildings (PEB). Pre Engineered Buildings have bolted connections and hence can also be reused after dismantling. Thus, Pre Engineered buildings can be shifted and/or expanded as per the requirements in future. In this report, a comparison will be made between Pre Engineered buildings and conventional steel structures. One of the great advantages of cold-formed steel (CFS) is the immense flexibility that the material affords in forming cross-sections. This flexibility would seem to readily lend itself to optimization of member cross-section shapes. Cold formed sections also having the great flexibility of cross-sectional profiles and sizes available to structural steel designers. Whereas, the low strength-to- weight ratio of hot rolled steel members leads to increase in overall load on structure as compared with cold-formed steel sections which is having high strength-to-weight ratio. In Industrial building structures, the walls can be formed of steel columns with cladding which may be of profiled or plain sheets, GI sheets, precast concrete, or masonry. The wall must be adequately strong to resist the lateral force due to wind or earthquake.

III. AIM AND OBJECTIVES

In this study comparative study of resource management like labour material and cost of pre-engineering industrial building and conventional industrial building. Pre Engineered Buildings (PEB) fulfils this requirement along with reduced time and cost as compared to conventional structures.

- To study design of pre-engineering industrial building.
- To study design of conventional industrial building.
- To analysis resource management for conventional industrial building.

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Research Article

Volume 8 Issue No.11

Causes of Delays in Construction Projects

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Abstract:
The Indian construction project has experienced significant delays. The construction industry is large, volatile and requires high investment. Delays occur in almost all construction projects, and the importance of these delays varies widely from project to project. During construction, the delay may be defined as exceeding the completion date specified in the contract or exceeding the date on which the parties agreed to the delivery of the project. Delay means loss of revenue due to lack of production facilities and rental space, as well as dependency on current facilities. Project delays are directly related to the total construction costs. The delay can only be minimized if the cause is identified. The purpose of this paper is to examine ways to minimize the cause of build delays. Project delays include several factors such as missing funds, changes in the drawings, lack of effective communication and inadequate project management.

Keywords: causes of delays, effects of delays, construction project

I. INTRODUCTION

The construction industry is one of the most important economic sectors that play an important role in economic development. However, many projects had significant delays that exceeded the initial time and cost estimates. Construction delay is applied in terms of time, cost, quality, and safety as the success of the project.

The construction industry is large, volatile and requires high investment. Road construction is an important element of the construction industry for the economies of developing countries. This means that much of the national budget for infrastructure development is linked to road construction projects. The main reason for the cost increase in the road construction project is inflation and pressure from local governments. On the other hand, there are delays in payment, financial processes and difficulties of contractors and customers, contract changes, economic problems, material procurement, drafting changes, staff shortages, equipment deficiencies, lack of oversight, design flaws, inappropriate site customization. Labor disputes and strikes were the main causes of the delay in planning road construction projects.

In construction, the delay can be defined as either timeout over the date beyond which it has been agreed for the delivery of the project stakeholder through the set at contract end date. It is a project that overcomes the planned schedule and is regarded as a common problem of construction projects. It means production and rentable area attributable to the owner of the delay or loss of income due to lack of existing plant function. In some cases, it means that the delay is due to high overhead costs associated with long working hours, high material costs due to inflation and labor costs for contractors. Timely completion of a project is an indicator of efficiency, but the construction process is subject to many variables and unpredictable factors arising from many sources. These sources include involvement of parties' performance, resource availability, environmental conditions, and contractual relationships with other parties.

II. OBJECTIVE OF STUDY

There are many ways to complete the project on the current site in a timely manner, but delays are unavoidable and ultimately affect the efficiency of the project. There has probably been a lot of research to minimize the delayed discovery and the negative impact of project delays. Nevertheless, there are many projects that delay planning and suffer heavy losses. Construction is constantly changing the challenging and dynamic industry. This research aims to identify the main causes of the delay. To reach the goal, it is identified as follows:

- Identify delay sources from construction projects.
- Investigation of the effects of delays in construction projects.
- Analysis of the live project data collection regarding the activity delay.
- Discuss and make suggestions to minimize the impact of construction delay

III. LITERATURE REVIEW

1. **Prakash Rao and Joseph CamronCulas (2014)**concludes that poor project planning and planning, delays in on-site transfers and delays in the work of subcontractors are the three most critical factors that the contractor causes, which has an impact on project performance, followed by delays on delivery and delivery. Factors that occurred too late when changing and approving design documents. The survey found that 51% of the delays were caused by customers, followed by 36% of contractors and 13% of consultants. Research from ARC File Solutions (2015) shows that file management issues are the main cause of delays and timeouts on construction projects.
2. **Ghulam Abbas Niazai and KassimGidado (2013)** reported that contracts under 12 months contributed to the delay. They concluded that there were two reasons for the delay between all parties of "security" and "corruption". Inadequacy of security is the most difficult task for implementation of construction project. It led to project delay and increased cost. Corruption has a serious impact on construction delay, which poses asserious threat to the improvement of the construction industry.

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Software Cost Estimation Using Data Mining: Review

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Abstract— Software cost estimation has become a great matter of concerns in the software industry. Accurate cost estimation in software development is very important for every kind of project. If the project is not estimated in the proper way it result the cost of the project very high extending the original cost. This needs the estimation accurate. This paper reviews all the different approaches that are used for software cost estimation using data mining. The different approaches help us to identify the challenges and scope present in software cost estimation using data mining.

Keywords— Software estimation, COCOMOII, Data mining. Software engineering.

I. Introduction

Software cost estimation is all about how long how many people are required to complete the software project. Project estimation starts at the proposal state and continues throughout the life time of the project. The estimation include size estimation, efforts estimation, & developing initial projects schedule and finally estimating overall cost of project .Accurate cost estimation is very important for every kind of project if the project is not estimated in proper way it result into high cost of project. This review paper will include the

II. Related Work

A. Software Cost Estimation

Observing from the last decades software project cost estimation in software engineering is an important subject .Software project usually does not fail during implementation and mostly the project failure is related to the planning and estimation phase. Author Dharmesh & Mahesh [1] have perform analysis of different ANN's and compared the result of various ANN models of effort estimation .Author Adiano & Oliveria [2] has compared SVR (support Vector Regression) and Radial Bias Feed forward Network for software cost estimation .Lefly & sheppord [3] had improve the software cost estimation on public data sets by applying genetic programming and had achieved a great successes. Author Barbara & Magne [4] in their paper had made a comparison between evidence based software engineering with evidence based medicine. Author Chen[5] had proposed the cost models should be data pruned by experimenting after data collection and before model building .Author A.F.Shete [6] had used genetic algorithms on COCOMO model for estimation of projects.Galocroth & Evans [7] had performed intensive search between 2100 internet sites and had evaluated 500 reasons for software failure. Author Magne & Sheppard [8] has identified 304 software cost estimation papers in 76 journals in their review and classified them according to research topic estimation approach research approach study

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A Review on Spam Email Detection Using Fuzzy C-Mean with Machine Learning

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[2]Professor, Dept. of CSE, PRMIT & R Badnera , Amravati, India

Abstract: Today, most Internet users use email to communicate electronically. They depend on the Internet to deliver their important emails safely and to the right recipients. However, the fast growth of Internet users and their use of email together with the exponential increase of unsolicited users sending spam have made the email system less reliable. An email can falsely be marked by a spam filter on its way to the recipient or even get buried among junk mail in the recipient's inbox. There are several intelligent anti-spam filters which use different methods to detect spam including and fuzzy logic systems. Fuzzy set is an effective technique for spam detection and email classification. The proposed system enables the user to have more control over the various categories of spam and allows for filter personalization. This proposed work applied fuzzy logic to classify spam. This work used a fuzzy inference system to classify spam mails. This work has a list of spam words and spammer's email addresses in the database. This method extracts features from the email which, this work compares them against a list of spam features stored in the database ranked with its values and categorize the words and addresses in accordance to the ranking. Fuzzy inference system finally classified the spam mails as least dangerous or moderate or most dangerous spam mail.

Keywords: Email, spam, fuzzy logic, filter.

1. Introduction

Nowadays email is becoming fastest and economical mode of communication. All the growing use of email has led to increased rate of spam emails. As it is information all the users rely on emails to communicate with the whole world. Business organization, individuals and all corporate industries are communicating with emails so that it is important part concerning with education, business and personal usage. Spam are nothing but the unsolicited bulk emails (UBE) and it's another part is unsolicited commercial email .These spam emails not only consume the user's time but also the energy to recognize the undesired messages. It is wasting the network bandwidth. Content Based Spam Filter: Content Based filter works on content of emails i.e., text, URLs, main headers like subject for classification purpose. It is the method used to filter spam. The emails include two parts such as Body of the message and Header. Header stores the information about message like from whom it is received, date and time of emails received, sender etc. Now emails ambiguous data is removed by preprocessing then text is extracted.

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Time Based Collaborative Recommendation System by us Techniques

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Abstract: Recommendation of appropriate product to the specific user is becoming the key to ensu commerce. Today, many E-commerce systems adopt various recommendation techniques, (abbreviated as CF)-based technique and Structural Balance Theory-based Recommendation (i.e., product item recommendation. Overall, the present CF recommendation and as per suggested SB target user owns similar friends (user-based CF) and Structural Balance Theory-based Recomme first look for the target user's dissimilar "enemy" (i.e., antonym of "friend"), and furthermore, we of E-commerce target user, according to "enemy's enemy is a friend" rule of Structural Balanc purchased and preferred by target user own one or more similar product items (item-based CF). He friends and enemies if we are not getting friends or enemies then. So to improve Recommender sy profile based collaborative Recommendation algorithm. In this algorithm, we will consider only positive reviews to evaluate products quality. Along with this, we propose a novel recommender his requirement about any product as input, and depending on that input we will recommend most to the customer's requirement and ratings given by other customers. Only recent ratings will be proposed system will meet personalized product item recommendation requirements in E-cor consideration to evaluate current product quality.

Keywords— *E-commerce, Time based collaborative recommendation, Product recommendati enemy, Big rating data, Structural Balance Theory.*

*****

1. INTRODUCTION

commerce companies [3-5
recommendation approaches

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Investigating Techniques for Searching Files in Distributed Systems: An Overview

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Abstract—***High Performance applications generates large amount of data. The large amount of data generated from computation leads to data been dispersed over the file system. Problems begin to exist when users need to locate these files for later use. For small amount of files this might not be an issue but as the number of files begins to grow as well as the increase in size of these files, it becomes difficult locating these files on the file system using ordinary methods. This paper focuses on study and investigation of searching techniques for files in Distributed Systems. Also analyses various distributed environments and existing searching approaches for distributed systems.***

Keywords— *Distributed systems, searching, distributed file systems, structured-per-to-peer network, hash table, binary-search-tree.*

I. INTRODUCTION

In Modern era, computations require powerful hardware. One way of gaining results faster is getting new hardware over and over again. Buying a supercomputer is, however, not a cheap solution and takes plenty of time to install software to these new supercomputers. Also there is a lot of overhead in maintaining them. Another way in achieving better system performance is using a distributed system. In a distributed system, several computers are connected together usually by LAN. Therefore the distributed system can be defined as:

"A distributed system is a collection of independent computers (nodes) that appears to its users as a single coherent system". [1]

Distributed file systems (DFS) are a part of distributed systems. DFS do not directly serve to data processing. They allow users to store and share data. They also allow users to work with these data as simply as if the data were stored on the user's own computer.

Over the past few years need of storing a huge amount of data has grown. Whether data are of multimedia types (e.g. images, audio, or video) or are produced by scientific computation, they should be stored for future reuse or for sharing among users. Users also need their data as quick as possible. Data files can be stored on a local file system or on a distributed file system. Local file system provides the data quickly but does not have enough capacity for storing a huge amount of the data. On

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Software Cost Estimation Using Data Mining: Review

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Abstract— Software cost estimation has become a great matter of concerns in the software industry. Accurate cost estimation in software development is very important for every kind of project. If the project is not estimated in the proper way it result the cost of the project very high extending the original cost. This needs the estimation accurate. This paper reviews all the different approaches that are used for software cost estimation using data mining. The different approaches help us to identify the challenges and scope present in software cost estimation using data mining.

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Time Based Collaborative Recommendation System by us Techniques

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Abstract: Recommendation of appropriate product to the specific user is becoming the key to ensu commerce. Today, many E-commerce systems adopt various recommendation techniques, (abbreviated as CF)-based technique and Structural Balance Theory-based Recommendation (i.e., product item recommendation. Overall, the present CF recommendation and as per suggested SB target user owns similar friends (user-based CF) and Structural Balance Theory-based Recomme first look for the target user's dissimilar "enemy" (i.e., antonym of "friend"), and furthermore, we of E-commerce target user, according to "enemy's enemy is a friend" rule of Structural Balanc purchased and preferred by target user own one or more similar product items (item-based CF). He friends and enemies if we are not getting friends or enemies then. So to improve Recommender sy profile based collaborative Recommendation algorithm. In this algorithm, we will consider only positive reviews to evaluate products quality. Along with this, we propose a novel recommender his requirement about any product as input, and depending on that input we will recommend most to the customer's requirement and ratings given by other customers. Only recent ratings will be proposed system will meet personalized product item recommendation requirements in E-cor consideration to evaluate current product quality.

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RESEARCH ARTICLE

Prediction of Next Mobile Access Gateway (MAG) in Proxy Mobile Internet Protocol Version 6 (PMIPv6)

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Abstract: Proxy mobile IPv6 (PMIPv6) is a network based mobility management protocol. There are three entities Local Mobility Anchor (LMA) Mobile Access Gateway (MAG) and Authentication, Authorization, and Accounting server: (AAA) required for the proper functioning of PMIPv6. Many of researchers have worked on reducing handover delay by sending MN authentication information directly from current MAG to new MAG but

Review: Quick Response (QR) Code types and its Characteristics

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Abstract— QR code is in the form of matrix barcode which was introduced by Denso Wave for the automotive industry. Due to the automotive industries fast readability and more storage capacity, the QR Code system has become admired outside as compare to standard UPC barcodes. This paper take account of QR codes basics, its real time application in day to day life and research areas associated. With the technology of mobile phones constantly emerging, especially in the area of mobile internet access, QR codes seem to be an adequate tool to quickly and efficiently converse URLs to users. QR code permits offline media such as newspapers, business cards, public transport vehicles, magazines, signs and any other medium that can embrace the print of a QR code to be used as carriers for advertisements for online products. Due to QR code structural flexibility, it being so versatile that it leads to so many different fields for research such as increasing data capacity and also security applications. For better recognition of the QR code image, several experiments have been done which includes scratch removal techniques. This paper is an attempt to highlight QR codes and its characteristics.

Key words: Quick Response Code, UPC Barcode, Kanji & Kana Capacity

I. INTRODUCTION

Even if you don't know what a "QR code" is, you've probably seen them. They may become visible everywhere like in any ads, catalogs, any products, business cards or any broachers. They mostly appear in black and white color. [2] QR code stands for Quick response code and they look like UPC barcodes usually seen on product packaging. QR codes is superior than UPC barcodes because it stores only about 12 numbers or letters while QR code stores about 4,000 numbers or letters. Now-a-days mobile phone became the most important and most useful product for everyone and its affordable to almost everyone. Before mobile phones only some people or business person were able use the technologies for reading and processing the code. Now most of the mobile phones provides the by default facility of scanning codes. Scanning the code became very easy for everyone as it is made in user friendly format.

QR code is also in user readable format as it stores the letters or number. It accepts any kind of information. The text does not need to be a website address. For example, it can also be a representation of the information on your business card which may be a personal data. When phone scans the code, the software on the phone interprets the text and decides what to do. If it is personal information from a business card, it may ask you if you for confirmation weather you want to add it to your address book. If it is a website address, the software on your phone will usually open the address on your phone's web browser. QR code is very popular now-a-days for its greater storage than standard UPC barcodes. This code consists of white background with black module set in a square structure. The information which is encoded using this method may use different types of data which can be in the form numeric, alphanumeric, byte or bits or kanji.

II. CHARACTERISTICS OF QR CODE

A. High Ability Encoding Data

QR Code is able to handle several hundred times more information than the bar codes which are capable of storing nearly 20 digit. QR code provides better storage area. A single symbol of QR code includes up to 7089 characters which encodes the original data and that data can be in the form numeric and alphabetic characters, Kanji, Kana, symbols, binary.[3]

Fig. 1: Example of high capacity encoding data in QR code

B. Small Print out Size:

QR code consists of information stored in both vertical and horizontal format. QR code is able to encode same amount data almost one-tenth the space of conventional barcode. so QR codes very less amount of space to store data. For example –Micro QR code [3]

Fig. 2: Example of small print out size of QR code

C. Kanji & Kana Capacity:

QR codes are developed in Japan so QR code is capable of storing a data which consist of kanji character set. And one character of kanji and kana is encoded in 13 bits which stores more than 20% data compared to other symbologies.

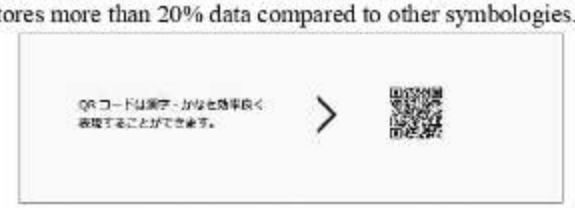

Fig. 3: Example of kanji and kana capacity in QR code

D. Dirt & Damage Resistant:

QR Code has error correction skill. If the symbol or any data is dirty or damaged then that data can be restored up to 30% of code word. So there is no complete loss of data. In QR

A Review Paper on Online Restaurant Management System

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***Abstract*--** The system is implemented to reduce the manual work and enhances the accuracy of work in a restaurant. This system manages and maintains the record of customers and their order online. This Android App has been made in a user friendly interface. So that Customer can add and delete the food items easily. The menu card of different restaurant consists of various food varieties available in the restaurant. Through the place ordering menu, the customer can simply click and order the food. The messaging module tells the supplier to supply the particular food. Also tracking module track the order. The billing system prepares the bill according to the delivered food. This system entirely reduces the unnecessary time. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time.

***Keywords*—Restaurant Management, Recommendation, Tablet, Menu, Intelligent, Android application.**

I. INTRODUCTION

Over the years, technology has tremendously revolutionized the restaurant industry. Much of the innovation has been with point-of-sale (POS) operations. There is a famous saying that "People eat with their eyes". The e-Menu provides additional information about menu items and drinks than a traditional paper menu. The simplicity and ease of access of a menu are the main things that facilitate ordering food in a restaurant.

The service goes quicker. Restaurants can build their e-reputation and customer community in live. The restaurant menu has evolved from its humble beginnings on carte chalkboards and imageless print to today's detailed, colorful displays. With the emergence of digital tablets and user-friendly touch screen technology menus can move to a whole new surface. With this electronic menu, orders can be taken correctly the first time. There is no need to run back and forth to a distant terminal, because the terminal is always with the server. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time. The Recommendation algorithm suggests dishes to the patrons based on previous orders. It makes it easier for the customer to build his/her order and also view the most popular dishes. Moreover, various dimension filters can be used according to individual preferences e.g. Price, taste, quantity, etc

II. OBJECTIVES

- To develop android application for restaurant ordering system and provides facility to update the menu.
- To develop a software at kitchen and cashier to receive order from server.
- To establish network for kitchen, cashier and android device and print the bill at customer side.
- Customer should be able to enter the feedback about the service and the food served by e-restaurant android application.

Light Weight Defense Mechanism Against Camera Based Attacks

Supriya Deshpande, Shirish Pattalwar, Poonam Lohiya

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Abstract

A number of android security and privacy vulnerabilities have been exposed in past several years. However, the mobile malware and privacy leakage remain a big threat to mobile phone security and privacy. It has been observed that phone camera would become a traitor in such attacks by capturing photos or videos secretly. Secret photography is not only immoral but also illegal due to invasion of privacy. Phone users themselves could also become victims and if the phone camera is exploited by malicious spy camera app, it may cause serious security and privacy problems. Most of the existing mobile antivirus apps are unable to monitor such camera based attacks. Hence, we demonstrate two camera based attacks through our proposal namely, Remote controlled real time monitoring Attack like Screen unlocking Attack, SMS Attack. We also propose a light weight defense scheme as a countermeasure for the camera attacks that can protect android phones against harmful spy Camera attacks.

"INTELLIGENT SKIPPING ROPE FOR TRACKING HEALTH RECORD"

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ABSTRACT: *Intelligent Skipping Rope is an advance stage of skipping rope that will be use by the people, athletes. Intelligent Skipping Rope which can measure our fat burn, heart beats, number of jumps. It has in build sensor for performing the various operation specified earlier. There will be a screen situated at one of the terminal of rope, where it will display the current result of the workout. Intelligent Skipping Rope is a great invention for the training purpose. Sports training is intended to promote health and improve skills of the sport.*

Keywords: Skipping rope, sensor, pulmonary vein calculator, display screen, LED light.

1. INTRODUCTION

Now a day, human health is a wide issue over the world back. India rank 2nd place in the world in case of population. There is lots of health issue in India. Healthy body can be maintaining with physical exercise in which skipping rope is very traditional exercise. Some prefer jogging, gym. Gyms are now very advanced with the help of technology which indirectly increases monthly charges of it. A common man can't afford fees of gym for his healthy life. So they stop exercise and give invitation for various problems. But every problem has a solution.

Skipping rope is a cardio device which will be affordable to every common man. They can use it without a trainer at house which indirectly reduces expenditure. It can be use anywhere at any place at any time in the world. Training or exercise promotes a healthy and improves the skills of the sport. Now a day's anything is possible with the help of technology. With use of it and adding of my own modification I tried to design a new stage of skipping rope which is called as sensors skipping rope. It will have an in build sensors for various operations. It may be called as a technical trainer to a user. It will display the calories burnt in exercise, heart bit rate, pulse rate, counts of the skip made by it.

2. IN COMPARISON WITH PREVIOUS SYSTEMS

In olden days there was skipping rope made of cotton thread with wooden handle. After few years many changes made in rope, variety of ropes came in market, and as science is developing day by day many experiment were done on skipping rope, such as jump rope using kinetic energy , they have concentrated on the rope skipping exercise of using the equipment without a rope which is called "air jump rope". They have developed a system for recognizing the rotational motion of the rope skipping exercise. The system analyses a motion of jumping rope using the moving image processing using the IR camera of Microsoft Kinect. By attaching a polystyrene sphere to air jump rope, the system recognizes the motion of a jump rope exercise the Kinect sensor.

Another experiment was Digital Skipping Rope - Calorie and Jump Counter. The Digital Skipping Rope tracks both your jumps taken and calories burned. The timer can be programmed to countdown a set workout time or track your elapsed time.

As compare to these above systems the Intelligent Skipping Rope is advance stage of skipping rope with more features, it will contain sensor which will count heart rate, fat burnt in calories, and set of jump count, timer which count workout time. Display screen for displaying workout results.

3. WORKING

Software Requirements

Platform - WINDOWS XP
Software - AVR

Hardware Requirements (Minimum):

Processor - 8051ic

RAM - 512kb

Keyboard - Standard PS/2 Keyboard

Mouse - Standard Pointing Device

Display screen

Sensor

An Evolutionary Approach for Image Extraction in Artificial Intelligence

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Abstract— An artificial neural network advance was evaluated in multispectral image processing applications, together with common land wrap arrangement and land utilize characteristic classification In current years make use of image processing techniques for texture analysis of machined surface is in advance importance in the ground of mechanized An intelligent analysis system for electrocardiogram strength images by means of artificial neural network. Features are extracted from several preprocess such as wavelet disintegration, border recognition gray stage histogram, Fast Fourier change, and Mean-variance. Artificial intelligence are valuable for solving several biomedical problems and by means of a computer based prepared hardware software application for considerate images, researchers and clinicians can develop their capability to study, analyze, observe, recognize and pleasure medical disorders. as a result the most important idea following this investigate is to focus on understanding the artificial intelligence, its concepts and a variety of models presented for the segmentation(or classification) of medical images, its applications, recompense and disadvantages and consequences and more. Face recognition involves artificial intelligence, pattern recognition, image processing, psychology and added fields. It is an important research topic in individual interface.

Key words: Artificial Intelligence, Image Segmentation, Object Detection

I. Introduction

The Image Understanding by means of Artificial Intelligence Technology Independent Research and Development. As users of geographic data enhanced understanding the importance of remote descriptions, the command for mechanized image processing and feature extraction capabilities increases. Artificial neural network and enhanced binary gravitational search algorithm are utilized to distinguish things in images. Watershed algorithm is damaged to subdivision descriptions and remove the objects. Color, texture and geometric features are extracted from every object. IBGSA is used as a feature selection method to find the best subset of features for classifying the desired objects. The purpose of with IBGSA is to reduce complexity by selecting relevant features. At last, special features are used in the ANN for detecting things. Experimental consequences on detecting hand tools demonstrate that the planned technique can discover relevant features for object detection. Artificial intelligence can be used to program the understanding support and conclusion rules implemented by specialized image interpreters. several of the recurring decisions through in image understanding may be delegated to artificial intelligence based mechanization. The additional automation will increase the speed, precision, accuracy and adaptability of the image interpretations. The resulting data will be cheaper in terms of time, money, and necessary expertise. This report contains three sections. The subsequent segment discusses the advance we have taken in automating the image considerate task. This includes a definite conversation of critical areas in the image considerate charge and how they may be programmed ,subsequently segment reports the most dislike explore consequences. The results are separated based on the serious areas addressed. Data exclusion is the computer-assisted process of digging throughout and analyzing vast sets of information and then extracting the consequence of the data. The various application areas of image mining are processor vision, representation processing, picture retrieval, figures mining, machine learning, database, artificial intelligence, feature extraction, thing detection, expression recognition and image compression . Face detection is the problem of determining whether a sub-window of an image contains a face and its important applications are face processing (i.e., face expression and gesture recognition). All these applications of face detection require a preprocessing step for obtaining an object. The great challenge in face detection problem is the large number of factors that govern the problem space. The long list of these factors consist of the pose, orientation, luminance conditions, facial expressions, occlusion, facial sizes found in the image.

A. Content Based Image Retrieval Feature Extraction With Machine Learning

Content-Based image recovery is a process of image recovery. It uses the image features of an image such as color, character and outside in order to searching the user based uncertainty of images from the huge databases. CBIR depends on feature extraction of an image are the diagrammatical features as well as these features are removed repeatedly i.e not including human interface. In SIFT feature extraction algorithm is used for feature mining, which necessarily gives us the key point in an image. SIFT image feature algorithm present a set of image features that are not significant so exercise the optimization procedure BFOA (Bacteria foraging optimization algorithm) to reduce the difficulty, charge energy and Time consumptions. Then for correspondence make certain a deep neural network is qualified. The justification and testing phases are done accordingly which guide to a recovered presentation as evaluated to previously done techniques. The correctness charge are comparatively exceptional in the planned systems.

B. Object Detection in Images Using Artificial Neural Network and Improved Binary Gravitational Search Algorithm

In artificial neural network (ANN) has improved binary gravitational search algorithm (IBGSA),which are exploited to distinguish things in images. Watershed algorithm is used to subdivision images and also used to take out the things

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A Non-invasive Way to Determine Blood Type Based on Image Processing

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Abstract - *Fast and accurate identification of blood types is very important during emergency situation before administering a blood transfusion. At present the method based on image processing technology to determine blood type has been widely used in the automated blood analyzer. In this paper, the proposed idea is a non-invasive method for the identification of blood group of a patient without breaking the skin of patient. The technique embeds Light scattering method as light passes through the capillaries for dynamically classifying blood cells based on specific antigens shape present on the Red Blood Cell (RBC) surface. Camera is used to capture the scattered light pattern, scattered from the red blood cells to determine the blood type without drawing the blood samples from the body of patient.*

***Key Words*: Blood types, Camera, Laser Light, Light scattering, Image Processing, Pattern matching, Blood Transfusion.**

1. INTRODUCTION

Blood Grouping system is basically used to determine the blood group that the person possesses. Human by nature has any one of the Blood group namely A, B, AB and O. The blood group 'AB' is called the Universal acceptor and the person with the 'O' group are called Universal donor. Blood Detection is most important and essential activity to ensure blood transfusion safety. In the case of emergency blood transfusion, rapid identification of the type of blood is essential, which is directly related to the life of the patient.

According to ABO and Rh blood grouping systems, a person can belong to either of following eight blood groups: A Rh+, A Rh-, B Rh+, B Rh-, AB Rh+, AB Rh-, O Rh+ and O Rh-. To determine the blood type of patient, several techniques are available, such as, the plate test, tube, micro plate and Card ID [1], [3]. The plate test is widely used and suitable for emergencies allowing fast results. However, manual tests can feature the risk of human error associated with the procedure as well as with the reading and interpretation of results. Thus, though it gets rapid results with a good accuracy, it has the disadvantage of not being currently used in hospital laboratories [4], [5].

This manual blood grouping procedure and automated systems generate undesirable and unwanted drawbacks such as requires more time and non standardized accuracy since it depends on the operator's capabilities. Hence, it is necessary to develop a new non-invasive system for blood group identification [7].

Presently, an average of 200 to 300 blood samples is analyzed within 2 to 3 hours which can be carried out only by technician [2]. If the proposed system is used, the same task can be completed within a short period of time. One more advantage of this proposed system is of affordable cost.

2. BACKGROUND

Antigens are usually proteins and polysaccharides which are present on external surface of RBC having many epitopes of different structure. This is because the proteins are usually thousands of amino acids long and are composed of 20 different amino acids.

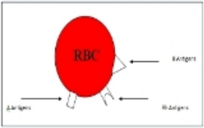

Fig -1: A red blood cell (RBC) with different antigens on the surface of its membrane.

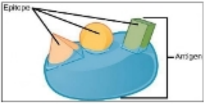

Fig -2: Epitopes is a part of an antigen molecule to which an antibody attaches itself - antigenic determinant

A Review Paper on Online Restaurant Management System

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***Abstract*— The** system is implemented to reduce the manual work and enhances the accuracy of work in a restaurant. This system manages and maintains the record of customers and their order online. This Android App has been made in a user friendly interface. So that Customer can add and delete the food items easily. The menu card of different restaurant consists of various food varieties available in the restaurant. Through the place ordering menu, the customer can simply click and order the food. The messaging module tells the supplier to supply the particular food. Also tracking module track the order. The billing system prepares the bill according to the delivered food. This system entirely reduces the unnecessary time. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time.

***Keywords*—Restaurant Management, Recommendation, Tablet, Menu, Intelligent, Android application.**

I. INTRODUCTION

Over the years, technology has tremendously revolutionized the restaurant industry. Much of the innovation has been with point-of-sale (POS) operations. There is a famous saying that "People eat with their eyes". The e-Menu provides additional information about menu items and drinks than a traditional paper menu. The simplicity and ease of access of a menu are the main things that facilitate ordering food in a restaurant.

The service goes quicker. Restaurants can build their e-reputation and customer community in live. The restaurant menu has evolved from its humble beginnings on cafe chalkboards and imageless print to today's detailed, colorful displays. With the emergence of digital tablets and user friendly touch screen technology menus can move to a whole new surface. With this electronic menu, orders can be taken correctly the first time. There is no need to run back and forth to a distant terminal, because the terminal is always with the server. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time. The Recommendation algorithm suggests dishes to the patrons based on previous orders. It makes it easier for the customer to build his/her order and also view the most popular dishes. Moreover, various dimension filters can be used according to individual preferences e.g Price, taste, quantity, etc

II. OBJECTIVES

- To develop android application for restaurant ordering system and provides facility to update the menu.
- To develop a software at kitchen and cashier to receive order from server.
- To establish network for kitchen, cashier and android device and print the bill at customer side.
- Customer should be able to enter the feedback about the service and the food served by e restaurant android application.

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Predictive analysis of product search

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ABSTRACT

Rapid increase in internet users along with growing power of online review sites and social media has given birth to Sentiment analysis or Opinion mining, which aims at determining what other people think and comment. Nowadays, several websites are available on which a variety of products are advertised and sold. Prior to making a purchase an online shopper typically browses through several similar products of different brands before reaching a final decision. This seemingly simple information retrieval task actually involves a lot of feature-wise comparison and decision making, especially since all manufacturers advertise similar features and competitive prices for most products. The proposed system presents a semi supervised approach for mining online user reviews to generate comparative feature-based statistical summaries that can guide a user in making an online purchase. In this system sentiment analysis of product reviews gives us not only positive and negative reviews but also gives neutral and constructive opinion where system can suggest some improvement about product also the result is represented in graphical and tabular method.

Our task is performed in three steps: (1) mining product features that have been commented on by customers; (2) identifying opinion sentences in each review and deciding whether each opinion sentence is positive or negative; (3) summarizing the results. This paper proposes several novel techniques to perform these tasks. Our experimental results using reviews of a number of products sold online demonstrate the effectiveness of the techniques.

Keywords: *Sentiment analysis, Feature-Orientation (FO) Table, Text Summarizing, Data Mining, Opinion Mining*

1. INTRODUCTION

The Internet offers an effective, global platform for E-commerce, communication, and opinion sharing. It has several blogs devoted to diverse topics like finance, politics, travel, education, sports, entertainment, news, history, environment, and so forth on which people frequently express their opinions in natural language. Mining through these terabytes of user review data is a challenging knowledge engineering task. However, automatic opinion mining has several useful applications. Hence, in recent years researchers have proposed approaches for mining user-expressed opinions from several domains such as movie reviews, political debates, restaurant food reviews, and product reviews, and so forth Generating user-query specific summaries is also an interesting application of opinion mining [1]. The main focus is efficient feature extraction, sentiment polarity classification, and comparative feature summary generation of online product reviews.

Nowadays, several websites are available on which a variety of products are advertised and sold. Prior to making a purchase an online shopper typically browses through several similar products of different brands before reaching a final decision. This

Voice Enabled Location Based Smart Reminder System

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Abstract— Android is platform launched by Google used to develop advanced smart mobile phone. Android provides the support for mobile map and location services through which we can trace the location. Android platform is free and open, providing an user friendly development kit which containing flexible map display and control functions. Google Maps API provides many utilities for adding individual content to the Google map and various web map applications can be explored based on Google Maps API.
Key words: Smart Reminder System

I. Introduction

Android is too much popular and it available freely to which developers is used to create compelling mobile applications and tablet application that take full advantage of all the handset devices has to offer. Android is completely open-source software. For example, an application can call upon any of the phone's core functionality such as making calls, using the camera or sending text messages, allowing developers to create richer and more adhesive experiences for users.

The development of Android is based on modified Linux Kernel. Furthermore, Android utilizes a custom virtual machine that was designed to optimize hardware resources and memory in a mobile handset environment. Android systems can be liberally extended to incorporate new cutting edge technologies as they emerge. The platform will continue to develop, as the enthusiastic group of developers work together to build innovative mobile gadget application, with unique releases of API along with each unique version.

Google Maps is a web mapping service application and technology provided by Google, that offers many map-based services such as satellite imagery, real time traffic conditions, street maps, topographic maps and hybrid images. It can also accomplish global location search, classified information access, queries regarding traffic information, driving direction route and even street scene 3-dimensional view and many more.

Android provides the facility to developer for create activities which include interactive Google Maps as part of the user interface, with complete access to the maps which the developer can control programmatically and annotate using Android's huge graphics library. Geo-coding is a feature provided by Google map that allows developers to translate between street addresses and latitude-longitude map coordinates.

This gives a measurable context for the locations and co-ordinates such as latitude and longitude used in services based on location and map-based Activities. To combine maps with locations, Android encompass an API for forward and reverse geo-coding that lets the user find map co-ordinates for an address, and the address of a position on map. Expeditious and efficient data storage and retrieval are essential for a device whose storage capacity is limited by its miniature nature.

Android platform provides a SQLite database which is lightweight relational database for each individual application. The Android applications can take benefit of this well managed relational database mechanism to store data secure and efficiently. It supports applications and services designed to run inconspicuous in the background.

Background services make it feasible to create these invisible application components which perform automatic processing without lacking direct user effort. Background implementation permit the applications to become event driven and to support regular updates, which is perfect for monitoring game scores, market prices, generating location-based alerts, or prioritizing and pre-screening incoming calls and SMS messages.

Every mobile approach with a built-in reminder widget which is used to set the reminders for a particular time interval. REOMAP is an application which alerts the user regarding the reminder that is set with the event and its location, when the user is within the proximity of the destination. Motivation In today's busy schedule people usually tend to miss out on important tasks, even though they are nearby the place.

This leads to much kind of issues which makes people's life miserable. There must be some means which make the work simple and easy. Marketing people who have to travel wide range of areas to accomplish their tasks find it difficult remember all the areas. People suffering with amnesia, which is the inability of a person to remember things for long period of time. In this system we are going to implement the system which will work for determination of the user location in which app will determine the location and perform determination using SQLite database. The system will stored the information in SQLite and in background continuously scan the location. So that it will help us for determining reminder.

II. Related Work

In the last few years, the smart phones (Android, Black berry and iPhone) have taken over the market of Nokia based Symbian Phones in India. And these smart phones come equipped with A-GPS functionality which provides the spatial coordinates of the user location.

A-GPS or AGPS is an acronym for Assisted Global Positioning System, improves the performance of standard GPS in devices connected to the wireless network. A-GPS enhances the location granularity of cell phones (and other connected devices) in two ways:

- By helping in searching a fewer "time to first fix" (TTFF). Assisted GPS procure and reserve information regarding the location of satellites through the cellular network hence the information does not require to be downloaded via satellite.

An Evolutionary Approach for Image Extraction in Artificial Intelligence

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***Keywords*—Restaurant Management, Recommendation, Tablet, Menu, Intelligent, Android application.**

I. INTRODUCTION

Over the years, technology has tremendously revolutionized the restaurant industry. Much of the innovation has been with point-of-sale (POS) operations. There is a famous saying that "People eat with their eyes". The e-Menu provides additional information about menu items and drinks than a traditional paper menu. The simplicity and ease of access of a menu are the main things that facilitate ordering food in a restaurant.

The service goes quicker. Restaurants can build their e-reputation and customer community in live. The restaurant menu has evolved from its humble beginnings on cafe chalkboards and imageless print to today's detailed, colorful displays. With the emergence of digital tablets and user friendly touch screen technology menus can move to a whole new surface. With this electronic menu, orders can be taken correctly the first time. There is no need to run back and forth to a distant terminal, because the terminal is always with the server. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time. The Recommendation algorithm suggests dishes to the patrons based on previous orders. It makes it easier for the customer to build his/her order and also view the most popular dishes. Moreover, various dimension filters can be used according to individual preferences e.g Price, taste, quantity, etc

II. OBJECTIVES

- To develop android application for restaurant ordering system and provides facility to update the menu.
- To develop a software at kitchen and cashier to receive order from server.
- To establish network for kitchen, cashier and android device and print the bill at customer side.
- Customer should be able to enter the feedback about the service and the food served by e restaurant android application.

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	A Study on Design and Implementation of Facial Recognition Application System
ne:	Prof. Pritika V. Mamankar, Prof. Sonika A. Chorey, Prof. Saleha I. Saudagar, Prof. Gayatri A. Jagnade
	Abstrac Face recognition systems gain flexibility and price potency whereas being integrated into a wireless network. We tend to describe implementation of biometric authentication application system victimization wireless devices. The biometric authentication system transm photographed by wireless terminals or good phones and recognizes/authenticates the faces. This technique is applied to many areas like in management, access management and attending management. The previous biometric authentication systems area unit largely supported th however our system uses mobile terminals or good phones. Keywords:-facial recognition, mobile terminal, smart phone, detection.
ticle:	Prof. Pritika V. Mamankar, Prof. Sonika A. Chorey, Prof. Saleha I. Saudagar, Prof. Gayatri A. Jagnade , " A Study on Design and Impleme Facial Recognition Application System " , International Journal of Emerging Trends & Technology in Computer Science (IJETTCS), Volu November - December 2016 , pp. 079-084 , ISSN 2278-6856.

Full Text [PDF] Home

Secure VANET from vampire attack using LEACH protocol

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Gayatri A. Jagnade ; Saleha I. Saudagar ; Sonika A. Chorey All Authors

Abstract:

In modern years we see some growth in technology and for better traffic control on road with these some technologies the moving vehicle can do the better communication in Ad-hoc network which developed a new kind of technology like Vehicular Ad-hoc Network(VANET). VANET provides wireless communication with vehicle to road side unit. VANET can perform the communication between V2V, V2I, I2I. VANET developed an advanced traffic signaling system. To avoid various attack on VANET it provides authentication to every nodes and block the unauthorized nodes. But when nodes are communicate each other on that time for secure data transmission of data clustering is required on that network which is arrange in periodic and dynamic form and selected one cluster head in which they has some features like routing depletion affects the path and resource depletion affects the power, bandwidth and energy

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A Review on Quality Determination and Grading of Tomatoes

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ABSTRACT: Nowadays the food quality is became a major issue as it directly affects health. For satisfaction of a customer desire, it is very important to have good quality of fruits. But in bulk it is very difficult to sort out good quality fruits. In this system considered tomatoes as fruits having different shape, size, colour and texture for finding quality and grading. Parameters that are consider for grading of fruits are shape, size, colour and texture, which vary from one product to another. Different types of algorithms are available to extract feature of fruit characters by capturing the fruit image. This work aimed to study different types of algorithms used for quality grading and sorting of fruit from the acquire image. In previous years several types of techniques are applied to analyse the good quality fruits. In this paper, such food quality and fruits grading techniques arereviewed.

KEYWORDS: Raspberry Pi 3, conveyor system, D.C. Motors, Camera, Image Acquisition, Contour.

I. INTRODUCTION

In general, the harvesting process is done on fruit such as tomatoes before they fully ripen. Decide the quality of tomato on shape, size, colour and texture grading by human eyes often leads to error due to visual stress is not accurate. A vision machine to replace human eyes can solve this weakness since a machine will not prompt errors due to stress. Human vision has limited ability is differentiating similar colors like pure green (100% green) with orange (90% orange), light red (60-90% red) with red color (>90% red). Human perception towards shape, size, colour and texture is subjective and varies among different peoples. A same fruit may appear as light green for first human but pure green for second human. This leads to inaccuracy of the judgment for tomato maturity. Color grading is a main step in this system design for processing of fruits that directly affects profit, because the products quality is mainly associated with their color. The existing color grading systems use a set of color separating parameters to determine the color quality. In this Project 100% Red , 100% Orange color tomatoes is fully mature and ready to consume and 100% Green , 50% Green color tomatoes is premature and ready to transport. The proposed automated classification and grading system is designed to combine five processes such as Image Acquisition, Masking, Contour, Image Enhancement, Color Detection. The entire system is designed over RASPBERRY PI software to inspect the shape, size, colour and texture of the fruit. Here grading can be categories into four ways Red, Orange, Green, turning to Green. Work in this paper considered tomatoes as fruits having different shape, size, colour and texture for finding quality and grading. In this paper simple and effective method will be used for evaluating maturity level of tomatoes.

II. LITERATURE SURVEY

Monika Jhuria, AshwaniKumar,RushikeshBorse [1] proposed image processing for smart Farming detection of decease and fruit grading. artificial neural network is used developed algorithms and they can be successfully detect and classify the tested disease and get better result for color and morphology they reported 90 % result as compared to texture . And also he developed mango grading system depending on weight using mathematical formula weight of mango calculated classify in to 5 different grades. Sunesha M.Shilpa N.A Soumya B [2] proposed effective automatic Grading system of apple based on SVM Classifier. The database contains 90 images. The proposed method efficiently

Prof. M.S. Joshi

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"STUDY OF VARIOUS GATE DIFFUSION INVERTER TECHNIQUES FOR MINIMUM POWER CONSUMPTION IN DIGITAL SYSTEM"

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ABSTRACT: *Now days In digital circuit design low power and small area are main issues of concern for VLSI designers. GDI Gate diffusion input technique of low power digital combinational design. This technique as compare to other currently used logic design styles, allows less power consumption and reduced propagation delay for low-power design of combinatorial digital circuits with minimum number of transistors. But this basic Gate Diffusion Input logic style suffers from some practical limitations like swing degradation, fabrication complexity in standard CMOS process and bulk connections. These limitations can be overcome by modified GDI and Full swing GDI techniques. In this Paper present the study of various gate diffusion input techniques in digital system and comparisons are made based on complementary CMOS and GDI design techniques.*

Keywords: basic Gate Diffusion Input, VLSI, power consumption, propagation delay

1. INTRODUCTION

With improvement in technology and increasing demand of battery operated mobile platforms like laptop, palmtop computers, cellular phones, wireless modems and portable multimedia applications etc has directed the VLSI designers to be more power aware.. The designer's main purpose in the field of digital circuit design is minimization of power consumption. These advancements are responsible for special design techniques for digital circuits distant from conventional CMOS design style. A large part of research has been performed to expand and advance conventional Complementary Metal Oxide Semiconductor (CMOS) techniques for the fabrication of ULTRA low power integrated circuits (ICs). The purpose of this study is to expand a faster, lower power, and reduced area substitute to standard CMOS logic circuits.

2. LITERATURE REVIEW

Meenu Pareek et. al.[1] design an emerging logic style of circuit using the gate diffusion input (GDI) technique. This technique is adopted to design a 32-bit ETA. The proposed design reduces area in terms of area the transistor count to a great extent as well as improves the delay and power performance. Simulation results have shown that proposed design achieves 38% improvement in the Power-Delay-Product when compared to the existing design.

Mrs. Sujatha Hiremath et. al. [2] presents a full adder circuit based on multiplexers, which are implemented using different techniques such as pass transistor, transmission gate and Gate Diffusion Input (GDI). The adder circuits implemented, simulated and comparison results are presented. Cadence tool set using 180 nm technologies is used to obtain the results.

B.N. Manjunatha Reddy et. al. [3] presents the GDI technique is used for low-power design of 8-bit multiplier. Reduction in power and area can be achieved using Booth encoding and Wallace tree technique since they generate partial products efficiently and are most suited for multiplication of signed numbers. Multiplier designed in GDI logic requires lesser number of devices as compared to CMOS logic [3]. Hence, GDI multiplier substantially dissipates lesser power as compared to CMOS design.

Arkadiy Morgenshtein et. al. [4] proposed a CMOS compatible Gate Diffusion Input (GDI) design technique. The GDI method enables the implementation of a wide range of complex logic functions using only two transistors. This method is suitable for the design of low-power logic gates, with a much smaller area than Static CMOS and existing PTL techniques. As opposite to our originally proposed GDI logic, the modified GDI logic is fully compatible for implementation in a standard CMOS process. Simulations of basic GDI gates under process and temperature corners in 40 nm CMOS process are shown and compared to similar CMOS gates. They show that while having the same delay, GDI gates achieve leakage and active power reduction of up to 70% and 50%, respectively.

Arkadiy Morgenshtein et. al. [5] analyzes the GDI technique by implementation of logic gates and comparing their properties with their analogues in CMOS and PTL. A variety

Ref - M.S Joshi

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"DESIGN OF 4-BIT ARITHMETIC AND LOGIC UNIT USING GATE DIFFUSION INVERTER TECHNIQUES FOR MINIMUM POWER CONSUMPTION IN DIGITAL SYSTEM"

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ABSTRACT: *Now days in digital circuit design low power and small area are main issues of concern for VLSI designers. GDI Gate diffusion inverter technique of low power digital combinational design. This technique as compare to other currently used logic design styles, allows less power consumption and reduced propagation delay for low-power design of combinatorial digital circuits with minimum number of transistors. But this basic Gate Diffusion Inverter logic style suffers from some practical limitations like with minimum number of transistors. But this basic Gate Diffusion Inverter logic style suffers from some practical limitations like high degradation, fabrication complexity in standard CMOS process and bulk connections. These limitations can be overcome by swing degradation, fabrication complexity in standard CMOS process and bulk connections. These limitations can be overcome by swing modified GDI and Full swing GDI techniques. In this Paper presents to design of 4 -bit Arithmetic and Logic Unit by taking the modified GDI and Full swing GDI techniques. In this Paper presents to design of 4 -bit Arithmetic and Logic Unit by taking the advantage of concept called Gate Diffusion Inverter Technique (GDI). Arithmetic and Logic Unit is the important block to design the advantage of concept called Gate Diffusion Inverter Technique (GDI). Arithmetic and Logic Unit is the important block to design the embedded and microprocessors. The Arithmetic Unit will do the arithmetic operations, as ADDITION and SUBSTRACTION. The embedded and microprocessors. The Arithmetic Unit will do the arithmetic operations, as ADDITION and SUBSTRACTION. The Logic unit will do the logic operations, as AND, OR, XOR and XNOR by using the concept GDI technique. Logic unit will do the logic operations, as AND, OR, XOR and XNOR by using the concept GDI technique.*

Keywords: basic Gate Diffusion Inverter, VLSI, power consumption, propagation delay

1. INTRODUCTION

With improvement in technology and increasing demand of battery operated mobile platforms like laptop, palmtop computers, cellular phones, wireless modems and portable multimedia applications etc has directed the VLSI designers to be more power aware. The designer's main purpose in the field of digital circuit design is minimization of power consumption. These advancements are responsible for special design techniques for digital circuits distant from conventional CMOS design style. A large part of research has been performed to expand and advance conventional Complementary Metal Oxide Semiconductor (CMOS) techniques for the fabrication of ULTRA low power integrated circuits (ICs). The purpose of this study is to expand a faster, lower power, and reduced area substitute to standard CMOS logic circuits.

In this Paper presents to design of 4 -bit Arithmetic and Logic Unit by taking the advantage of concept called Gate Diffusion Inverter Technique (GDI). Arithmetic and Logic Unit is the important block to design the embedded and microprocessors. The Arithmetic Unit will do the arithmetic operations, as ADDITION and SUBSTRACTION. The Logic unit will do the logic operations, as AND, OR, XOR and XNOR by using the concept GDI technique.

2. RELATED WORK

Meenu Pareek et. al.[1] design an emerging logic style of circuit using the gate diffusion input (GDI) technique. This technique is adopted to design a 32-bit ETA. The proposed design reduces area in terms of area the transistor count to a great extent as well as improves the delay and power performance. Simulation results have shown that proposed design achieves 38% improvement in the Power-Delay-Product when compared to the existing design.

Mrs. Sujatha Hiremath et. al. [2] presents a full adder circuit based on multiplexers, which are implemented using different techniques such as pass transistor, transmission gate and Gate Diffusion Input (GDI). The adder circuits implemented, simulated and comparison results are presented. Cadence tool set using 180 nm technology is used to obtain the results.

B.N. Manjunatha Reddy et. al. [3] presents the GDI technique is used for low-power design of 8-bit multiplier. Reduction in power and area can be achieved using Booth encoding and Wallace tree technique since they generate partial products efficiently and are most suited for multiplication of signed numbers. Multiplier designed in GDI logic requires lesser number of devices as compared to CMOS logic [3]. Hence, GDI multiplier substantially dissipates lesser power as compared to CMOS design.

Soft Computing Approach for Reactive Power Compensation with Solar Photovoltaic System

S. S. Khule[1], S. W. Mohod[2]

Abstract- Environment friendly nature of renewable energy sources (RES), specially of Photovoltaic (PV) system and technological developments of power electronics have motivated in harnessing renewable energy. Photovoltaic Modules are related under standard condition to determine the Watt- Peak rating which can be used with insolation to get the expected output. The paper presents a solar PV system designed and integrated through a three phase shunt active filtering soft computing algorithm based on real component of load current IcosΦ has been proposed and implemented in novel manner. The STATCOM is used as a reactive power compensator and for real power exchange for the load. The implementation of soft computing algorithm maintain the power factor nearly to unity. The irradiance effects are studied with the soft computing algorithm which also compensate irradiance effect. The response of soft computing algorithm proves the effectiveness of proposed control technique.

Keywords- Solar Photovoltaic, IcosΦ Algorithm, STATCOM.

I. INTRODUCTION

Due to ever increasing energy consumption and global climate change problems, renewable energy technologies have been received more and more attention to solve the global issues. Because of rapid growth in power electronic techniques, the photovoltaic (PV) power generation system has been developed worldwide. By changing the duty cycle, the load impedance as seen by the source is varied and matched at the point of the peak power with the source so as to transfer maximum power. Therefore MPPT techniques are needed to maintain the PV arrays operating at its Maximum Power Point. There are many MPPT techniques like Perturb and Observe (P&O), Incremental Conductance (IC), Fuzzy Logic, etc.

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A unique step-by-step procedure for the simulation of photovoltaic modules with Matlab -Simulink has presented in[1].This mathematical modelling procedure serves as an aid to induce research and gain a closer understanding of I-V and P-V characteristics of PV module. I cos Φ algorithm has been applied to a three-phase shunt active filter to provide harmonics and reactive power compensation as demanded by the non-linear reactive load. This algorithm is very simple and easy to implement so that it is necessary for the source to supply only the real power demanded by the load [2] Three-phase four-wire shunt active filters can compensate power quality problems and can also interface renewable energy sources with grid. The inverter stage of the active filter is based in two-level four-leg inverter and its control is based in the theory of instantaneous reactive power (p-q Theory). The filter is capable of compensating power factor, unbalance, and current harmonics. Additionally it can also make the interface between renewable energy sources and the electrical system injecting balanced, practically sinusoidal currents (with low THD) [3]. Overview of the Maximum Power Point Tracking methods for Photovoltaic (PV) inverters has been presently reported in the literature. The most well-known and popular methods, like the Perturb and Observe (P&O) These methods, especially the P& O, have been treated by many works, which aim to overcome their shortcomings, either by optimizing the methods, or by combining them.[4].

In the paper the most popular of MPPT technique Perturb and Observe method has been implemented The utilization efficiency can be improved by employing this hill-climbing MPPT technique. This is a simple algorithm that does not require previous knowledge of the PV generator characteristics or the measurement of solar intensity and cell temperature and is easy to implement with analog and digital circuits. The algorithm perturbs the operating point of the PV generator by increasing or decreasing a control parameter by a small amount (step size) and measures the PV array output power before and after the perturbation. If the power increases, the algorithm continues to perturb the system in the same direction; otherwise the system is perturbed in the opposite direction. The number of perturbations made by the MPPT algorithm per second is known as the perturbation frequency or the MPPT frequency.

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A Survey on Automated Brain Tumor Detection and Segmentation from MRI

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Abstract - *In medical image processing the Brain tumor segmentation is an important task, for improving treatment possibilities and to increases the survival rate of the patients the early diagnosis of brain tumors plays an important role. Segmentation of the brain tumors for cancer diagnosis can be done manually from large amount of data of Magnetic resonance imaging (MRI), but it is a difficult and time consuming task. Therefore there is a need for automatic and reliable brain tumor image segmentation method. However the detection of tumor still is a challenging task for researchers because tumor possesses complex characteristics in appearance and boundaries. The purpose of this paper is to understand brain tumor, its types and different methods for detection and segmentation of brain tumor. The objective of this survey paper is to presents a various automatic Brain tumor segmentation methods from MRI of brain.*

Key Words: **-Brain Tumor, Brain Tumor Segmentation, FCM, Magnetic Resonance Imaging (MRI).**

1. INTRODUCTION

Brain is the center of human central nervous system. The brain is a complex organ as it contains 50-100 billion neurons forming a gigantic network. Brain tumor is an abnormal growth of group of cells that grows inside of the brain or around the brain. The types of Brain tumors are benign tumor and malignant tumor. Benign tumors are non-malignant/non-cancerous tumor. A benign tumor is usually localized and does not spread to other parts of the body. Most benign tumors respond well to treatment. Benign tumor is less harmful than malignant tumor.Malignant tumors are cancerous growths. They are often resistant to treatment, may spread to other parts of the body. Malignant tumors are classified into primary and secondary tumors. The malignant tumor spreads rapidly invading other tissues of brain, progressively worsening the condition causing death. Brain tumor detection is very challenging problem due to complex structure of brain [1]-[4].

In medical imaging technique, magnetic resonance imaging (MRI) images are used to provide detailed information about the internal tissue of respective image. In the diagnosis of brain tumor, determination of the exact location is an important task, using which helps to find out the shape & size of tumor. In brain tumor detection techniques, image segmentation plays a vital role there are many image segmentation methods are used to extract tumor from magnetic resonance imaging images of brain. Whereas segmentation provides the detailed information about the soft brain tissues such as gray matter (GM), white matter (WM), cerebral spinal fluid (CSF)etc. There are two types of segmentation involves a manual segmentation and automatic segmentation. Manual segmentation technique depends on experience or expert knowledge of human and time consuming technique but reduces the computational efficiency. Whereas automatic segmentation deals with histogram. Which is only based on the intensity of pixels. In this survey, various existing image segmentation techniques are introduced for detection and segmentation of brain tumor from MRI images i.e. thresholding-based, edge-based, region-based and clustering-based segmentation have been explained. [5]-[9]

The survey on automated brain tumor detection and segmentation from MRI has following objectives

- To use fully automated tumor segmentation approach for patches extraction.
- To provide software (computer code) to detect the size and location of tumor in brain with quality approach.
- It suggests good classification of brain tumor.
- It provides early and precise detection of brain tumor.

The paper is organized as follows. The section II introduces the brain tumor segmentation technique. The section III gives clustering algorithm. The section IV describes briefly proposed method. The section V describes the conclusion. And the section VI gives future scope.

2. TUMOR SEGMENTATION ECHNIQUES

MRI is mainly used foe brain tumor diagnosis and treatment in the clinic. MRI offers various beneficial features like multiplanar capabilities, potential of tissue characterization and no bone and teeth artefacts.

The different techniques of brain tumor segmentation using MRI images are given in Fig.1.

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DESIGN SMART ENERGY METER BASED ON INTERNET OF THING (IOT)

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ABSTRACT: *Electricity is one of the fundamental necessities of human beings, which is commonly used for domestic, industrial and agricultural purposes. Power theft is the biggest problem in recent days which causes lot of loss to electricity boards. In countries like India, there situations are more often. If we can prevent these thefts we can save lot of power. This is done using Smart Energy Meter. In this paper proposed a system that mainly deals with smart energy meter, which utilizes the features of embedded systems i.e. combination of hardware and software in order to implement desired functionality. This system enables the electricity department to read the meter readings monthly without a person visiting each house. This can be achieved by the use of Arduino unit that continuously monitor and controlled the energy meter reading.*

Keywords: Smart Energy Meter, embedded systems, Arduino

1. INTRODUCTION

With the rapid developments in the Wireless communication technology by the use of microcontrollers, there are many improvements in automating various industrial aspects for reducing manual efforts. The traditional manual meter reading was not suitable for longer operating purposes as it spends much human and material resource. It brings additional problems in calculation of readings and billing manually. Now-a-days the number of electricity consumers is increasing in great extent. It became a hard task in handling and maintaining the power as per the growing requirements. Presently maintenance of the power is also an important task as the human operator goes to the consumer's house and produces the bill as per the meter reading. If the consumer is not available, the billing process will be pending and human operator again needs to revisit. Going to each and every consumer's house and generating the bill is a laborious task and requires lot of time. It becomes very difficult especially in rainy season. If any consumer did not pay the bill, the operator needs to go to their houses to disconnect the power supply. These processes are time consuming and difficult to handle. Moreover, the manual operator cannot find the unauthorized connections or malpractices carried out by the consumer to reduce or stop the meter reading/power supply. The human error can open an opportunity for corruption done by the human meter reader. So the problem which arises in the billing system can become inaccurate and inefficient.

The availability of wireless communication media has made the exchange of information fast, secured and accurate. There are two types of networks, they are wired and wireless. Wired networks require lot of setup and maintenance cost. In wireless networks there are many technologies. In this paper proposed a system that mainly deals with smart energy meter, which utilizes the features of embedded systems i.e. combination of hardware and software in order to implement desired functionality. This system enables the electricity department to read the meter readings monthly without a person visiting each house. This can be achieved by the use of Arduino unit that continuously monitor and controlled the energy meter reading.

This system continuously records the reading and the live meter reading can be displayed on webpage to the electricity department on request. This system also can be used to disconnect the power supply of the house when needed.

2. RELATED WORK

Amit Baranje et. al. [1] proposed Wireless ARM Based Automatic Meter Reading with control system (WAMRCS). This System is used with 32 bit ARM microprocessor for reading power consumption & communicates this data to the utility server for power data processing. GPRS networks are used for communication with utility server in two – way communication link. Power data is used for various purposes such as bill management, for measurement of static power parameters etc. Control systems contains relay circuit, used for disconnection power supply when consumer fails to pay electricity bill in due time.

Karan Gandhi et. al. [2] presents the reviews numerous key aspects of smart metering. Several challenges, requirements and issues in design, development, and maintenance of the smart meter systems are discussed. Smart metering is a good technology which monitors electricity pilferage and power losses. This technique makes the user better informed and careful about consumption, billing and power outages etc. This technology will allow variable tariff implementation

TECH-CHRONICLE
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Design of High Speed ADC for Digital Communication

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Abstract: In digital communication, Analog-to-Digital Converters (ADCs) are functional building blocks in many applications such as data storage, read channel and digital receiver because they shows the interface between the real life analog signal and the digital signal processors. Main building blocks of a SAR-ADC are: sample & hold circuit, comparator, timing and logic control is mainly SAR logic, DAC (Digital to Analog Converter) in the feedback loop of ADC. In this paper, 0.18μm CMOS technology is used to design the components for SAR ADC in such a way that the total power is minimized with high speed.

CMOS has been the dominant technology used for VLSI implementation. As VLSI circuits continue to grow and consumption is becoming a critical issue for modern VLSI circuit technologies evolve, the levels of integration are increased and higher clock speeds are achieved. It causing unabated increase in power consumption as a result; in high speed conversion low power consumption is becoming a critical issue for modern VLSI circuits.

The typical CMOS technology with low cost VLSI implementation is used to design high speed ADC with low optimal delay using double edge triggered D-flip flops (DETDFF) which gives the combination of high accuracy and low-power consumption. ADC using standard CMOS technology can be used in wireless applications in digital communication.

Index Terms- ADC, SAR, DETDFF

I. INTRODUCTION

With the improvement of digital communication, sensors, portable devices and high speed computing systems, equivalent growth is seen in the optimization of high speed analog to digital converters (ADC) to assist the growth in technology. All the analog signals are natural and the present digital world require digital signal (data) for storing, processing and transmitting and thereby high speed ADC becomes an integral part of almost all electronic devices. This leads to the need for low power, small area and high speed optimized design of ADCs.

In a latest survey article on data conversion, it was noted that the most popular type of analog-to-digital (A/D) converter in use today is the successive-approximation (SA) register. The main reason for its popularity lies in its inherently fast conversion which is a constant n clock periods for an n-bit converter. When compared to other A/D schemes such as the servo-type method and the dual-slope integrating method, the successive-approximation scheme offers higher conversion rates. Successive Approximation ADC is considered as one of the most popular A/D conversion technique because it gives the combination of high accuracy and low-power consumption with high speed. Basically, the successive-approximation ADC consists of three main components: a successive-approximation register (SAR), a DAC, and an analog comparator all of which are connected in a feedback arrangement shown in Fig. 1.

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"DESIGN AND SIMULATION OF VIRTUAL LAN IN CAMPUS NETWORKS"

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ABSTRACT: *In traditional Local Area Network (LAN), all devices connected on switches belong to one broadcast domain. Virtual Private Local Area Network (VLAN) technology segments a physical LAN into different groups called VALN's and allows only devices on the same VLAN to communicate with one another while restricting devices on other VLANs from sending network traffic. This technology adds security in the LAN and controls network Broadcast domain. Virtual LANs (VLANs) offer a method of dividing one physical LAN into multiple broadcast domains. However, VLAN-enabled switches cannot, by themselves, forward traffic across VLAN boundaries. For inter-VLAN communication, a Layer 3 router is required. This research paper discusses the VLAN protocol and different ways and possible protocols involved in creating and implementing Inter-VLAN routing for effective distribution of network services in an organization. VTP minimizes misconfiguration and configuration inconsistencies that can cause problems, such as duplicate VLAN names or incorrect VLAN-type specifications. VTP helps you simplify management of the VLAN database across multiple switches. In this paper design a virtual network for campus network which is based on tree topology. For result and simulation we used* Cisco Packet Tracer tool.

Keywords: VLANs, network configuration management, campus network.

1. INTRODUCTION

Today's enterprise network is undergoing a stringent complexity due to frequent change in design of their networks for new organizational needs. Configuration changes are required due to movement of departments and user, addition of new hosts, revision of security policies, company mergers and malicious intruders. The frequency and complexity of configuration changes results in error-prone enterprise networks. However, yet these challenges in enterprise network have received little attention Today's from the research community. One prominent example is VLAN design which is extensively used in enterprise networks. VLAN's were initially intended to connect a group of hosts in the same broadcast domain, independent of their physical location. The expectation for today's VLAN has increases due to better security, flexibility and scalability requirements. Due to this much time we have to search the information about VLAN network and their security in an organization we are implementing a project called "Implementation of the effective distribution of network security in an organization using VTP protocol". Virtual Local Area Networks were developed as an alternative solution to using routers to contain broadcast traffic. In this paper design a virtual network for campus network which is based on tree topology. For result and simulation we used Cisco Packet Tracer tool.

2. LITERATURE REVIEW

Yasuhiro YAMASAKI [1] proposed a flexible access management system based on OpenFlow. The system manages communication access by virtual group ID (GID) managed in OpenFlow controller instead of VLAN. The number of ID is hardly restricted and even if GID is changed, the configuration of switches need not be changed because GID is only used in OpenFlow controller and also built a prototype system having two useful functions. The first function is the access management function equivalent to the authentication VLAN based on NEC's OpenFlow controller. The Second function is Reporting function of the authentication information based on FreeRADIUS. In evaluation results of the proposed system shown the time for authentication and pings, data retrieval. The times for authentication and pings are about 10ms longer than basic OpenFlow controller. However, they are practicable times.

Jie Zhou et. al. [2] proposed an algorithm to discover physical layout topology structure of Ethernet networks with incomplete address forwarding table information. This algorithm can handle both layer-2 switches with VLAN and layer-3 switches and implemented our algorithm in networks of some universities, and it works well in these networks divided by VLAN.

N. Hari Prasad et. al. [3] proposed an INTERVLAN routing configured to connect different VLANs in a network whereas connecting in the same VLAN is also possible. INTER-VLAN ROUTING is also known as ROUTER-ON-A-STICK. Generally to communicate between two departments they need a Layer-3 device in place. Layer-3 switch is used on the

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"STUDY ON VIRTUAL LAN USAGE IN CAMPUS NETWORKS"

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ABSTRACT: *VLANs are widely used in today's enterprise networks to improve Ethernet scalability and support network policies. However, manuals and textbooks offer very little information about how VLANs are actually used in practice. Using a lot of VLANs on campus networks has become popular for deploying many logical networks over minimal fibers/cables. In this paper have studied the four campus networks to better understand. VLANs are used in practice. In our study that VLANs are used for many objectives that they were not originally intended for, and are often ill-suited for the tasks further, the use of VLANs complicates network configuration management.*

Keywords: VLANs, network configuration management, campus network

1. INTRODUCTION

A Local Area Network (LAN) is generally the network of computers located in the same area. Today, Local Area Networks are defined as a single broadcast domain. This means that if a user broadcasts information on LAN, the broadcast will be received by every other user on the LAN. Broadcasts are prevented from leaving a LAN by using a router. The disadvantage of this method is routers usually take more time to process incoming data compared to a bridge or a switch. More importantly, the formation of broadcast domains depends on the physical connection of the devices in the network. Virtual Local Area Networks were developed as an alternative solution to using routers to contain broadcast traffic. VLANs provide the several objective:

- Broadcast Control : eliminates unnecessary broadcast traffic, improving network performance and scalability.
- Security: logically separates users and departments, allowing administrators to implement access-lists to control traffic between VLANs.
- Flexibility: removes the physical boundaries of a network, allowing a user or device to exist anywhere. VLANs are very common in LAN and campus networks. For example, user networks are often separated from server networks using VLANs. VLANs can span across WANs as well, though there are only limited scenarios where this is necessary or recommended.

2. LITERATURE REVIEW

Agwu Chukwuemeka Odi[1] discussed the need of implementing Virtual Local Area Network (VLAN) and Inter-VLAN Routing technologies in Ebonyi State University Network. Going by the usual flat Local Area Network infrastructure where every user belongs to one broadcast domain different series of network insecurities exist.

In the case of an enterprise network having critical file servers, application servers, organizational databases and other confidential information, this would mean that all users would have equal access privileges to these resources. To effectively prevent such situations from operational network we need to restrict access at the network level by segmenting the existing network into different broadcast domains, hence, the need of Virtual Local Area Network (VLAN). In contrast to normally flat LAN architecture where every hosts are connected without segmentation; we break a large broadcast domain into different sizes of broadcast domains by creating Virtual Local Area Networks (VLANs). This VLAN architecture which is a logical grouping of network users and resources connected to administratively defined ports on a switch when deployed in Ebonyi State University Network would be of immense benefit as outlined in the work. In all, this work exhaustively x-rayed the benefits of VLAN and Inter-VLAN routing in managing and maintaining of Ebonyi State University Networks.

Gyan Prakash Pal [2] present, in details, exactly what a VLAN is and how VLAN memberships are used in a switched network. Membership in a VLAN can be based on port members, MAC addresses, IP addresses, IP multicast addresses and/or a combination of these features. VLANs are cost and time effective, can reduce network traffic, and provide an extra measure of security.

N.Hari Prasad[3] proposed an INTERVLAN routing configured to connect different VLANs in a network whereas

A SURVEY ON TRAFFIC DENSITY MONITORING AND CATTLE MENACE ALERT SYSTEM USING IOT

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Abstract - Traffic management is becoming one of the most important issues in rapidly growing cities. Traffic jams and congestion is a common issue because of the increment of numerous vehicles. Congestion at times leads to delay and most of the time causes inconvenience to commuters. One more issue related to traffic jams is the Stray cattle are often found in the middle of the roads causing problems to commuters. Stray cattle roaming around freely in the cities have become a serious problem. The problem of stray animals, causing traffic blockheads and accidents on city roads is increasing day by day. A smart traffic monitoring system and cattle menace detection system can be one of the solutions to the above problem. This can be done by measuring the vehicular density on that road and wherein real time image and video processing techniques will be used. The main aim is to coordinate the traffic by keeping a check of its density at junctions and thereby controlling the traffic signal intelligently. For implementation, the system uses an image processing technique to analyze for a traffic condition. It detects how many objects or cars or animals on the road. And then, the system connects a traffic condition result on "ThingSpeak Channel". Moreover, it can be used to develop an alert once the cattle gets detected on the road. The proposed system uses a concept of Internet Of Things application platform 'ThingSpeak' for analysis of traffic monitoring and for Cattle Menace Alert System. In this paper different ways for management of traffic and control are discussed in detail.

Index Terms – IoT, ThingSpeak, RFID, Raspberry Pi

I. Introduction

Nowadays, the growing volume of the traffic all around the world requires higher levels of the traffic safety. Due to the ever-increasing traffic demand, modern societies with well-planned road management systems, and adequate development of transportation still faces the problem of heavy traffic. In response to growing traffic congestion on roads, a lot of research is being done ceaselessly to improve traffic conditions and new fields are explored to manage and improve traffic conditions. In Modern Life we have to face with many problems one of which is traffic congestion becoming more serious day after day. It is said that the high volume of vehicles, the inadequate infrastructure and the irrational distribution of the development are main reasons for increasing traffic jam. It is necessary to efficiently manage the traffic flow by completely utilizing the existing capacity of the road. Modern Cities are facing a lot of trouble due to the traffic congestion. Increasing population results in subsequent increase in the vehicles causing congestion. In consequence, it takes more time to transport and a traveler feels stressed. One serious problem is the presence of cattle on the road. Stray cattle blocking the driveway triggers collisions and accidents. A smart traffic control system can solve these problems by continuously detecting and adjusting the timing of traffic signals according to the actual traffic load such a system called as intelligent traffic control system. An intelligent traffic control system reduces congestion, operating costs, increase the capacity of the infrastructure and provide cattle detection system.

In this paper, we will study the method which specially focuses on traffic management and control. Multiple mechanisms utilized for management of traffic and taking care of cattle menace discussed in detail. This brief survey presents various approaches for intelligent traffic systems. Further a model is also suggested for traffic monitoring based on the use of CCTVs and ThingSpeak "an IoT (Internet Of Things) analytics platform.

II. Literature Survey

Many researches and works have been done on traffic analysis using image processing techniques. Various Traffic control methods are used for the betterment of controlling the traffic and to avoid traffic congestion Problems. In the field of IoT, many systems are proposed in order to control, manage the traffic system effectively. In the literature different control methodologies have been presented for controlling and managing traffic. The traffic monitoring and controlling is being researched and implemented through various means such as the use of image processing, RFID, wireless sensor networks, embedded system, GSM technology and Artificial Intelligence Techniques. In this section, different solutions for the better traffic management have been introduced,

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A Novel Approach of Sensorized Glove for Paralyzed Person

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ABSTRACT

The master purpose of the paper is to build sensorized glove system, designed to provide a comfortable communication using synthesized speech for the convenience of a paralyzed person. Usually, a paralyzed people with half of their body paralyzed (speechless) communicate with society through their sign language which is difficult to be understood by the majority of people. The intended system is configured to solve this problem. The movement of user's finger of this glove will be changed into synthesizing speech to carry an audible message to receivers. The glove is occupied with the no of flex sensors which are constructed using bend sensitive resistance element. For every particular movement, flex sensor generates a proportional change in resistance of the various element. This mechanism sends a unique set of signal to microcontroller and voice IC which is pre-programmed to give the desired command. Thus, the developed system is used to establish a communication bridge among paralyzed (or speechless) and normal person.

Keywords: *Flex Sensor, Sensorized Glove, Voice IC, Gesture Communication, Paralyzed Person.*

1. INTRODUCTION

According to one survey conducted by Christopher and Dana Reeve Foundation, in today's era, nearly 5.6 million of people are suffering from the problem of paralysis. Such large number of people cannot be neglected. Thus we have proposed one model which has its main mechanism based on gesture communication. This system provides an effective solution to the disabled persons and helps them to establish comfortable communication with the society. This model is very much useful for speechless persons as well.

The heart of this system is glove having several flex sensors attached to it. Such sensorized glove is used for data collection of finger movement and transmission of a generated signal to the microcontroller. Amount of flex sensor can vary according to user requirement. For example - up to five flex sensors can be attached to one glove.

Instead of just displaying output message on LCD this model comprises of voice IC at the output side. Thus there is no necessity for the receiver to check the LCD display time to time.

- The basic aim of this paper is to provide an easy and simple solution to the stated problem.
- To establish an effective communication by translating the gestures into words, using portable model.[1]

2. LITERATURE REVIEW

The first glove base system was developed in 1970's [2]. From that point forward various glove systems have been developed. These system prototypes were generated at Massachusetts Institute of Technology (MIT) and were named as MIT-LED and Digital entry

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A Novel Approach on Wireless Power Transmission Using Resonance Circuit with Multiple Coil Switching Technique

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***Abstract*—The purpose of this paper is to discuss concept of transmitting power without wires. Using resonant coupling Wireless transmission of power is the transmission of electric power without use of any wired medium. In this paper we analyses and designs wireless power transmission using magnetically coupled resonator with the multiple coil switching techniques. Resonant coupling Wireless transmission is useful in cases where instantaneous or continuous energy transfer is needed, but interconnecting wires are inconvenient, hazardous, or impossible. With this we can avoid complexity and risk of wiring. By means of coil windings distance and efficiency can be increases. Due to it does not effect surrounding atmosphere. This method most convenient than other wireless power transmission where media for transmission of power is easiest and cheapest.**

Index Terms—Microcontroller, Power, Resonant coils

I. Introduction

In the 1890's, famous scientist and engineer Nikola Tesla demonstrated the wireless transmission of electrical energy, based on the principle of electric conductivity [1]. This was achieved using big, coupled electromagnetic resonators, able to generate very large electric fields. Tesla concluded that the earth is an excellent electrical conductor, and an electric current can be made to propagate undiminished for distances of thousands of miles. Due to financial problems, this idea was abandoned and copper cables became the basis for modern electricity infrastructure. In 1964, William C Brown demonstrated a microwave powered model helicopter. In 1975, Brown was technical director of a JPL Raytheon program that beamed 30 kW over a distance of 1 mile at 84% efficiency using microwaves.

In recent times, several companies like Witricity Corp and Splash power came into existence, that have developed technologies for charging small gadgets, such as cell phones and cameras, using electromagnetic induction. Wireless transmission of electricity will enable "self-charging" of these devices and thus, is the need of the hour. By providing electricity wirelessly to these electronic devices, it is possible to eliminate our dependency on bulky, heavy batteries and power cords, thereby making these wireless devices portable in all respect. This emerging technology was demonstrated by Eric Giler, CEO of the US firm WiTricity, at the TED Global Conference held at Oxford in 2009. In this demonstration, Giler showed a WiTricity power unit powering a television as well as three different cell phones. In 2009, Sony shows a wireless electro dynamic-induction powered TV set, 60 W over 50 cm. Haier Group debuts "the world's first" completely wireless LCD television at CES 2010.Electric tooth brushes and wireless charging pads are currently used in day to day life. Presently, the project is looking for power transmission in the range of 100watts. Efforts are being taken to develop "WiTricity" (term for wireless electricity) devices, which are capable of charging laptops and other portable devices with increased efficiency. This technology is still in the development stage and lots of work is to be done in improving the range and efficiency of power transmission.

II. Basic Principle Of Resonant Magnetic Coupling

The basic principle employed in our project is Resonant Coupling between the transmitter and receiver. Resonant Magnetic Coupling occurs when two inductively coupled objects, having the same resonant frequency, are in resonance. These two objects (in our case, the source coil and receiver coil) tend to exchange energy efficiently, whereas the interaction with the extraneous off-resonant objects and the surrounding is minimal [1].Inductive coupling uses magnetic fields that are generated when current flows through a wire. When electrical current flows through a wire, it creates a circular magnetic field around the wire. Bending the wire into a coil amplifies the magnetic field. The more loops the coil makes, the stronger is the field. It is possible to extend the distance between coils in inductive coupling system by adding resonance condition. By sending electromagnetic waves around in a highly angular waveguide, evanescent waves are produced, which carry no energy. An evanescent wave is a near field standing wave exhibiting exponential decay with distance. Evanescent waves are always associated with matter, and are most intense within one-third wavelength from any radio antenna. Evanescent means tends to vanish, the intensity of transient waves decays exponentially with the distance from the interface at which they are formed. If a proper resonant waveguide is brought near the transmitter, the evanescent waves can allow the energy to tunnel to the power drawing wave guide, where they can be rectified into DC power Since the electromagnetic waves would tunnel, they would not propagate through the air to be absorbed or dissipated and would not disrupt .electronic devices or cause physical injury

AUTOMATED POWER SYSTEM FOR CLASSROOM

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Abstract—

Present scenario of energy crisis not only demands to increase generation of energy but also to utilize it as per legitimate requirement to conserve at public places like educational institutes, where the users are more and no one cares to switch OFF appliances when not required. The aim of this project is to design cost effective automated system which can be easily incorporated in academic institution especially in the class rooms to conserve the energy. Lights and fans switched ON and OFF as depending on presence of persons in classroom. The implementation is made simpler by using three sensor to detect presence of persons and compact circuitry built around arduino microcontroller programs. Through this system, we want to help academic institutes to save money on their power bills and contribute in reducing the emission of green house gases in environment. The system can be fed by solar power making it electricity saving system with zero use of electric power.

The rise in energy costs urged the need in minimizing the energy consumption. As significant amount of energy is used for illuminating in educational buildings such as lecture halls and lecture rooms, improvements is needed to avoid energy waste for unoccupied and daylight hour. The lighting will be controlled based on demand to save the energy costs Introduces the common existed problem that lights work in classroom with nobody, analyzes several traditional solutions and their deficiencies, then puts forward the energy-saving system for classroom based on presence of person in the room.

Keywords— Arduino, sensor, legitimate, microcontroller, illuminating.

I. INTRODUCTION

Power saving have become a necessary thing in our day to day life. Many conventional power saving methods such as using electrical devices which consumes very less energy or cutting off the entire power supply for a scheduled time for a particular area are not efficient and there will be a lot discomforts to the users and cost may also increase to use a low power electrical device.

Its natural economics phenomenon that if supply not meeting the demand, prices increases. Same is the case in electricity supply. many countries struggling to generate and meet the electricity demands. Hence, other way round is conservation of energy, reducing the pressure of electricity generation. Consequently, industries, homes, and businesses are already taking power saving measures to save money and to become more environmental friendly but it is equally important to conserve the power in academic institutions also. Power saving techniques seems to have a small impact to each individual, but as the price and demand for electricity rises, the collective power saving actions of everyone will make a significant difference. How many times we have forgotten to turn off the lights or TV when we stopped using them? Many times kitchen lights remains on while grabbing dinner and then leave them on when you left to watch TV or TV remains on when you are busy in other task. Similarly consider the scenario of a class room where it is expected to ON and OFF the lights and fans by peon, what he does, in the beginning of working hours switch ON the light and fans and at end of working hours switch OFF them. No matter how many student in the class room or no student at all, this is not only the job of peon to switch the light and fan off when not required, rather it collective responsibility of each individual getting the comfort of utilities. It is unfortunate truth that students show negligence towards this and it is being observed that even though no student in the classroom few or all, lights and fan remains ON for hours, in other case 100% students are not present still all appliances remains turned ON. This is the only reason which made us think and work on designing some kind of automated system for the class rooms to save the power rather than blaming and making others responsible for negligence.

Buildings are responsible for up to 40% of energy usage. Most part of this energy is used mainly for maintaining good lighting such that the workers feel comfortable. Nowadays the newly constructed modernized or automated buildings may have lighting system to improve the comfort of occupants and to save the energy. But there are large number of old buildings which contains thetraditional lighting system. To reduce the energy consumption in those types of buildings and to help the owners of that building in terms of saving electricity bill an intelligent and an effective method is discussed in this paper. Because of advancement in Sensor technology a very cheap and portable methods to measure our surroundings are available. The amounts of light required to for a good environment to work comfortably in various areas are shown in table I which is recommended by CIBSE lighting guides. In most schools, especially colleges, there isa ubiquitous phenomenon that the room is brightly lit during the day although the daylight is good, meanwhile there is another similar situation that people leave classroom with the lights still on. These lamps lit uselessly until the duty to turn off when the building should be closed according to the school regulations, which consequently leads to a great waste of energy. Classroom lighting controlling is never a new topic,there are many similar researches at home and in abroad. According to the information from the current perspective, there is still not a perfect solution. This "Lit waste" problem solving, daytime lighting problem solving, is relatively simple, the current domestic and international research bottleneck is how to detect accurately whether there is someone in the classroom with the lowest cost.

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Adaptive Empirical Mode Decomposition of Speech Signal

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Abstract

Stress is a burden which is acting on individual's body in form of tremor, anxiety, pressure, greater heart beats, sweating, shakiness of hands or legs and movements of eyes. Everybody agrees to avoid the stress but when the actual time comes no one can escape from it. Speech is a non-linear and non-stationary signal and termed as a physical quantity which can be measured. Analysis of speech is measuring the stress induced in speech in the situations like fatigue, emotions and medical problems [9]. This paper presents a new method called Adaptive Empirical Mode Decomposition (AEMD) applied to voice for Benchmark as well as the Real Time Database collected.

Keywords: AEMD, MATLAB, FFT, FPGA.

1. Introduction

Today's world is filled with fast and growing technology. Day to day the working environment is having ease of comfort with this technology. Due to this there has been less physical movements and has induced mental stress levels which introduced new field of research as analysis of speech. The speech signal is a way of communication which happens between the two or more persons and again it is cheapest medium of stress analysis. Stress analysis is not only the field of medical but has diverted attention into engineering field too. Stress recognition from speech signal is the study of speech as normal or stressed. Again stress speech will be farther considered as high level stress or low level stress depending on its amplitude level. These levels can be measured by the changes or fluctuations in muscles of vocal chords named as microtremor frequency in speech [17]. The definition of microtremor is a low amplitude oscillation in the range of 8-12 Hz. When stress level is increased it increases this microtremor [3]. In this paper we have used method called Adaptive Empirical Mode Decomposition for decomposing speech into Intrinsic Mode Functions (IMF) [1]-[4].

2. Voice or Speech Signal Stress Analysis Using Empirical Mode Decomposition (EMD)

An Empirical Mode Decomposition algorithm is developed using MATLAB to detect microtremor in the voice for stress detection or Lie Detection [9]. The EMD process is a "Sifting Process" that extracts intrinsic mode functions (IMF) from raw input signal until the microtremor is been extracted [7]. The general AEMD process is expressed in the flowchart as shown in Fig. 1 [8]-[9].

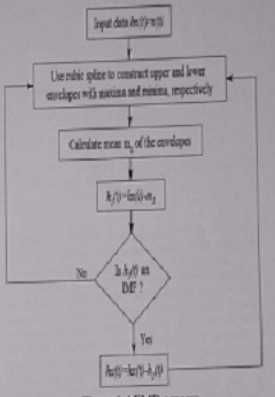

Figure1 AEMD process

3. Adaptive EMD Procedures

AEMD is an iterative or "sifting" process described as follows in [9] as follows

1) Upper and lower envelopes of the unstressed voice signal $hx(i)$ are constructed with its maxima and minima using cubic spline function.
2) Mean of the envelopes mi is subtracted from $hx(t)$ to obtain a new signal $hi(t)$.
3) Determine if $hi(t)$ is an IMF using the criteria described above.
4) If $hi(t)$ is an IMF, it is subtracted from the original signal $hx(t)$, and the resulted new signal $hx(t)$ goes through the above procedures until another IMF is obtained.
5) Each IMF is checked if it is in the microtremor frequency band (8 to 12 Hz). If not, the algorithm

Identification of Stress Speech in Marathi Language using AEMD Algorithm

Mrs. N.P. Dhole and Dr. S.N. Kale

Abstract - **Stress recognition is one of the important and interested research works for human being. This paper deals with the stress level and on that we define as the person is under low stress or high stress. Stressful Speech is a non-linear and non-stationary signal and termed as a physical quantity which can be measured through MATLAB Software. This paper presents a new method called Adaptive Empirical Mode Decomposition (AEMD) applied to speech in Marathi Language datasets.**

Index Terms- AEMD, MATLAB, FFT, FPGA.

I. Introduction

In the 21st century, stress is a very fast growing problem around the world that affects not only human health but also the productivity of organization where this human is working. Also high Stressful speech is a pressure which is acting on individual's body in form of tremor, anxiety, depression, greater heart beats, and sleeping difficulties. So it is very important to identify the person who is in high stress or low stress. Today's world is filled with less physical movements and has induced mental stress levels which introduced new field of research as analysis of speech. Stress recognition from speech signal is the identification of speech as normal or stressed. Again stress speech will be further classified as high level stress or low level stress depending on its amplitude level. These levels can be measured by the changes or fluctuations in muscles of vocal chords named as microtremor frequency in Stressful speech. Adaptive Mode Decomposition [2] was applied for decomposing speech into Intrinsic Mode Functions (IMF) [3][4].

II. Identification of Stress Using Empirical Mode Decomposition (EMD)

An Empirical Mode Decomposition algorithm is developed using MATLAB to detect microtremor in the voice for stress detection or Lie Detection [1]. The EMD process is a "Sifting Process" that extracts intrinsicmode functions (IMF) from raw input signal until the microtremor is been extracted [2]. The general AEMD process is expressed in the flowchart as shown in Fig. 1 [1] [5]

III. Adaptive EMD Procedures

AEMD is an iterative or "*sifting*" process described as follows [1]:

1) Upper and lower envelopes of the unstressed voice signal $hx(t)$ are constructed with its maxima and minima using cubic spline function.

2) Mean of the envelopes mi is subtracted from $hx(t)$ to obtain a new signal $hi(t)$.

3) Determine if $hi(t)$ is an IMF using the criteria described above.

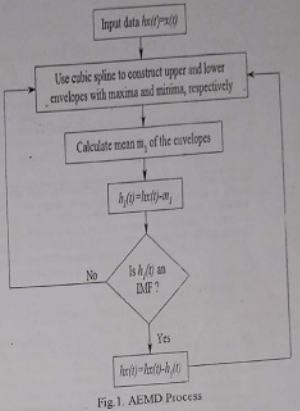

Fig.1. AEMD Process

4) If $hi(t)$ is an IMF, it is subtracted from the original signal $hx(t)$, and the resulted new signal $hx(t)$ goes through the above procedures until another IMF is obtained.

5) Each IMF is checked if it is in the microtremor frequency band (8 – 12 Hz). If not, the algorithm adaptively adjusts the stopping criteria until the in-band IMF representing a microtremor is detected. This IMF is used as the reference.

6) The stopping criteria consist of several important parameters including the absolute amplitude of the remaining signal, the mean value of the envelope, the cross-correlation coefficient between the remaining signal and the original signal, and the Standard Deviation (SD) between two consecutive results in the sifting process.

AEMD is a method of breaking down a signal without leaving the time domain [6]. The empirical mode decomposition generalizes the Fourier analysis. It decomposes a signal as the sum of intrinsic mode functions. AEMD procedure can be applied to decompose the time series into a set of IMFs and a residue [7] By applying the Hilbert transform to each IMF signal can be further analyzed to calculate the instantaneous frequency and amplitude of each IMF [8]. The whole process is called Hilbert Huang Transform. In this study, we implement an iterative algorithm

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Support Vector Machine Classification of Stress Types in Speech

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Abstract: *Speech of human beings is the reflection of the state of mind. Proper evaluation of these speech signals into stress types is necessary in order to ensure that the person is in a healthy state of mind. In this work we propose a SVM classifier for speech stress classification algorithm, with sophisticated feature extraction techniques as Mel Frequency Cepstral Coefficients (MFCC). The SVM algorithm assists the system to learn the speech patterns in real time and self-train itself in order to improve the classification accuracy of the overall system. The proposed system is suitable for real time speech and is language and word independent.*

Index Terms: *Support Vector Machines, MFCC, Stress Classification, Feature Selection.*

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I. Introduction

Stress Identification is remarkably gained high attention in various fields from two decades. The fields are Medical, Forensics, Smart Environments, Teaching Learning Education, Human computer interactions, Emergency services and of course Real Time situations which is utmost crucial. From many years different speech recognition software's [1] has been developed to speed up the accuracy using various classifiers on several databases [2]. We have also revised the literature review of numerous researchers for the same work [3,4,5,6,7,8,9]. We have used for this work the Berlin database [8,9] and Humane database [10,11,12,13] as Benchmark Datasets. Again we have recorded our speech samples using Audacity software with different frequencies. Speech signal recorded was of people having male, female voices including children above eight years and elder's up to age of 58.

This paper proposes SVM algorithm to detect and classify the human speech into different stress classes, and thereby provide a preliminary analysis of the type of stress which the person might be undergoing. Doing this can help the person to analyze the stress and obtain remedies for the same. The whole Algorithm is developed in MATLAB Software.

II. Berlin Database

The article describes a database of emotional speech. Ten actors (5 Female and 5 Male) simulated the emotions, producing 10 German utterances (5 short and 5 longer sentences) which could be used in everyday communication and are interpretable in all applied emotions [8]. The recordings were taken in an anechoic chamber with high-quality recording equipment. In addition to the sound electro-glottograms were recorded. The speech material comprises about 800 sentences (seven emotions * ten actors * ten sentences + some second versions). The complete database was evaluated in a perception test regarding the recognisability of emotions and their naturalness [9]. Utterances recognised better than 80% and judged as natural by more than 60% of the listeners were phonetically labelled in a narrow transcription with special markers for voice-quality, phonatory and articulatory settings and articulatory features.

III. Humaine Database

The database proper is a selected subset of the data with systematic labelling, mounted on the ANVIL platform [10,11,12,13,14]. It is designed to provide a concrete illustration of key principles rather than to be used as it stands in machine learning. Stage I (available via the HUMAINE portal at www.emotion-research.net) contains 50 'clips' from naturalistic and induced data, showing a range of modalities and emotions, and covering a balanced sample of emotional behaviour in a range of contexts. Emotional content is described by a structured set of labels attached to the clips both at a global level, and frame-by-frame, showing change over time. Labels for a range of signs of emotion have also been developed and applied to a subset of the clips:

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An Application Using Radial Basis Function Classification in Stress Speech Identification

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Abstract- Speech of human beings is the reflection of the state of mind. Proper evaluation of these speech signals into stress types is necessary in order to ensure that the person is in a healthy state of mind. In this work we propose a RBF classifier for speech stress classification algorithm, with sophisticated feature extraction techniques as Mel Frequency Cepstral Coefficients (MFCC). The RBF algorithm assists the system to learn the speech patterns in real time and self-train itself in order to improve the classification accuracy of the overall system. The proposed system is suitable for real time speech and is language and word independent. The human behaviour considers six basic emotions which are happiness, sadness, anger, fear, surprise & disgust. It becomes important to detect emotional state of a person which will be induced by workload, background noise, physical environmental factors (e.g. G-force) & fatigue. Broadly, stress identification becomes a scientific challenge to analyze a human being interaction with environment

Index Terms: RBF, MFCC, Stress Classification, Feature Selection. .

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This paper proposes RBF algorithm to detect and classify the human speech into different stress classes, and thereby provide a preliminary analysis of the type of stress which the person might be undergoing. Doing this can help the person to analyze the stress and obtain remedies for the same. The whole Algorithm is developed in MATLAB Software.

II. BERLIN DATABASE

The article describes a database of emotional speech. Ten actors (5 Female and 5 Male) simulated the emotions, producing 10 German utterances (5 short and 5 longer sentences) which could be used in everyday communication and are interpretable in all applied emotions [8]. The recordings were taken in an anechoic chamber with high-quality recording equipment. In addition to the sound electro-glottograms were recorded. The speech material comprises about 800 sentences (seven emotions * ten actors * ten sentences + some second versions). The complete database was evaluated in a perception test regarding the recognisability of emotions and their naturalness [9]. Utterances recognised better than 80% and judged as natural by more than 60% of the listeners were phonetically labelled

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Study of Recurrent Neural Network Classification of Stress Types in Speech Identification

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Abstract: Speech of human beings is the reflection of the state of mind. Proper evaluation of these speech signals into stress types is necessary in order to ensure that the person is in a healthy state of mind. More than a decade has passed since research on stress types in speech identification has become a new field of research in line with its 'big brothers' speech and speaker recognition. This article attempts to provide a short overview on where we are today, how we got there and what this can reveal us on where to go next and how we could arrive there. In this work we propose a Recurrent Neural Network classifier for speech stress classification algorithm, with sophisticated feature extraction techniques as Mel Frequency Cepstral Coefficients (MFCC). The algorithm assists the system to learn the speech patterns in real time and self-train itself in order to improve the classification accuracy of the overall system. The proposed system is suitable for real time speech and is language and word independent.

Index Terms: RNN, MFCC, Stress Classification, Feature Selection.

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This paper proposes Recurrent Neural Network Algorithm to detect and classify the human speech into different stress classes, and thereby provide a preliminary analysis of the type of stress which the person might be undergoing. Doing this can help the person to analyze the stress and obtain remedies for the same. The whole Algorithm is developed in MATLAB Software.

II. BERLIN DATABASE

The article describes a database of emotional speech. Ten actors (5 Female and 5 Male) simulated the emotions, producing 10 German utterances (5 short and 5 longer sentences) which could be used in everyday communication and are interpretable in all applied emotions [8]. The recordings were taken in an anechoic chamber with high-quality recording equipment. In addition to the sound electro-glottograms were recorded. The speech material comprises about 800 sentences (seven emotions * ten actors * ten sentences + some second versions). The complete database was evaluated in a perception test regarding the recognisability of emotions and their naturalness [9]. Utterances recognised better than 80% and judged as natural by more than 60% of the listeners were phonetically labelled in a narrow transcription with special markers for voice-quality, phonatory and articulatory settings and articulatory features.

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Multilayer Perceptron Classification in Stress Speech Identification

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Abstract- The human behaviour which considers six basic emotions which are happiness, sadness, anger, fear, surprise & disgust. It becomes important to detect emotional state of a person which will be induced by workload, background noise, physical environmental factors (e.g. G-force) & fatigue. Broadly, stress identification becomes a scientific challenge to analyze a human being interaction with environment Speech of human beings is the reflection of the state of mind. Proper evaluation of these speech signals into stress types is necessary in order to ensure that the person is in a healthy state of mind. In this paper we will get to know how speech Identifiers are trained and how we can enhance the basic recognition procedures by exploiting a pre-processor by use of pattern classification into different level of stress types. In this work we propose a MLP classifier for speech stress classification algorithm, with sophisticated feature extraction techniques as Mel Frequency Cepstral Coefficients (MFCC). The MLP algorithm assists the system to learn the speech patterns in real time and self-train itself in order to improve the classification accuracy of the overall system. The proposed system is suitable for real time speech and is language and word independent.

Index Terms- MLP, MFCC, stress classification, feature Selection.

I. INTRODUCTION

Stress Identification is remarkably gained high attention in various fields from two decades. The fields are Medical, Forensics, Smart Environments, Teaching Learning Education, Human computer interactions, Emergency services and of course Real Time situations which is utmost crucial. From many years different speech recognition software's [1] has been developed to speed up the accuracy using various classifiers on several databases [2]. We have also revised the literature review of numerous researchers for the same work [3,4,5,6,7,8,9]. We have used for this work the Berlin database [8,9] and Humaine database [10,11,12,13] as Benchmark Datasets. Again we have recorded our speech samples using Audacity software with different frequencies. Speech signal recorded was of people having male, female voices including children above eight years and elder's up to age of 58.

This paper proposes MLP algorithm to detect and classify the human speech into different stress classes, and thereby provide a preliminary analysis of the type of stress which the person might be undergoing. We are going to apply MLP architecture to the speech signals in order to analyze stress types. Doing this can help the person to analyze the stress and obtain remedies for the same. The whole Algorithm is developed in MATLAB Software. The speech signal is an interesting source for stress analysis, since it can be seen from literature review that various researchers have worked on stress analysis in different ways. A speech monitoring system is that system which is able to quantify a speaker's degree of stress.

II. BERLIN DATABASE

The article describes a database of emotional speech. Ten actors (5 Female and 5 Male) simulated the emotions, producing 10 German utterances (5 short and 5 longer sentences) which could be used in everyday communication and are interpretable in all applied emotions [8]. The recordings were taken in an anechoic chamber with high-quality recording equipment. In addition to the sound electro-glottograms were recorded. The speech material comprises about 800 sentences (seven emotions * ten actors * ten sentences + some second versions). The complete database was evaluated in a perception test regarding the recognisability of emotions and their naturalness [9]. Utterances recognised better than 80% and judged as natural by more than 60% of the listeners were phonetically labelled in a narrow transcription with special markers for voice-quality, phonatory and articulatory settings and articulatory features.

III. HUMAINE DATABASE

IP CORE FPGA DESIGN USING VHDL FOR DIGITAL FILTER IN STRESS SPEECH IDENTIFICATION

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[2]Associate Professor, Department of Applied Electronics, Sant Gadge Baba Amravati University, Amravati, Maharashtra, India

Abstract: Today the lifestyle of human are changing tremendously, every person wants to lives a luxurious life but doing all these things Stress is a burden which is acting on individual's body in form of various diseases. Everybody agrees to avoid the stress but when the actual time comes no one can escape from it. Every speech processing system must be judged on two basic factors which govern its usability- Accuracy and speed. Unfortunately, one of them almost invariably comes at the cost of the other. A higher accuracy rate implies a wider training sequence and higher number of iterations in the learning algorithm, all of which would necessarily take a far greater number of iterations in the learning algorithm, all of would necessarily take a far greater number of clock cycles in a standard processor setting. This paper presents the solution on Adaptive Empirical Mode Decomposition (AEMD) Algorithm applied to voice for benchmark as well as real time database in collaboration with VHSIC Hardware Description Language (VHDL) to introduce a high degree of parallelism methodology thereby reducing the number of clock cycles required for its implementation. This is possible when we port the digital filter part of the MATLAB algorithm onto an A Field Programmable Gate Array (FPGA).

Index Terms-MATLAB, AEMD, VHDL, FPGA

I. INTRODUCTION

Today's world is filled with fast and growing technology. Day to day the working environment is having ease of comfort with this technology. Due to this there has been less physical movements and has induced mental stress levels which introduced new field of research as analysis of speech. In the study of Speech Identification by machine is a critical core technology for the Information age. An Empirical Mode Decomposition (EMD) was developed using MATLAB to detect micro-tremor in the speech to detect stress [1], [2], [3], stress recognition was considered in speech signal as normal or stressed. Again stress speech will be further considered as high level stress or low level stress depending on its amplitude level [4],[5],[6], in this paper a part of AEMD from MATLAB has been taken as input and given to VHDL to increase the speed and accuracy through Digital filter design in VHDL.

II. FLOWCHART ON DIGITAL FILTER FPGA DESIGN

In the implementation of the designing a Digital filter which is Band-pass Filter [7] we used a Verilog and test-bench file. We got two things from Matlab which are given as input to the Verilog, they are as follows.

1. Expected input to be applied to the filter design in Verilog.
2. What is expected output coming from Verilog filter design.

The VHDL and verilog hardware description languages (HDLs) allow you to embed constraints in the design code at the highest level of abstraction. In designing the Band-pass filter we need the above two things. In the following flowchart HDL coding is done in Model-Sim Software and Xilinx Plan Ahead Software. To this design Gate Simulation is performed and verified for making a VHDL Test Bench. In the Logic Synthesis a User Constraints File (ucf) is used during the implementation process, you can enter timming, placement, and pinout constraints in the ucf file. The output is obtained, by doing Physical design and to configure it. We get the Band-pass filter with high speed and accuracy in FPGA. The design works in Verilog & from Verilog we can convert on FPGA.

III. IMPEMENTATION

An IP (Intellectual Property) core is a block of data or logic that is used in making VHDL to describe digital and mixed signal system such as speech signal in a field programmable gate array specially used for designing of digital filter. In this work stressed speech identification is implemented in VHDL [8]. In the Verification scheme functional simulation is done using Xilinx ISIM Simulator. ISIM software has significant enhancements to the graphical user interface, and project flows, which offer a more comprehensive design flow for Logic designer[9],[10]. Test-bench is developed for top level design for Band-pass Filter. Stimulus is configured for testing top level IP core. Performance is observed using simulation results and Timing diagram. The Band-pass Filter

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A STRESS IDENTIFICATION USING COMBINED METHOD OF NEURAL NETWORK AND EMD COMPONENTS IN SPEECH

Mrs. N.P. Dhole[1], Dr. S.N. Kale[2]

Abstract-Stress is a burden which is acting on individuals body in formof tremor, anxiety, pressure, greater heart beats, sweating,shakiness of hands or legs and movements of eyes. Everybodyagrees to avoid the stress but when the actual time comes noone can escape from it. Speech is a non-linear and non-stationarysignal and termed as a physical quantity which canbe measured. Analysis of speech is measuring the stress inducedin speech in the situations like fatigue, emotions and medicalproblems [1]. This paper presents a combined method of Neural Network and EMD Components to analyze Stress in Speech.

Keywords: EMD, NN, DBS Transform, MFCC.

1. INTRODUCTION

Today's world is filled with fast and growing technology.Day to day the working environment is having ease ofComfort with this technology. Due to this there has beenless physical movements and has induced mental stressLevels which introduced new field of research as analysisof speech. The speech signal is a way of communicationwhich happens between the two or more persons and againit is cheapest medium of stress analysis. Stress analysis isnot only the field of medical but has diverted attentioninto engineering field too. Stress recognition from speechsignal is the study of speech as normal or stressed. Againstress speech will be further considered as high level stress or low level stress depending on its amplitude level. These levels can be measured by the changes or fluctuations inmuscles of vocal chords named as microtremor frequency in speech [2]. The definition of microtremor is a low amplitude oscillation in the range of 8-12 Hz. When stresslevel is increased it increases this microtremor [3]. In thispaper we have used method called Adaptive EmpiricalMode Decomposition for decomposing speech intoIntrinsic Mode Functions (IMF) [4] along-with Neural Network to classify Stress Types.

2. AUDACITY SOFTWARE

Audacity is a free and Open Source Software, it's an easy-to-use audio editor and recorder for Windows, Mac OS X, GNU/Linux, and other operating systems. Audacity is free software, developed by a group of volunteers and distributed under the GNU General Public License (GPL) [5]. We can use Audacity to Record live audio, Convert tapes and records into digital recordings or CDs Edit Ogg Vorbis, MP3, and WAV sound files to Cut, copy, splice, and mix sounds together to Change the speed or pitch of a recording. Audacity can record live audio through a microphone or mixer, or digitize recordings from cassette tapes, vinyl records, or minidiscs. In this research work we have recorded the speech using audacity with different frequencies 8 kHz, 16 kHz and 44.1 kHz.

3. FLOWCHART OF THE ALGORITHM

3.1 EMD Components-

Adaptive Empirical Mode Decomposition Algorithm has been implemented in the papers [6][7]. We got the components i.e EMD components [8][9]. The EMD components are again segmented and filtered out.

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International Journals of Advanced Research in Computer Science and Software Engineering
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Research Article | January 2018

Advance Protection for Three Phase Induction Motor using Microcontroller Atmega32

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Abstract— A low cost and reliable protection scheme has been designed for a three phase induction motor against unbalance voltages, under voltage, over voltage, short circuit and overheating protection. Taking the cost factor into consideration the design has been proposed using microcontroller Atmega32, MOSFETs, relays, small CTs and PTs. However the sensitivity of the protection scheme has been not compromised. The design has been tested online in the laboratory for small motors and the same can be implemented for larger motors by replacing the i-v converters and relays of suitable ratings.

Keywords— induction motor protection; overvoltage; undervoltage; unbalance voltage; single phasing; over current.

I. INTRODUCTION

The protection of induction motor plays an important role in its long life service. Many researchers have done work in this area but their protection scheme is costly and unfeasible in our Indian condition. Three phase induction motor can continue to run when one phase of the supply goes out of service due to any fuse blowing or opening of phase by protective device. The heat produced by the motor under single phasing condition needs to be taken care of in adequate time. When phase opens at distribution transformer or at feeder end, the stator and rotor losses increases to ten times and the shaft output power decreases to negligible. But if the single phasing occurs at motor terminals the losses increases twice and the shaft power reduces to nearly 70%. Motor life shortens as the temperature increases[1]. To protect the motor all the terminals should be open [2]. On distribution feeders, majority of faults are single phase. On an average single phase fault occurs 70%, double phase fault 20% and symmetrical fault 10%[3].

Voltage at motor terminals may be higher than nominal value in a complex industrial system and can be well below from nominal value in a heavily loaded industrial system. IEEE, NEMA and other power communities have different definitions about voltage unbalance. These definitions only give an idea about the voltage unbalance. The complex algebra is avoided in these definitions to make paper calculations easy[4]. Unbalance voltages have negative impact on the performance of three phase induction motors[5]. Under voltage in all the three phases adversely effects the efficiency of the motor as compared to three phase over voltage condition. Positive sequence voltage and negative sequence voltage effects the motor's power factor and its efficiency.NEMAMG1 standard has suggested de-rating of the motor under voltage unbalance condition [6].

Starting of the motor also has a role of overheating in the rotor. If the starting of the motor is slow then the motor heats up quickly because it draws more current till it achieves the rated speed. This may be due to under-voltage condition. So at the time of starting of motor the voltage should be appropriate as mentioned on the name plate of motor. Due to global business competition, manufacturers have reduced the cost of the machine by reducing the size for same output motor. In the last century the power to weight (W/kg) ratio has increased 14 times. The rate of failure of the motors manufactured by the top companies in the last ten years has also shown an increasing trend in the last few decades[7].

Microcontroller or microprocessor can protect the motor from under/over voltages, over current etc. Low voltage output from the step down transformer has been fed to the ADC converter. ADC converter converts the analog values to digital values. Microcontroller has been used to compare the instantaneous digital values with the reference values. If the instantaneous values go beyond the prescribed limit, microcontroller trips the relay circuit[8]. Protection of the three phase induction motor based on voltage measurement is not enough if the fault occurs at distribution transformer or at substation feeder because the faulted phase will draw negative sequence current and voltage if developed nearly close to line voltage. If fault occurs at motor terminals then the voltage measurement can protect the motor very well. The current measurement device should be implemented within the protective device [9]. Protection can be enhanced by zero crossing detection method by using 8085 microprocessor [10].

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A Survey: Wireless Body Area Network for Health Monitoring

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Abstract

With an increasingly mobile society and the worldwide deployment of mobile and wireless networks, the wireless infrastructure can support many current and emerging health care applications. Citizens, being patients or non-patients, will not only be able to get medical advice from a distance but will also be able to send from any location full detailed and accurate vital signal measurements, as if they had been taken in medical centers. Towards this direction, the proposed system is highly customizable vital signal monitoring system based on Wireless Body Area Networks (WBAN). The proposed system allows the incorporation of diverse medical sensors via wireless connections and the live transmission of the measured vital signals over public wireless networks to healthcare providers. This paper discusses different scenarios where this wearable health monitoring system can be used and different types of sensors are used to measure the different parameters such as temperatures, glucose, heart beats, ECG, EEG, etc. Finally, through a case study, we demonstrate how the diabetic patient takes the advantage of this system.

Keywords: WBAN (Wireless Body Area Network; Sensor; Wireless network; medical server; PDA (personal digital assist).

1. Introduction

Body area network (BAN), wireless body area network (WBAN) or body sensor network (BSN) is terms used to describe the application of wearable computing devices.

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Interactive Mobile Health Monitoring System

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Amravati

Dr. P. V. Ingole
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Badnera, Amravati
India

Abstract—**Health monitoring system is an active application in pervasive and ubiquitous computing. It is an application of mobile computing technology for enhancing communication among health care workers, physicians and patients with a view to provide better health care system. Recent elevation in sensors, wireless communication and low power integrated circuits has empowered the design of pocket size, light weight, low cost, and interactive bio-sensor nodes. These nodes are seamlessly integrated for mobile health monitoring using wireless body area network which can sense, process and communicate more or more vital parameters.**

The proposed system, through mobile device can provide client health parameters (such as temperature, heart rate and ECG) to medical server, care taker and to medical practitioner based on the biomedical and environmental data collected by deployed sensors. In this system, multiple physiological parameters are incorporated for monitoring as against one or two parameters in legacy system. In this paper hardware, software and implementation of system is discussed where as the focus is on authentication, power consumption, accuracy in transmission of health parameters to medical server.

Keywords—Biomedical sensors; Wireless body area network; mobile device and microcontroller

I. Introduction

The citizens aged 65 will almost double by 2050 and as they age, [24] various ailments in their age group prevail. Patients in this age group generally prefer to be at home rather than getting admitted to the hospital. If affordable healthcare services are provided for patients who prefer to stay at home and still being monitored due to an ailment through which they are undergoing, this will not only be beneficial to the patients but to the country as well, as it will decrease the load of health care systems. There are number of reasons for their decision, such as need for security, privacy and accessibility. So, it is the time to overcome the bodily limitations of hospitals and instead of bringing patients to the hospital extending patient monitoring facilities at home will benefit. The solution to this is the "Mobile Health Monitoring System".

The fundamental driving component for the mobile health monitoring system is "Pervasive Computing" [13] also known as pervasive health care. The embedded sensors and handhelds devices avail information more conveniently anytime and anywhere. Number of citizens are participating in design, development and evaluating mobile technologies for customized health care. People are usually advised to visit their doctors periodically for repetitive medical checkups for common health issues such as diabetes, vascular heartbeat, high blood pressure and obesity. A solution is proposed to provide a smarter and more personalized service to save time, cost and inspire personal health care.

The proposed Interactive Mobile Health Monitoring System indicates promise in terms of Telemedicine and Tele-home-care. It uses biometric sensors to monitor patient's health status in real time. The proposed system incorporates sensors for temperature detection, heart rate and ECG along with Wearable Body Area Network which sense and collect data from patients, mince the data and sends real time physiological data to Medical server, medical practitioner and also delivers comments to patients' mobile device for corrective action.

The framework of the paper is as follows: a brief description of previous work in section 2, architecture of the system in section 3, Design and implementation of the proposed system in section 4. Characteristics of the system in section 5, Impact on society in section 6, System testing and Evaluation in section 7, Result in section 8, Conclusion and Future Scope in section 9.

II. Previous Work

In 2007 [7] describes Open issues, challenges, requirements, network infrastructures for the number of pervasive health care applications. A dedicated research program [18] to design, develop and evaluate pervasive computer technologies to help citizens to participate in taking care of their personal health and also health professionals to treat patients in modern and smart way.

P. Szakaes-Simon, S.A. Mocanu and L. Perniu [3] presents health monitoring system to detect and monitor abnormal heart rate and blood oxygen level to avoid emergency situations and keep updating patient about corrective measures. Whereas the proposed Interactive Mobile Health Monitoring System along with heart rate monitors temperature and an ECG signal also.

Dennis Joe Hannah, Kathiravelu D [4] Developed PC and Tablet based miniaturized ECG monitoring system for preliminary detection of heart disease. The system is implemented using programmable single chip microcontroller to indicate the heart conditions by analyzing bio signals. Health professionals are prompted with alerts if any cardiac abnormality is observed. Whereas the proposed system can transmit the same ECG signal to Medical Server as well as on Doctor's mobile along with real time heart rate and temperature of patient.

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Performance Analysis of Improved Clustering Algorithm on Real and Synthetic Data

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***Abstract*—Clustering is an important technique in data mining to partition the data objects into clusters. It is a way to generate groups from the data objects. Different data clustering methods or algorithms are discussed in the various literature. Some of these are efficient while some are inefficient for large data. The k-means, Partition Around Method (PAM) or k-medoids, hierarchical and DBSCAN are various clustering algorithms. The k-means algorithm is more popular than the other algorithms used to partition data into k clusters. For this algorithm, k should be provided explicitly. Also, initial means are taken randomly but this may generate clusters with poor quality. This paper is a study and implementation of an improved clustering algorithm which automatically predicts the value of k and uses a new technique to take initial means. The performance analysis of the improved algorithm and other algorithms by using real and dummy datasets is presented in this paper. To measure the performance of algorithms, this paper uses running time of algorithms and various cluster validity measures. Cluster validity measures include sum squared error, silhouette score, compactness, separation, Dunn index and DB index. Also, the k predicted by the improved algorithm is compared with optimal k suggested by elbow method. It is found that both values of k are almost similar. Most of the values of validity measures for the improved algorithm are found to be optimal.**

***Index Terms*—Data mining, Clustering Algorithm, Validity Measure, Run time, Optimal Clusters.**

I. Introduction

In the world of science &technology and the internet, daily data increases by units of terabytes. It is manually difficult to analyze and understand the hidden trends from this low to high dimensional data. Data mining is one of the ways to do so. This analysis may be from different thoughts or perspectives to summarize data into useful information. Data mining summarizes large data from different angles and categories.Then relates it to some current, past or future trends. It is observed from the literature that in a variety of areas and applications, the clustering algorithms are very popularly used [1]. Clustering accepts data sets that contain a large number of data items and produces groups of similar data objects. While forming the groups, the labels are not defined. Therefore, clustering belongs to unsupervised learning type. The best property of data clustering methods compared to other types of data mining is that it is used to manage the changes and identify the most useful features to separate one formed group from the other. Clustering can be used in real life areas such as psychology, biology, image processing and analyzing, economics, pattern recognition, bioinformatics, weather forecasting, etc. This paper has studied and implemented various standard and improved algorithms [1]. It has then simulated these algorithms on ten real datasets such as iris, salaries, wholesale, liver and university data sets and other two synthetic datasets [15]. The performance of improved and existing clustering algorithms is measured with more than five measures which are not done in any of the surveyed papers as yet.

The organization of this paper is as follows: Section I covers introduction, Section II presents a brief survey of the various literature. The third section covers standard clustering algorithms. In the fourth section, implementation and the results are discussed. In the last section, the conclusion and references are given.

II. Related Work

Clustering algorithms are used in various domains such as the e-commerce, bioinformatics, image segmentation, speech recognition, financial analysis and fraud detection [1]. This paper presents a survey of various concepts and algorithms related to clustering. It has also designed improved k-means with some modification in finding k as well as initial centroid selection. Authors of the paper [2] present a brief summary of algorithms used to cluster the datasets from ranges of fields and applications. The clustering results and evaluation measures are presented in the paper. The k-means algorithm is one of the most well-known clustering algorithms. However, the

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MIME Approach for Development of Cell Phone Audio/Video Text Services with Aural and Visual Representation

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Abstract- The basics of scheming, budding and structuring hardware and software systems; dealing out, structuring, and managing various kinds of information; doing scientific research on and with computers; making computer systems behave intelligently; and creating and using communications and entertainment media and communication devices such as phones, tablets, and other electronic gadgets like PDAs, various other hand held devices known as embedded & integrated, battery-operated machines & tools, which is small & enough to carry with us all the time. This gadgets containing variety of MIME applications and communication capabilities and adapt to various operating conditions in an efficient way. The use of real-time electronic content like video, speech, animation and music significantly improve the usability, quality, productivity, and enjoyment of MIME systems. MIME applications require the carrying of multiple synchronised media streams. Some of these streams (typically video streams) have high bandwidth and stringent real-time requirements. The objective of this paper is to carry out formal investigation on important issues in MIME system approach for development of cell phone mobile computing with the help of visual representation of Information.

Keywords- Mobile MIME System, Information Visualization, Mobile Computing.

I. INTRODUCTION

The communication path contributes a significant amount of the total energy consumption of a typical mobile system. The objective behind the design of such type of system may be the utility & convenience. The amount of information available nowadays to scientists, engineers and business managers is vast.

Almost all of this information is available digitally, stored in Information storage devices and commonly connected via computer networks, intranets or the Internet Mobile Cell Phone applications also include a major amount of user interaction. Cell Phone MIME system is a computer storage communication system that delivers heterogeneous and compressed/encrypted content such as text, audio, video, and graphics from storage devices and transfers it over a heterogeneous channel such as internet, wireless network and local area network to end user while maintaining perceptual integrity. This is shown in figure 1.

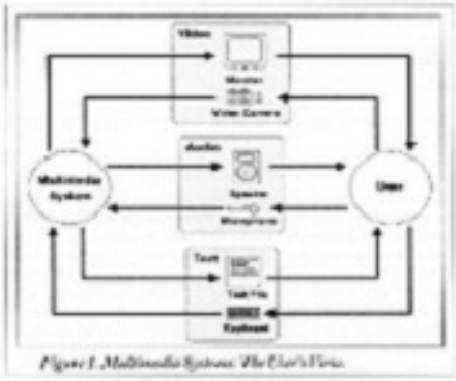

Figure 1 Multimedia Systems: The User's View

Cell Phone applications & services, that control the growth in mobile computing, which depends on the availability of a flexible broadband wireless infrastructure. The design of cell phone applications depends on mobile environment, which having number of special characteristics [1]. Such as

a) *High memory bandwidth* – Many MIME cell phone applications involve huge memory bandwidth for large Information sets that have restricted locality.

b) *High network bandwidth* – Streaming Information – like video and images from external sources – requires high network and I/O bandwidth.

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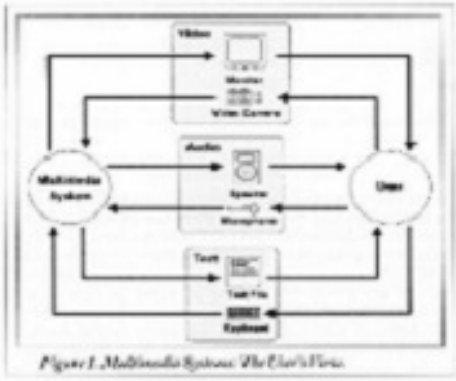

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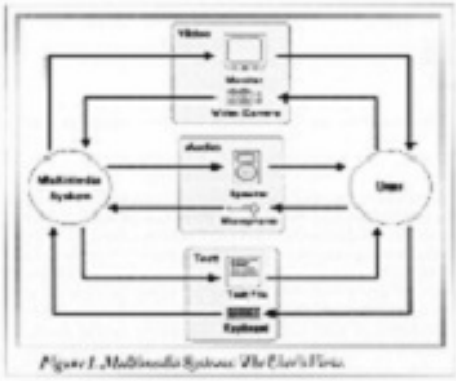

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Modeling and Experimental Studies on Solar Crop Dryer Coupled with Reversed Absorber Type Solar Air Heater

Vijay R. Khawale, Shashank B. Thakare

***Abstract*—**The experiment was carried out to study the performance of solar crop dryer coupled with reversed absorber type solar air heater (SD2). Excel software is used to analyse the raw data obtained from the drying experiment to develop a model. An attempt is made in this paper to correlate the collector efficiency, dryer efficiency and pick-up efficiency. All these efficiencies are dependent on the parameters such as solar flux, ambient temperature, collector outlet temperature and moisture content. The simulation equation was developed to predict the values of collector efficiency. The parameters a, n and drying constant k were determined from a plot of curve using a drying models. Experimental data of drying red chili in conventional solar dryer and solar dryer coupled with reversed absorber solar air heater was compared by fitting with three drying models. The moisture content will be rapidly reduced in solar dryer with reversed absorber due to higher drying temperatures. The best fit model was selected to describe the drying behavior of red chili. For SD2 the values of the coefficient of determination (R^2=0.997), mean bias error (MBE=0.00026) and root mean square error (RMSE=0.016) were used to determine the goodness or the quality of the fit. Pages model showed a better fit to drying red chili among Newton model and Henderson & Pabis model.

***Keywords*—**Solar dryer, red chili, reversed absorber, reflector, Buckingham pi theorem, drying model.

I. Introduction

FARMERS use a traditional open sun drying technique to dry an agriculture food product. The main disadvantage of this process is spoilage of food product due to rain, wind, moist, dust, birds and animals, deterioration of the material due to insect infestation and fungal growth. This traditional method is comparatively a slow process than a solar dryer with solar air heater particularly in locations with good sunshine during the harvest season. It is possible to maintain a required drying temperature in solar drying to improve the quality of product and reduce the losses. Also the traditional process is highly time consuming, labor intensive, and requires large area. In such conditions, a solar-energy crop dryer is an emerging technology. During an open sun drying, the crop losses and deterioration are immensely affected due to change in climatic conditions. It increases the interest in utilization of solar dryers. The drying is a process of reducing the moisture content of the product to a level of equilibrium moisture content that prevents deterioration. The period for which deterioration stop normally termed as the "safe storage period" [1]. Drying processes continues until the vapour pressure of the moisture in the product equals to the vapour pressure of the moisture held in the environment [1], [2]. Properly designed solar air heater may give sufficient rise in temperature of air which is suitable for drying of some of the agricultural food products [3]-[7]. In India an average daily solar radiation is received in the range of 5-7 KW/m² and more than 275 days are with good sunshine in a year [8].

The main purpose of this research is to evaluate an experimental performance of a solar crop dryer using a solar air heater with two absorber plate and reflector.

II. Materials and Methods

A. Red Chili

Chili is a potential cash crop in India and has a good export market. The red chili used in this study is obtained from Farm, Nerpinglai, Amravati (District), Maharashtra, India.

B. Experimental Set Up

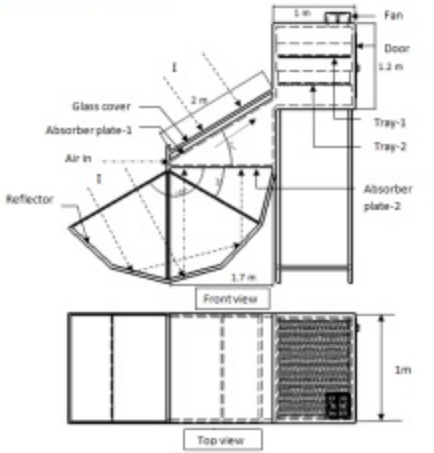

Fig. 1 Schematic diagram of solar crop dryer with reversed absorber plate and reflector (SD2)

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Design and Analysis of Two Wheeler Composite Chassis Frame

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[1,2]Prof. Ram Meghe Institute of Institute of Technology & Research Badnera, Amravati, Maharashtra India

Abstract— The chassis frame forms the backbone of a vehicle. Automotive chassis is the main carriage system of a vehicle. The two-wheeler chassis consists of a frame, suspension, wheels and brakes. Commonly used material for two-wheeler chassis is steel. Steel material makes the chassis frame heavy and thereby increasing overall weight of vehicle. Weight reduction is the crucial issue in today's automotive industries since it greatly affects the fuel efficiency of vehicle. Composite materials providing outstanding solution to this problem. The present work here attempts to incorporate the change in material of chassis of two wheeler vehicle which could provide higher strength to chassis and have lesser weight of the chassis rendering it a higher life of operation. The new proposed material are E- Glass, S- Glass and Carbon Epoxy whose material properties are compared with conventional material of chassis used that is steel. The chassis of two wheeler is geometrically modeled in CAD software which is CATIA V5 and analysis done on ANSYS workbench.

Key words: Chassis Frame, Two Wheeler, Composite Materials, Weight Reduction

I. Introduction

Automotive chassis is a French word that was initially used to represent the basic structure. It is a skeletal frame on which various mechanical parts like engine, tires, axle assemblies, brakes, steering etc. are bolted. It gives strength and stability to the vehicle under different conditions. At the time of manufacturing, the body of a vehicle is flexibly molded according to the structure of chassis. Automobile chassis is usually made of light sheet metal or composite plastics. It provides strength needed for supporting vehicular components and payload placed upon it. Automotive chassis or automobile chassis helps keep an automobile rigid, stiff and unbending. It ensures low levels of noise, vibrations and harshness throughout the automobile. Automobile chassis without the wheels and other engine parts is called frame. Automobile frames provide strength and flexibility to the automobile. The backbone of any automobile, it is the supporting frame to which the body of an engine, axle assemblies are affixed. Tie bars that are essential parts of automotive frames are fasteners that bind different auto parts together. Automotive frames are basically manufactured from steel. Aluminum is another raw material that has increasingly become popular for manufacturing these auto frames. In an automobile, front frame is a set of metal parts that forms the framework which also supports the front wheels.

In 19th century material research was at its peak and covered almost all area of application with one intention of defining new materials which define new technologies. Earlier methods were of manually drafting the geometries and manufacturing the chasiss in synchronous order to produce the result which were subjected to rejection due to inefficiency to meet the standards. The validation of design and manufacturing process was dependent on the statistical analysis of failure data which engulfed large amount of observation and corresponding time. But with advent of microelectronics and mainly due to uprising of computer numeric control in 1952 this techniques of tool development are study of history. The present day witnesses the drafting of chassis along with its complex geometry in software which runs on the subroutines and algorithms known by the name of computer programs for manipulation, creation and representation of geometric models. The statistical data of failure of tool can be analysed with greater convenience with software's algorithms mainly intended to do so. Thus the work of drafting new geometries and defining new materials to the same and analysing the relevant parameters which would define the best material to be employed can be achieved with lesser amount of time and monetary expenditure which was employed earlier. This helps to decide different materials for different applications of automobile chassis and can be efficiently employed while designing an automobile.

A. Objectives of Study

The various objectives under study can be numerated as follows:

- To geometrically model the chassis of two wheeler of Hero Passion.
- To determine the variants of material over the conventional steel material that is currently being used for manufacturing of chassis and there corresponding mass to affect the fuel efficiency.
- To analyze the von mises stresses using ANSYS Workbench 14.5 acting on the various materials used for study which are steel, E- Glass , S- Glass and carbon epoxy.
- To analyze the chassis for different materials under study in context of natural frequencies of the same so as to evaluate the resonating limit of each material.
- To compare the results obtained for various materials in context of Von Mises stresses acting on chassis and natural frequency of vibration of the same.
- To ascertain the best material to be selected for chassis providing higher strength and higher limit of natural frequency over the conventional steel material to be used

B. Problem Statement

The present work provides an insight of the effect of material variation on bending stresses acting on the chassis and the natural frequency of chassis of conventional material. This values are compared with new proposed material which are E- Glass, S- Glass and carbon epoxy of which best material

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EXPERIMENTAL INVESTIGATION AND REGERSSION MODELLING OF SURFACE ROUGHNESS OF COPPER DURING CNC TURNING

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ABSTRACT:

In today's competitive and dynamic market environment, the main confront of metal-based industry is to maintain higher productivity and the surface excellence of the machined parts. In utmost situation, performance of turning process is measured in terms of quality of surface generated. Fatigue strength, corrosion resistance and creep life increases as superiority of turned surface improves significantly. Therefore ideal surface finish is usually required and appropriate parameters need to be selected to achieve required quality of surface. The present research intends to apply use of Taguchi method to carry out performance analysis of the CNC turned parts to achieve high surface finish on copper alloy material. This paper explores the corollary of process parameters in turning of copper alloy on HAAS CNC lathe machine. In this research work, Taguchi's L_9 orthogonal array is used to carry out CNC turning operation on copper alloy. To study the performance characteristics in CNC turning signal to noise ratio is evaluated. The output response like surface roughness is analyzed considering effects of factors like spindle speed, tool feed rate and uncut depth of work piece or depth of cut for tool. For predicting the surface roughness, regression mathematical model (in terms of linear and quadratic terms) has also developed from the experimental result, which will be useful to envisage surface roughness value on different combination of selected parameters. From verification experiments it is observed that, calculated surface roughness from model equation varies in the range of 0 to 10% with respect to an experimental value. Thus, it is possible to obtain effective machine utilization and present work will be quite useful for manufacturing engineers working in the field of CNC Machining.

KEYWORDS: Surface Roughness; CNC; Copper alloy; Regression models.

1.0 INTRODUCTION:

Turning is the most extensively used among all the cutting processes. In the present manufacturing era, increased. Due to budding competition the efforts are intended for the economical production of machined component with high surface finish. Hence surface roughness is one of the most important quality measures in mechanical products [1].To maintain higher quality functional feature in higher precision components, surface roughness becomes key factor in the modern manufacturing process. Physical & mechanical properties like corrosion resistance, creep life and fatigue strength are considerably enhanced as surface finish progressively improves in the turning performance. Functional characteristic of component like surface wear resistance, friction, reflection of light from exterior and heat transmission are dependant of surface roughness. The properties like load bearing capability, wettability of lubricant and fatigue resistance are also varying with degree of surface finish. Consequently preferred surface finish is usually required and appropriate parameters need to be selected to achieve required quality of surface.

2.0 LITERATURE REVIEW OF PRESENT RESEARCH WORK

Material removal rate (MRR) is affected by depth of cut followed by the nose radius during turning of aluminium alloy 6061 by carbide inserts. [2] .Optimum turning conditions for the power factor and energy efficiency are same and occur at 248.69 m/min. cutting speed, 0.3 mm/rev. feed rate, 1.8 mm depth of cut and 0.8 mm nose radius when CNC rough turning is carried out for EN 353 alloy steel with multi-layer coated tungsten carbide.[3] .An optimization study by machining a hardened AISI 4140 grade (63 HRC) steel on a lathe by using Al2O3 + TiCN coated ceramic inserts showed that cutting speed is the only the significant factor influencing the tool wear [4].The cutting speed of 160 m/min, nose radius of 0,8 mm, feed of 0.1 mm/rev, depth of cut of 0.2 mm and the cryogenic environment are found the most favorable cutting parameters when multiple output optimization for high speed during CNC turning of AISI P-20 tool steel. [5].

The cutting performance on Ti-6Al-4V alloy with synthetic oil is found to be better when compared to dry

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Experimental Analysis of Cellulose Cooling Pads Used in Evaporative Coolers

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Abstract

In this paper, performance of two types of cellulose cooling pads (5090 and 7090) which were made from corrugated papers has been investigated. They were tested in a sub sonic wind tunnel. The pads areas are 0.35× 0.35 m^2 with 50, 100 and 150 mm thicknesses. Humidity variation, Pressure drop, effectiveness and evaporated water have studied for several inlet air velocities. The results show that overall pressure drop and amount of evaporated water increases by increasing the inlet air velocity and thickness in both types of pads. On the other hand, effectiveness and humidity variation decreases by increasing inlet air velocity. When compared with local materials the effectiveness of the pads in decreasing order of magnitude is Cellulose>Aspen>Khus pad. Cellulose pad effectiveness depends on thickness of pads as well as inlet velocity. Further more with proper maintenance, cellulose pads can be used for many years. This study is useful for making opportunities in residential buildings to use cellulose cooling pads instead of aspen pads in conventional desert coolers.

Keywords

Cellulose Cooling Pads, Water Evaporation Rate, Evaporative Cooler

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1. Introduction

Direct evaporative cooling process is one of the most efficient techniques used in air conditioning applications such as cooling towers, humidifiers and evaporative coolers. In this process, water and air are in contact with cross-flow arrangement, vertical channels for water flow and horizontal channels for air. First, warm air is drawn by fan into a dwelling through a porous wetted material or pads. Then, the water absorbs heat and evaporates from porous wetted medium. Finally, the air leaves the system at a lower temperature(Figure 1). During the cooling process, the wet-bulb temperature of the air remains constant and the porous pad are wetted continuously by spraying water on the surfaces of pads or by dripping water onto the upper edge of vertically mounted pads.

The efficiency of evaporative pad systems is affected by many factors including surface area and thickness of pad, the type of material used in the pad, the size of perforations, flow rate and relative humidity of air passing through the pad, and volume of water used. Evaporative pads have made from different materials such as metal, wood, plastic, and glass. Manufacturing of commercial pads made of these materials are complicated and costly. At present Aspen & Khus pads are used in evaporative coolers, which are most popular in central part of India for cooling residential buildings. Recently, manufacturers have been designed new pads made of cellulose paper to make evaporative cooling more useful and efficient in different applications including industrial and residential sectors, swine building, poultry, greenhouses, as well as storage warehouses [1–6]. These pads are energy efficient, economical, compact in size and light in weight,

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Design and Development of Vertical Axis Wind Turbine

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Potential of Shrouded Micro Wind Turbine

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Design optimization of an axial flow compressor using CFD approach and experimental validation

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Abstract: This paper deals with aerodynamic design of a single stage axial flow compressor for gas turbine engine. The axial flow compressor is designed for the constant tip diameter of the compressor rotor blade for 15.5 kg/s, 14800 RPM, 276.5 KW power with a tip speed 167.7 m/s. The aerodynamic design and blade profiling has been carried out using CFD software. The research starts with design of the high pressure ratio compressor blade sections which yield a single stage pressure rise up to 1.21. Further the design is optimized for minimum total pressure loss. Prototype blade cascades were tested in low speed wind tunnel for performance parameters. Resulting data from experiment s compared with the numerical analysis.

Key Words - **Axial flow compressor, aerodynamic design, CFD modeling, experimental validation, wind tunnel cascade test**

I. INTRODUCTION

The overall gas turbine engine performance depends on the components' performance like compressor, compressor, combustor and turbine. Among these components the compressor plays a vital role. Hence it is required to know the performance and aerodynamic behaviour of the compressor before it is integrated into the engine. The prime requirement of Gas turbine engine manufacturers is efficiency and power to weight ratio. It is possible in two ways, increase the maximum combustion temperature and increase maximum pressure in compressor. The former is limited to the turbine inlet temperature and turbine blade material. The later can be achieved by running the compressor at higher speed. It results in the either high subsonic or transonic flow. But the sonic flow creates high losses in the cascade because of the formation of shock waves. Hence the other way to achieve an efficient compressor is by improving the compressor blade design. The current trend in compressors is to design an optimized blade with minimal pressure loss and higher pressure ratio. The present work carries out the optimization of the blade profile for the compressor cascade at high subsonic inlet flow conditions. An attempt has been made to design and configure a single stage axial flow compressor to a gas turbine engine producing 276.5 KW power output used for power generation.

II. RESEARCH METHODOLOGY

The aerodynamic design of axial flow compressor is carried out by selecting the optimum engine cycle parameters like cycle pressure ratio, RPM, Compressor efficiency, turbine efficiency and turbine entry temperature. Based on the compressor pressure ratio from [4] and mass flow rate calculated from cycle analysis, the aerodynamic design of compressor is carried out to get overall dimensions of the compressor and flow angles at inlet and outlet of the stage. The required flow variation area, the blade height was estimated by considering radial equilibrium and exponential method of velocity distribution. After calculating the overall dimension, and assuming solidity and aspect ratio, number of blades is calculated and shaft diameter is calculated. Optimisation of axial flow compressor design was a very tedious task as a small variation in one parameter will have a considerable change in compressor design, also to choose the optimum values is an art, so AXTREAM provides a good option to this problem and design can be optimised in no time by redesigning it as per requirement. The results obtained through it shows very good agreement for both design and off design conditions i.e. getting enough stall and choke margin with required pressure ratio at given mass flow and RPM. Scaled prototypes of blades are cascade tested in low speed wind tunnel. Pressure gradient and flow coefficient values from experiment are in agreement with software data thus validating the optimized design.

2.1 Design Specification and Assumptions for Stage Design

Based on the problem statement defined from cycle analysis, design specifications for single stage axial flow compressor are

Mass Flow rate at Atmospheric condition	15.5 kg/sec
Rotor speed	14800 RPM
Inlet total Temperature	298 K
Inlet total Pressure	101325 N/m2

2.2 Preliminary Design

Preliminary design solution generator helps to rapidly select optimal main flow path parameters, such as the number of stages, geometrical dimensions and angles, heat drop distributions etc. Preliminary design procedure performs inverse task calculation i.e. based on boundary conditions and calculates flow path geometry.

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Aerodynamic Design of a single stage Axial Flow Compressor using CFD approach

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ABSTRACT

The performance of axial flow compressor has major impact on overall performance of gas turbine engine. The paper deals with numerical analysis of a single stage, subsonic axial flow compressor using commercial CFD code of AxSTREAM. The aerodynamic design and blade profiling has been carried out using CFD software. The research starts with design of the high pressure ratio compressor blade sections which yield a single stage pressure rise up to 1.21, the constant tip diameter of the compressor rotor blade for 15.5 kg/s, 14800 RPM, 276.5 KW power with a tip speed 167.7 m/s. Further the design is optimized for minimum total pressure loss. Analytical results compared with the numerical analysis.

Keywords: Axial flow compressor, aerodynamic design, CFD modeling, Blade design and profiling, optimized performance.

I. INTRODUCTION

In the recent decades, the gas turbines have dominated air transportation by virtue of their high efficiency and reliability. An axial compressor is an important part of any efficient gas turbine. Axial flow compressors are the fluid pumping machinery where the fluid enters and exits axially to the rotor axis. The unique features like high mass flow rate for a small frontal area and high efficiency ratio with higher mass flow rate makes an axial flow compressors a perfect choice for gas turbines used in jet engines. The overall gas turbine engine performance depends on the components' performance like compressor, compressor, combustor and turbine. Among these components the compressor plays a vital role. Hence it is required to know the performance and aerodynamic behaviour of the compressor before it is integrated into the engine. The prime requirement of Gas turbine engine manufacturers is efficiency and power to weight ratio. It is possible in two ways, increase the maximum combustion temperature and increase maximum pressure in compressor. The former is limited to the turbine inlet temperature and turbine blade material. The later can be achieved by running the compressor at higher speed. It results in the either high subsonic or transonic flow. But the sonic flow creates high losses in the cascade because of the formation of shock waves. Hence the other way to achieve an efficient compressor is by improving the compressor blade design. The current trend in compressors is to design an optimized blade with minimal pressure loss and higher pressure ratio. The present work carries out the optimization of the blade profile for the compressor cascade at high subsonic inlet flow conditions. An attempt has been made to design and configure a single stage axial flow

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N. M. Yawale

P.R.M.I.T. &R., Badnera, India

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A Review Paper on Online Restaurant Management System

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***Abstract*--** The system is implemented to reduce the manual work and enhances the accuracy of work in a restaurant. This system manages and maintains the record of customers and their order online. This Android App has been made in a user friendly interface. So that Customer can add and delete the food items easily. The menu card of different restaurant consists of various food varieties available in the restaurant. Through the place ordering menu, the customer can simply click and order the food. The messaging module tells the supplier to supply the particular food. Also tracking module track the order. The billing system prepares the bill according to the delivered food. This system entirely reduces the unnecessary time. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time.

***Keywords*—Restaurant Management, Recommendation, Tablet, Menu, Intelligent, Android application.**

I. INTRODUCTION

Over the years, technology has tremendously revolutionized the restaurant industry. Much of the innovation has been with point-of-sale (POS) operations. There is a famous saying that "People eat with their eyes". The e-Menu provides additional information about menu items and drinks than a traditional paper menu. The simplicity and ease of access of a menu are the main things that facilitate ordering food in a restaurant.

The service goes quicker. Restaurants can build their e-reputation and customer community in live. The restaurant menu has evolved from its humble beginnings on carte chalkboards and imageless print to today's detailed, colorful displays. With the emergence of digital tablets and user-friendly touch screen technology menus can move to a whole new surface. With this electronic menu, orders can be taken correctly the first time. There is no need to run back and forth to a distant terminal, because the terminal is always with the server. Every order is associated with an individual seat at the table, and orders are built one customer at a time, just like on paper, but with greater accuracy. Items can also easily be shared by the whole table, moved or modified, and noted and the cost can be calculated in real time. The Recommendation algorithm suggests dishes to the patrons based on previous orders. It makes it easier for the customer to build his/her order and also view the most popular dishes. Moreover, various dimension filters can be used according to individual preferences e.g. Price, taste, quantity, etc

II. OBJECTIVES

- To develop android application for restaurant ordering system and provides facility to update the menu.
- To develop a software at kitchen and cashier to receive order from server.
- To establish network for kitchen, cashier and android device and print the bill at customer side.
- Customer should be able to enter the feedback about the service and the food served by e-restaurant android application.

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Research Article

BIANCHI TYPE-VI*h* UNIVERSE FILED WITH INTERACTING COLD DARK MATTER AND HOLOGRAPHIC DARK ENERGY

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Bianchi type-VI$_h$, space-time, Interacting dark fluids, Statefinder Parameters.

ABSTRACT

In the present work, we have solved Einstein field equations in presence of Holographic dark energy and interacting Dark matter in space-time describe by spatially homogeneous and anisotropic Bianchi type-VI$_h$. The solution of field equations are obtained under the condition of the expansion scalar (θ) is proportional to shear scalar (σ). In order to distinguish between our dark energy model with other existing dark energy models, the State finder diagnostic is applied to the model. The physical and kinematical properties of the models are also discussed.

INTRODUCTION

Recently physicists and astronomers through their cosmological observational data discovered that the universe is undergoing the state of accelerated expansion at present time by Type Ia supernovae (SNeIa) (Riess *et al*. 1998; Perlmutter *et al*. 1999). The universe is spatially flat and dominated by exotic component with large negative pressure called 'dark energy', this observational data have been suggested by cosmic microwave background (CMB) (Bennett *et al*. 2003; Spergel *et al*. 2003) and large -scale structure (LSS) (Tegmark *et al*.2004a; Tegmark *et al*. 2004b). Our universe consists of 73% Dark Energy (DE) that causes cosmic acceleration, 23% dark matter (DM) and 4% ordinary matter (baryonic matter). This result was indicated byWilkinson Microwave Anisotropy Probe (WMAP) (Peebles and Ratra 2003; Padmanabhan 2003; Weinberg 1989; Carroll 2001). The most crucial problem in modern cosmology is to understand the acceleration of cosmic expansion. Transformation of earlier deceleration to present acceleration occurs due to exotic type of unknown force with positive energy density with negative pressure, called as dark energy. To solve the problem of dark energy, many activities is going on theoretical and observational sector of physics community. For explaining cosmic acceleration cosmological constant (Λ) is used, which is the most simplest and natural candidate for dark energy with equation of state $w_\Lambda = -1$ (Nojiri and Odinstov 2003).

Dynamical dark energy model like cosmological constant or vacuum energy (Weinberg 1989), quintessence scalar field models (Wetterich 1988; Ratra and Peeble 1988), k-essence (Chiba *et al*. 2000; Armendariz-picon *et al*. 2000; Armendarizs-Picon *et al*.2001), tachyon field (Sen 2002; Padmanabhan and Chaudhury 2002), Chaplygin gas (Kamenshchik *et al*. 2001; Bento *et al*. 2002), quintom (Elizalde *et al*. 2004; Anisimov *et al*.2005), phantom (Caldwell 2002) have been investigated the properties of dark energy. Different dark energy cosmologies (isotropic) with early deceleration and late time acceleration have been recently reviewed by Bamba *et al*. (2012). The accelerating expansion with quintessence/phantom nature in detail along with cosmography test has been represented by cosmological models like Holographic dark energy, coupled dark energy, f(R) gravity, f(R,T) gravity, f(T) gravity, Scalar field theory. These models have been studied by Bamba *et al*. (2012). Reddy *et al*. (2012) have investigated five dimensional dark energy models in a scalar tensor theory of gravitation. Ram *et al*. (2016) have investigated Kantowshi-Sachs cosmological model in the presence of an anisotropic dark energy within the frame work of Lyra geometry.

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"IMPLEMENTATION OF DISCRIMINANT FACE FEATURES EXTRACTION IN MULTIPOSE FACE RECOGNIZATION"

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ABSTRACT: *As one of the excellent learning and classification performance, SVM and ISVM has become a research topic in the field of machine learning and has been applied in many areas, such as face detection and recognition, handwriting automatic identification and automatic text categorization. Face recognition is a challenging computer vision problem. Given a face database, goal of face recognition is to compare the input image class with all the classes and then declare a decision that identifies to whom the input image class belongs to or if it doesn't belong to the database at all. In this paper, we proposed face recognition system using the discriminate face feature extraction in multipose face. In this paper, we study the concept of SVM and sophisticated classification techniques for face recognition using the SVM and ISVM along with the advantages and disadvantages.*

Keywords: Face Recognition, Machine Learning, Support Vector Machine, Classification, Genetic algorithm

1. INTRODUCTION

Face recognition is a major issue in the field of pattern recognition; its research contributes to not only the realization of intelligent machines, but also the promotion of the human visual system itself. For a long time, face recognition has gotten earnest concern from the researchers in pattern recognition, artificial intelligence, computer vision, physiology, and other fields, a variety of identification algorithms have been proposed, many commercial face recognition systems have been applied in real world widely[10].

There are three main methods of face recognition: structural matching method based on the characteristics, whole matching method and combination method. Geometric characteristics of the face, such as the location, size, relations of eyes, nose, chin and so on, are used to represent the face in structural matching method; in whole matching method, the gray image of whole face acts as input to train and test the classifier, such as the wavelet-based.

Elastic Matching, the principal component analysis and so on; combination method is a combination of the two former methods, usually the overall characteristics is used for a preliminary identification, and then local Features for further identification [10].

However, a major challenge of face recognition is that the captured face image often lies in a high-dimensional feature space. These high-dimensional spaces are too large to allow effective and efficiency face recognition. Due to the consideration of the curse of dimensionality, it is often essential to conduct dimensionality reduction to acquire an efficient and discriminative representation before formally conducting classification. Once the high-dimensional face image is mapped into lower-dimensional space, conventional classification algorithms can then be applied [11].

1.1 Basic Concept of SVM

Support vector machines (SVMs) are a general algorithm based on guaranteed risk bounds of statistical learning theory. A support vector machine (SVM) is a type of state-of-the-art Patten recognition technique whose foundations stem from statistical learning theory. We have found numerous applications, such as in face recognition, character recognition, face detection and so on [6]. In a support vector machine, the direct decision function that maximizes the generalization ability is determined for a two-class problem. Assuming that the training data of different classes do not overlap, the decision function is determined so that the distance from the training data is maximized. We call this the optimal decision function. Because it is difficult to determine a nonlinear decision function, the original input space is mapped into a high dimensional space called feature space. And in the feature space, the optimal decision function, namely, the optimal hyper plane is determined [9].

The basic principle of SVM is to find an optimal separating hyper plane so as to separate two classed of patterns with maximal margin. It tries to find the optimal hyper plane

A Spatial Domain Feature Based Approach For No Reference Image Quality Assessment of JPEG Compressed Images

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Abstract— **This is the world of technological advancement; where emphasis is more on data transfer and that too with higher speeds. This leads to higher bandwidth requirement. To resolve the bandwidth requirement problem various compression techniques are employed. But with this compression and data transfer new problems arises that is nothing but distortions. And at the same time it is also important to assess the quality of these images being processed and transferred. This paper presents a novel approach for image quality assessment without any reference. This paper focuses on JPEG compressed images which mainly suffers blocking and blurring artifacts. A spatial domain approach is employed along with histogram to quantify the distortion. Results are found to be correlating well with the subjective image quality assessment and various standard quality assessment parameters. Results are also found to be comparable to that of full reference quality assessment technique.**

Keywords— Image quality assessment; no reference; jpeg; subjective image quality assessment; full reference.

I. INTRODUCTION

World is getting closer with the growth in technology. Lots of multimedia data is exchanged over the latitudes with tighter bandwidth leading to advancement in compression technologies. These new compression techniques and processes have raised concerns over quality of data being compressed. Here in this paper we are dealing with the quality of jpeg compressed images. So it is important to assess the quality of such compressed images. Also distortions are introduced over transmission media leading to degradation in quality of the images. [1] The image quality assessment techniques are gaining lots of importance. There are basically two categories of image quality assessment techniques viz. subjective image quality assessment and objective image quality assessment. The subjective image quality assessment is considered to be most accurate of the two techniques. But it is time consuming in nature not practical since it cannot be implemented in real time. It is important to assess the quality of image in real time and automatically. And that's why objective image quality assessment comes into the picture. Objective image quality assessment technique can predict image quality score automatically through some well-defined algorithms. Objective image quality assessment can be further classified into three categories: full reference (FR), reduced reference (RR) and no reference (NR)

In full reference technique original image itself is available for the reference along with the distorted image. It is comparatively easy to assess quality using this technique since original image is present as reference. So by applying suitable algorithm image quality can be predicted. In reduced reference technique, some features of original image are available along with the distorted image for quality prediction [3]. Whereas in no reference image quality assessment technique reference image is not available for the quality assessment. Since in many practical applications original image is not available. So no reference technique is very much useful in these applications.

Many objective quality assessment matrices are available in literature such as peak signal to noise ratio (PSNR), mean squared error (MSE). But these measures are found to be less effective. Since they do not correlate well with the actual image quality. This has attracted researchers to develop new objective quality assessment algorithms. It is learned that human observers can assess the quality of perceived images easily without requiring for any reference. Many approaches have been proposed in the past for objective quality assessment which uses original image as the reference. However image quality assessment without using any reference seems to be a cumbersome task. Hence this domain has fascinated many researchers and lots of approaches have already been proposed in no reference method. The first remedy for such no reference methods seems to be the understanding of types of distortions introduced in the image. Various compression categories suffer different types of distortions. This paper concentrates on only

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Product development for future using rapid prototyping techniques

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Abstract - *Rapid Prototyping is a process to develop the impeccable final product. This technique used to make a quick model from 3Dimensional computer aided design. Rapid prototyping technique is help to create different types of model. Rapid Prototyping Technique has two types: additive manufacturing and subtractive manufacturing. In the Subtractive type of rapid prototyping, material removed from the solid to shape the piece and in another type of rapid prototyping, material is added to make the geometry. These are opposite in the process while creating the prototype.*

***Key Words*: 3D printing, rapid prototyping, manufacturing, product development**

1. INTRODUCTION

In current era, industries are working to improve the quality of the product. Reduction in time and flexibility in manufacturing are important while developing the product. Rapid prototyping is process which helps to improve the quality of product and reduce the prototyping cost. It is the automated process. Initial step to make prototype is design. Prototype made by compiling the CAD files. Rapid prototyping takes less time to build model. There are some methods in the rapid prototyping which is used in industries for manufacturing the product. The Rapid prototyping techniques are given below -

Stereolithography (SLA), Laminated object manufacture (LOM), Selective Layer Sintering (SLS), 3D Printing (3DP), Fused Deposition Modeling (FDM), Solid Ground Curing (SGC).

1.1 RAPID PROTOTYPING PROCESS CHAIN

In the process of rapid prototyping first create a CAD model by using CAD software. When CAD model completed then converted it into Standard Tessellation Language format. Standard Tessellation Language format is focus on surface geometry. After CAD model then process of construction physical model starts by using additive or subtractive type of rapid prototyping techniques. Build 3D model from liquid photo sensitive polymers when exposed to UV rays.

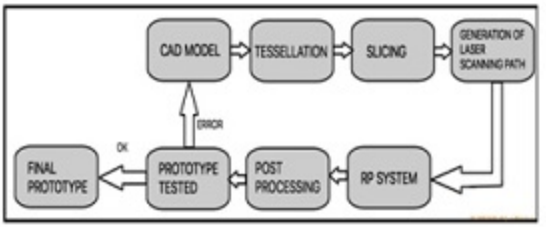

Fig- 1 Rapid prototyping process chain

1.2 STEREOLITHOGRAPHY

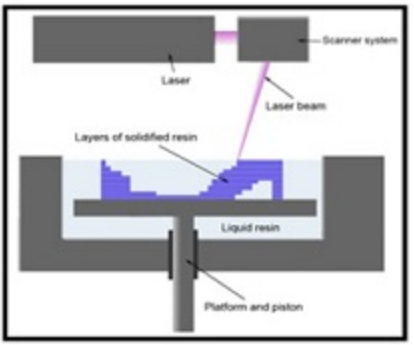

Fig 2 – Stereolithography

Layer of photopolymer uncovered on perforated platform. The UV laser is strike to perforated platform. Initial layer the object formed when UV-curable liquid hardens by UV laser when it is strike.

After initial layer hardened, the platform is lowered then new surface layer of liquid polymers exposed. The laser again traces a cross section of the object. This process is followed again and again. When object formed then it is drown in the tank. The platform is then lifted up to uncover object. It is free of excess resin by cleaning with the liquid solvent. The object is heated in an ultraviolet oven to further cure the plastic.

In this technique advantages of stereolithography are easy to obtain prototypes with a very good finish. It is to get complex geometric shapes. Prototype has good functional surface quality. Product has good finishing. Small parts with high details and up to one meter size of part can create. Its cost reasonable and about two day's parts can create with

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Stress reduction in implant using improved abutment

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Abstract - *The dental implant is used whenever real teeth failed. Dental implant is very important part in the field of dentistry. The production of dental implant helped to provide the dentist to planning it, placing into jaw bone and to restoring of missing teeth whenever it fails.*

An abutment is a part of dental implant which is used to fix over the implant part and below the crown. The crown is made by porcelain material which is used to be attached directly on the implant part. An abutment part which is used to fixed in implant to make dental implant strong and to improve the stability into jawbone. The dental abutment provides the retention into the implant, to support, to improve the stability and for the increase the final restoration in jawbone where it is fixed.

***Key Words*: Dental Implant, Abutment, Stress, Crown.**

1. Introduction

Teeth loss is a common problem in day to day life so for that the dental implant process is used. There are uses of dental implants on missing teeth is also a common thing to replace the real teeth. There are so many researches are done on dental implant designs to make proper and well-shaped. Its material is biomaterial which is convenient for body and the variations in technique of the implantation has increased more. In the field of dentistry many of work included related to the dental implant. Use of proper shape and sizes in design of dental implant, biomaterials which helps to avoid infection and surface modification is very essential to improve the durability of the dental implant.

In the dental implant there are various types of dimensions that are presently used for various types of bone quality. In dental implant, different types of abutments such as angular and straight are also presents.

2. Design of Dental Implant

In the dental implant, there are various types of sizes and shapes are available. These are helps to dental implants to fit in jawbone easily. There are changes in shapes and sizes of implant, types of threads, and its thickness is stated. There are number of design and sizes of abutment, crown are available. Proper size, shape of dental implant and quality of bone improve stability of dental implant in the jaw bone. There are parts which present in dental implant are given further.

1)Length:-

When forces act on dental implant the stress distribution is depends on its length and its diameter in the jawbone which is surrounded to implant. There are some lengths of dental implants which are increases from 6mm to 20mm.

2)Diameter:-

In the sizes of diameter of dental implant there are many of variability available. Diameter is important factor for the stability and retention of implant when it fixed into jawbone. When point related range is concern then diameter from 3mm to 7mm are used. If the dental implants diameter is wide then it helps to improve the stability. There are variations available for different type of bone quality.

3)Geometry:-

Dental implant has a many types of geometry such as cylindrical type of dental implant, conical type of shape and screw shape hollow cylindrical shape is also present. Some related studies are shows or focus on the conical implant surfaces that it occurs higher type of stresses as compared to use of screw shaped of geometry of dental implant.

4)Thread:-

In lower position of dental implant, threads are important part to fix into jawbone. It improves stability in jaw bone. Threads are also help to minimizing or reduce the stresses in the bone and implant when forced. In threads classification, the depth pitch thread, thread as flank angulation, some with the top radius of curvature and also the straight part present at the position of bottom side of the thread in implant.

3. CAD models of Dental Implant

All attachment in dental implant parts are made or generated with the help of Pro/E software. Crown, abutment, implant, bone and gums are made in the Pro/E software to make complete dental implant. Some images of three dimensional modeling are shown below.

Fig -1: Abutment

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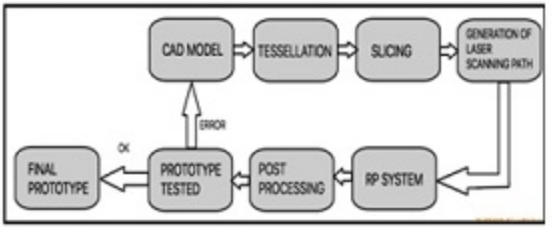

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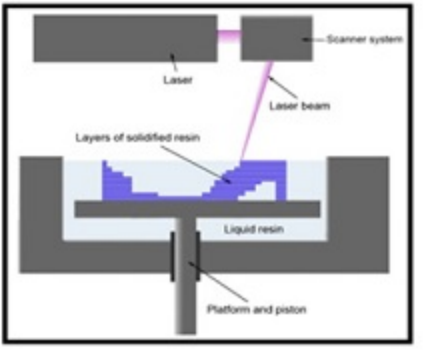

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Bianchi Type-I Dark Energy Cosmological Model With Polytropic Equation Of State In Barber's Second Self-Creation Cosmology

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Abstract *– In this paper, we have studied the Bianchi type-I universe with polytropic equation of state in the framework of the second self-creation theory of gravitation proposed by Barber [1]. The field equations have been solved by using (i) the power law relation between the average scale factor 'a' and the scalar field 'ϕ' and (ii) the special law of variation for Hubble's parameter proposed by Berman [2]. Some physical and kinematical aspects of the models are also discussed.*

Keywords - Bianchi type-I universe, Dark energy, second self creation theory.

I. Introduction

Modified theories of gravitation provide gravitational alternatives for dark energy to explain early inflation and late time acceleration of the universe. To extend the concept of theory of general relativity, Brans and Dicke [3] formulated a scalar tensor theory of gravitation which includes a long range scalar field interacting equally with all forms of matter with the exception of electromagnetism. Barber [1] has formulated two continuous self creation theories by the general relativity and Brans and Dicke (BD) theory. The Barber's first theory is a modification of BD theory and the second theory is a modification of general relativity. Several authors Mohanty [4, 5], Pradhan [6], Singh and Kumar [7], Rao [8, 9], Reddy [10], Katore [11], Pawar [12], Naidu [13] and Santhi [14] have investigated various cosmological models in Barber's second self creation theory.

In this paper, we have studied the polytropic gas model of dark energy to explain the cosmic acceleration of the universe. In stellar astrophysics, the polytropic gas model can explain the equation of state of degenerate white dwarfs, neutron stars and also the equation of state of main sequence stars (Christensen-Dalsgaard [16]). Mukhopadhyay and Ray [17] has been investigated the idea of dark energy with polytropic gas equation of state in cosmology. Recently, several authors Karami et al.[17], Karami and Ghaffari [18], Setare et al. [19], Taji and Malekjani [20], Rahman [21] and Adhav [22] have investigated polytropic gas models in different contexts.

For a physically realistic relativistic star we expect that the matter distribution should satisfy a barotropic equation of state $p_\Lambda = p_\Lambda(\rho)$. In this paper we assume the polytropic equation of state

$$p_\Lambda = K\rho_\Lambda^{1+\frac{1}{n}}, \tag{1}$$

where K is a real constant and n is the polytropic index (Christensen-Dalsgaard [16]).

Motivated by the above investigations, here we take up the study of anisotropic Bianchi type-I universe with polytropic equation of state in the framework Barber's second self-creation cosmology. This is relevant because of the fact that scalar field plays a vital role in the discussion of DE models.

This paper is organized as follows. In section 2, the metric and field equations are described. Section 3 is devoted to the solution of the field equations and we obtained physical properties of model using the law of variation of parameter. Section 4 we discuss the physical properties of models and section 5 contains some concluding remarks.

II. The Metric and Field Equations

We consider the homogeneous and anisotropic Bianchi type-I metric as

$$ds^2 = -dt^2 + A^2dx^2 + B^2dy^2 + C^2dz^2, \tag{2}$$

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Automated Question Paper Generating System Using Soft Computing Technique

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Abstract— ***Examination process is an important activity of an educational institute in testing the performance of a student. Generating an effective question paper is a task of great importance. Traditional methodology of generating question paper is manual in which professors need a lot of time and energy in framing a question paper. Framing of a question paper requires multiple parameters to be considered such as difficulty level, numerical and theoretical content of the paper, weightage of questions according to marks etc. Although these parameters are matter of great importance while deciding the format of paper manually. Evolutionary changes in computer technology has led to a change from manual to an automated system. In this paper an automated question paper generating system has been proposed which stores questions based on a particular course and generates a question paper based on the syllabus. Automated question paper generating system is software which can be used at various educational institutes wherein a huge database of questions would be needed from which a question paper could be generated with an ease. It mostly deals with collection, storing, sorting and administration of large number of questions. The system includes several modules like login module, administration module and professor module. Automated question paper generating system can be designed using algorithms and techniques***

Keywords— Genetic algorithm, Shuffling algorithm, permutation, computation, backtracking method

I. INTRODUCTION

Examination process is an important activity of an educational institute in testing the performance of a student. Generating an effective question paper is a task of great importance. Traditional methodology of generating question paper is manual in which professors need a lot of time and energy in framing a question paper. Framing of a question paper requires multiple parameters to be considered such as difficulty level, numerical and theoretical content of the paper, weightage of questions according to marks etc. Although these parameters are matter of great importance while deciding the format of paper manually. Evolutionary changes in computer technology has led to a change from manual to an automated system. In this paper an automated question paper generating system has been proposed which stores questions based on a particular course and generates a question paper based on the syllabus. Automated question paper generating system is software which can be used at various educational institutes wherein a huge database of questions would be needed from which a question paper could be generated with an ease. It mostly deals with collection, storing, sorting and administration of large number of questions. The system includes several modules like login module, administration module and professor module. Automated question paper generating system can be designed using algorithms such as apriori algorithm, fuzzy logic, genetic algorithm and shuffling algorithm and technique as utility based agent and backtracking test method. Automated question paper generating system will enable college authorities to automatically generate question paper. This system will work on methods of permutations and computations.

II. PROBLEM DEFINITION

Question paper generating system consist of several phases such as collection of data, classification, difficulty level etc. In the first phase all the questions are needed to be collected from the related expertise. All the gathered questions are to be stored and to store the question a database is to be designed first. Secondly all the gathered questions are needed to be classified as per the marks and at the last a paper needs to be generated depending upon the difficulty level without any repetitions or duplications. To avoid the repetition and duplication of questions the method of permutation and computation will be used.

III. RELATED WORK

Traditional method of generating a question paper have a few shortcomings. It was a paper based system in which the paper setter has to refer to all the previous question papers and set paper accordingly which was time consuming. Existing question paper generating system makes uses of various techniques such as utility based agent, genetic algorithm, shuffling algorithm, randomization algorithm, backtracking, intelligent algorithm etc.

A. Techniques and Methodologies

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BIANCHI TYPE I WITH STRANGE QUARK MATTER ATTACHED TO STRING CLOUD IN BIMETRIC THEORY

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ABSTRACT

In this paper, we investigate bianchi type I cosmological model with strange quark matter attached to the string cloud in Rosen's(1973) bimetric theory. Some physical and geometrical properties are also discussed. It is shown that bianchi type I cosmological model do not exist in case of strange quark matter attached to the string cloud in bimetric theory. Hence only vacuum model can be obtained.

Keywords: *Bianchi type-I space time, quark matter, bimetric theory.*

INRODUCTION

The bimetric theory proposed by Rosen [1] refers to a class of modified Einstein's theories of gravity, in which two metric tensors are used. These two metric tensors are the Riemannian metric tensor g_{ij} and the background flat space-time metric tensor f_{ij}. The background flat space-time metric tensor f_{ij} refers to inertial forces. The metric tensor g_{ij} describes the Riemannian geometry of a curved space-time which plays the same role as given in the Einstein's general theory of relativity. The background metric tensor f_{ij} refers to the geometry of empty (free from matter and radiation) universe and hence describes a space-time of constant curvature. This metric tensor has no direct physical significance but appears in the field equations. Moreover, the bimetric theory also satisfies the covariance and equivalence principles. The theory agrees with the present observational facts pertaining to general relativity.

The field equations of bimetric theory of gravitation proposed by Rosen [1] are

$$N_j^i - \frac{1}{2} N \delta_j^i = -8\Pi k T_j^i \quad (1)$$

where

$$N_j^i = \frac{1}{2} f^{ab} (g^{hl} g_{hj|a})_{|b}$$

and

$N = N_j^i$, $k = \sqrt{\frac{g}{f}}$ together with $g = \det(g_{ij})$

and $f = \det(f_{ij})$

The vertical bar (|) indicates covariance differentiation with respect to f_{ij} and T_j^i is the energy–momentum tensor of the matter field.

Several aspects of bimetric theory of gravitation have been studied by various researchers

Reddy et al [2] have established the non-existence of axially symmetric cosmological model with domain walls and cosmic string. Bali and Pradhan [3] have investigated Bianchi type-III string cosmological model with time-dependent bulk viscosity. Rao et al[4] have studied Bianchi type-I string cosmological models in bimetric theory of gravitation. Yavuz et al. [5] and Yilmaz [6,7] have studied 5-D Kaluza-Klein cosmological models with quark matter attached to the string cloud and domain walls. Sahoo et al.[8] have studied bianchi type cosmic string models coupled with Maxwell fields in this theory. Letelier [9] has solved Einstein field equations for a cloud of massive strings and obtained cosmological models in Bianchi type-I and Kantowaski-Sachs space-time. Itoh [10], Bodmar [11] have formed two ways for creation of strange quark matter. One is thequarkhadron phase transition in the early universe and another is the conversion of neutronstars into strange ones at ultrahigh density. In strong interaction theories it is supposed that breaking of physical vacuum takes place inside hadrons to form quark bag model. As a result vacuum energy densities inside and outside a hadron become essentially different, and the vacuum pressure on the bag wall equilibrates the pressure of quarks, thus stabilizing the system. Sahoo [12] has discussed inhomogeneous plane symmetric string cosmological models in bimetric theory of gravitation. Katore and Rane [13] have

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PLANE SYMMETRIC UNIVERSE WITH INTERACTING DARK MATTER AND HOLOGRAPHIC DARK ENERGY

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ABSTRACT

Here in this paper we present a plane symmetric universe filled with interacting dark matter and holographic dark energy. Solution of Einstein field equation is obtained by using condition that shear scalar is proportional to expansion scalar. The Statefinder diagnostic pair i.e. $\{r,s\}$ is adopted to distinguish our dark energy models from other existing dark energy models. The physical and geometrical feature of the model is also discussed.

Keywords: *Plane symmetric universe, Interacting dark matter, Holographic dark energy, Statefinder parameters, Coincidence parameter.*

INTRODUCTION

Universe is expanding in an accelerating manner and this has been evidenced by recent observations of Type Ia Supernovae team (Riess et al.1998; Permutter et al. 1999), CMB (Bennett et al. 2003; Spergel et al 2003) and WMAP data (Tegmark et al. 2004a, 2004b) . Two dark energy components known as CDM (the pressureless cold dark matter) and DE (dark energy with negative pressure) are importuned to explain these observations. The acceleration of the distance Type Ia Supernovae has been caused by DE, which contributes $\Omega_{DE} \sim 0.7$. The theoretical interpretation of the galactic rotation curve and large scale structure formation have been given by CDM (Cold dark matter), which provides $\Omega_{DE} \sim 0.7$. To satisfy the present value of dark energy, the cosmological constant (Λ) should be extremely fine-tuned. Which is the simplest component for dark energy having equation of state ate $\omega = -1$ and is favored by the present observational data. (Weinberg 1989; Carroll 2001; Peebles and Ratra 2003; Padmanabhan 2003)

This unknown dark sector of the energy context of the universe has been describe by different models, starting from the inclusion of exotic component in the context of general relativity to the modification of the gravitational theory itself , such as a quintessence (Wetterich 1988; Ratra and Peebles 1988), K-essence (Chiba et al. 2000, Armendariz-Picon et al. 2000; Armendariz-Picon et al. 2001), tachyon field (Sen 2002; Padmanabhan and Chaudhury 2002), phantom field (Caldwell 2002; Nojiri and Odinsstov 2003a, 2003b), the dark energy models including Chaplygin gas (Kamenshchik, et al. 2001; Bento et al. 2002), quintom (Elizalde, et al. 2004). Cosmic acceleration is a challenge for modern cosmology in split of these attempts. Early deceleration and late time acceleration with different dark energy cosmologies (isotropic) have been reviewed by Bamba et al. (2012). Among these f(R) gravity, f(R,T) gravity, f(T) gravity, Scalar field theory, holographic dark energy, coupled dark energy and ΛCDM cosmological model representing the accelerating expansion with quintessence phantom nature in detail along with cosmography tests have been studied by them.

According to some basic quantum gravitational principle, the nature of dark energy can also be studied, for example holographic dark energy principle. According to this principle, the degree of freedom in a bounded system should be finite, and does not scale by its volume but with its boundary era (Susskind 1995). Cohen et al.(1999) discovered that for a system with ultra violate (short distance) cutoff scale Λ and infrared (long distance) cutoff scale L without decaying into, a black hole, the quantum vacuum energy should be less than or equal to the mass of a black hole, (*i.e.* $L^3\rho_\Lambda \leq LM_p^2$). Here ρ_Λ is the vacuum energy density and $M_p = (8\Pi G)^{-\frac{1}{2}}$ is the reduced plank mass. With the help of this idea in cosmology, one can take L which satisfies this inequality with ρ_Λ

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BIANCHI TYPE-VI_0 ANISOTROPIC DARK ENERGY MODELS WITH ELECTROMAGNETIC FIELD IN LYRA'S GEOMETRY

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ABSTRACT

In this article we have studied the Bianchi type-VI_0 anisotropic dark energy cosmological models filled with electromagnetic field in Lyra geometry. The Einstein field equations have been solved exactly by using the special law of variation for Hubble's parameter proposed by Berman (1983). Some physical and kinematical properties of the models are also discussed.

Keywords. *Bianchi type-VI_0 universe, anisotropic dark energy, Electoromagnetic field, Lyra Geometry.*

INTRODUCTION

The astronomical observation of SN Ia (Riess [1], Perlmutter [2]), galaxy redshift survey (Fedli [3]), cosmic microwave background radiation (CMBR) data (Caldwell [4], Huang [5]) convincingly suggest that the rate of expansion of our universe is positive, i.e. we live in an accelerating expanding universe. The most surprising and counterintuitive result coming from these observations is the fact that only ~ 4% of the total energy density of universe is in the form of baryonic matter, ~ 24% is non-baryonic matter and almost ~ 72% is completely unknown component with negative pressure. In the literature, the component with negative pressure is named as dark energy (DE) that produces repulsive force which gives rise to the current accelerating expansion of universe.

The Einstein [6] in 1916 proposed his theory of general relativity (GR) which provides a geometrical description of gravitation. Many physicists attempted to generalize the idea of geometrizing the gravitation to include a geometrical description of electromagnetism. One of the first attempts was made by Weyl [7] who proposed a more general theory by formulating a new kind of gauge theory involving metric tensor to geometrize gravitation and electromagnetism. But Weyl theory was criticized due to non-integrability of length of vector under parallel displacement.

Later, Lyra [8] suggested a modification of Riemannian geometry by introducing a gauge function into the structure less manifold which removes the non-integrability condition. This modified geometry is known as Lyra geometry. Subsequently, Sen [9] formulated a new scalar-tensor theory of gravitation and constructed an analogue of the Einstein's field equations based on Lyra geometry. He investigated that the static model with finite density in Lyra manifold is similar to the static model in Einstein's general relativity. Halford [10] has shown that the constant displacement vector field β in Lyra geometry plays the role of cosmological constant Λ in general relativity. He has also shown that the scalar-tensor treatment based in Lyra geometry predicts the same effects, within observational limits, as in Einstein's theory (Halford [11]). Katore et al. [12] studied the Einstein Rosen Bulk viscous cosmological model with bulk viscosity and zero-mass scalar field in Lyra's geometry. Ghate [13], Asagar and Ansari [14, 15], Das and Sarma [16] studied the Bianchi type-V string cosmological model in Lyra's geometry with dark energy. SubbaRao [17] studied the Kantowski-Sachs cosmological model in Lyra's geometry in presence of bulk viscous string cosmological fluid and Sahu et al. [18] studied the Bianchi type-III cosmological model in Lyra's geometry.

There are many candidates of dark energy, among which magnetized (DE) is recently have been studied by many authors. The large scale magnetic fields can be detected by observing their effects on the CMB radiation. These fields enhance anisotropies in the CMB, since the expansion rate will be different depending on the directions of the field lines [19, 20]. Sharif and Zubair [21, 22], Katore et al. [23], Ghate and Sontakke [24] studied some cosmological model in presence of magnetized anisotropic dark energy.

Sharif [22] has investigated the effect of electromagnetic field on the dynamics of Bianchi

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Kantowski-Sachs Two-Fluid Cosmological Model With Negative Constant Deceleration Parameter in Lyra's Geometry

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Abstract:

This paper is devoted to study Kantowski-Sachs two fluid model within the framework of Lyra's geometry. We obtain exact solutions of the field equations with a time-dependent displacement vector. The solutions to the Einstein field equations are obtained using gamma law and exponential form. The physical and kinematical properties also have been discussed.

Keywords: Cosmological model, Lyra's geometry, two-fluid, negative deceleration parameters.

Introduction

Einstein's general relativity has been very successful in describing gravitational phenomenon. After the formulation of general relativity by Einstein, many alternative geometric theories have been developed in order to explain gravitation phenomena. Inspired by geometrizing gravitation, Weyl [1] proposed a more general theory in which both gravitation and electromagnetism are described geometrically. For a long time, Weyl's theory was not taken seriously due to non-integrability of length of vector under parallel displacement. Lyra [2] proposed a new modification of Riemannian geometry by introducing a gauge function to remove the non-integrability of the length of a vector under parallel transport. This modified Riemannian geometry is known as Lyrs's geometry. Subsequently Sen[3], Sen and Dunn [4] suggested a new scalar tensor theory of gravitation and constructed an analogue of the Einstein field equations based on Lyra's geometry which in normal gauge.

Halford [5] pointed out that the constant displacement vector field ϕ_i in Lyra's geometry plays the role ofa cosmological constant in the normal general relativistictreatment. Halford[6] showed that the scalar-tensor treatment based on Lyra's geometry predicts the same effect, within observational limits, as in Einstein's theory. Some of the authors, Bhamra [7], Karade and Borikar [8], Kalyanshetti and Waghmode [9],Reddy and Innaiah [10],Beesham[11], Reddy and Venkateswarlu [12] ,Soleng [13]have studied various cosmological models in Lyra's geometry with a constant displacement field. However, this restriction of the displacement field to be a constant is merely one of convenience and there is no a priori reason for it. Singh et al.[14-17] have studied Bianchi Type I, III and Kantowski-Sachs cosmological models with time dependent displacement field and have made a comparative study of Robertson- Walker models with a constant deceleration parameter in Einstein's theory with a cosmological term and in the cosmological theory based on Lyra's geometry. Singh and Desikan [18] explored a new class of cosmological models in Lyra's geometry.

Bianchi Type-I Dark Energy Cosmological Model With Polytropic Equation Of State In Barber's Second Self-Creation Cosmology

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Abstract *– In this paper, we have studied the Bianchi type-I universe with polytropic equation of state in the framework of the second self-creation theory of gravitation proposed by Barber [1]. The field equations have been solved by using (i) the power law relation between the average scale factor 'a' and the scalar field 'ϕ' and (ii) the special law of variation for Hubble's parameter proposed by Berman [2]. Some physical and kinematical aspects of the models are also discussed.*

Keywords - Bianchi type-I universe, Dark energy, second self creation theory.

I. Introduction

Modified theories of gravitation provide gravitational alternatives for dark energy to explain early inflation and late time acceleration of the universe. To extend the concept of theory of general relativity, Brans and Dicke [3] formulated a scalar tensor theory of gravitation which includes a long range scalar field interacting equally with all forms of matter with the exception of electromagnetism. Barber [1] has formulated two continuous self creation theories by the general relativity and Brans and Dicke (BD) theory. The Barber's first theory is a modification of BD theory and the second theory is a modification of general relativity. Several authors Mohanty [4, 5], Pradhan [6], Singh and Kumar [7], Rao [8, 9], Reddy [10], Katore [11], Pawar [12], Naidu [13] and Santhi [14] have investigated various cosmological models in Barber's second self creation theory.

In this paper, we have studied the polytropic gas model of dark energy to explain the cosmic acceleration of the universe. In stellar astrophysics, the polytropic gas model can explain the equation of state of degenerate white dwarfs, neutron stars and also the equation of state of main sequence stars (Christensen-Dalsgaard [16]). Mukhopadhyay and Ray [17] has been investigated the idea of dark energy with polytropic gas equation of state in cosmology. Recently, several authors Karami et al.[17], Karami and Ghaffari [18], Setare et al. [19], Taji and Malekjani [20], Rahman [21] and Adhav [22] have investigated polytropic gas models in different contexts.

For a physically realistic relativistic star we expect that the matter distribution should satisfy a barotropic equation of state $p_\Lambda = p_\Lambda(\rho)$. In this paper we assume the polytropic equation of state

$$p_\Lambda = K\rho_\Lambda^{\frac{n+1}{n}}, \tag{1}$$

where K is a real constant and n is the polytropic index (Christensen-Dalsgaard [16]).

Motivated by the above investigations, here we take up the study of anisotropic Bianchi type-I universe with polytropic equation of state in the framework Barber's second self-creation cosmology. This is relevant because of the fact that scalar field plays a vital role in the discussion of DE models.

This paper is organized as follows. In section 2, the metric and field equations are described. Section 3 is devoted to the solution of the field equations and we obtained physical properties of model using the law of variation of parameter. Section 4 we discuss the physical properties of models and section 5 contains some concluding remarks.

II. The Metric and Field Equations

We consider the homogeneous and anisotropic Bianchi type-I metric as

$$ds^2 = -dt^2 + A^2dx^2 + B^2dy^2 + C^2dz^2, \tag{2}$$

Synthesis and luminescence studies of Eu (III) doped $Sr_2P_2O_7$ phosphor for white LED applications

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Abstract. Europium (III) doped distrontium diphosphate ($Sr_2P_2O_7$) is synthesized by slow vaporization method and its luminescence properties are carried out. Using X-Ray diffraction, the crystal structure of this material was confirmed. Photoluminescence (PL) measurement make clear the phosphor exhibited intense emission at 593 nm (yellow) and 612 nm (orange) respectively corresponding to $5D_0 \rightarrow 7F_1$ and $5D_0 \rightarrow 7F_2$ transitions of Eu^{3+} on excitation with most favourable 394 nm wavelengths. The remaining excitation peaks at 381 nm and 465 nm with broad band 200-310 nm are also witness in the excitation spectra. The particle morphology using SEM images shows micro level particles for this phosphor. The effect of concentration of Eu^{3+} ions on the PL intensity has also been investigated. It has been observed that the powder sample exhibits highest PL emission intensity for Eu^{3+} concentration of about 0.02 moles. The emission spectra exhibit orange performance (CIE chromaticity coordinates: X = 0.672, Y = 0.328), which is due to the $5D_0 \rightarrow 7F_2$ transitions of Eu^{3+} ions. This phosphor is very good for white LED applications.

Keywords: Luminescence; $Sr_2P_2O_7$; Slow vaporization Method; Europium, White LED

INTRODUCTION

The polymorphic material Sr2P2O7 has low-temperature β-phase as tetragonal [1] while the high-temperature α-phase as the non Centrosymmetric Pna21 space group [2] subsequently revised to the Centrosymmetric Pnam space group [3]. Looking behind the previous literatures, high temperature solid state reaction [4-6] and co-precipitation methods [7] are preferably used for the preparations of this phosphor. We tried a new method for the synthesis of pyrophosphates called slow Evaporisation method keeping in mind the thermoluminescence properties of it. During the synthesis special attention was given on the variation of temperature. Depending on the synthesis temperature, the PL peak shows variations in their structure and peak positions.

We have already study rare earth doped phosphates $Ca_2P_2O_7$ [8-9] by solution combustion synthesis method [10-12]. Not only doped but also pure pyrophosphates are supposed to be very important because of their multipurpose belongings including luminescent, dielectric, semiconductor, catalytic, magnetic, fluorescent and ion-exchange properties. Hence researchers turned towards the synthesis of pyrophosphates [13]. Recently, Doat et al [14] and Schipper et al [15] proposed the luminescent applications of europium-doped calcium pyrophosphates and hafnium pyrophosphate. Hence we proposed the luminescence properties of this phosphor for it's used in white LED applications

EXPERIMENTAL

Polycrystalline $Sr_2P_2O_7$: Eu^{3+} phosphor is prepared by slow Evaporisation method. Strontium nitrate [$Sr(NO_3)_2$] and di-amonium hydrogen orthophosphate [$(NH_4)_2HPO_4$] is added together with Eu_2O_3 (activator). Doubled distilled water is added in this combination. Mixing thoroughly about 10 minutes, milky solution is obtained. Now this solution is kept for slow evaporation at 100 °C for about 8 hours. The obtained white precipitate was kept under hot light for a

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SOLAR COOLING SYSTEM RELATED PROBLEMS AND RESTORATIONS: A REVIEW

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Abstract - *Solar cooling system allude to devices and processes that the advantage of using water or salt solution, and can be used as stand-alone systems. Cooling can be provided by both active and passive systems. The capacity of solar cooling devices is generally at its peak when insolation, i.e. solar irradiation, is highest. It can ideally meet the needs of countries in sunny weather areas where the demand for cooling is high. The main goal of this review paper is to provide a general overview of existing solar cooling technologies and problems regarding to solar cooling systems. For the purpose of this review the definition of solar cooling was not limited to technologies using solar radiation for air conditioning of buildings. Other applications such as cooling of water, refrigeration of sensitive goods, e.g. medicaments or desalination of seawater, were also included.*

Key Words: Solar cooling system, solar panels, solar energy, collector system, heat.

1. INTRODUCTION

Solar cooling system is a system which is operated on solar power. This is done by using passive solar, solar thermal energy conversion and photovoltaic conversion i.e. sunlight to electricity. Through 2012 funding for new air conditioning research and development program which was created by act of 2007 created in 2008 (The U.S. Energy independence and security) due to this multiple new technology innovations and mass production economies of scale are develop and demonstrate. Solar cooling system might play an increasing role in zero-energy and energy-plus buildings design. In the 19th century, the most common fluid for absorption cooling was a solution of water and ammonia. Now a day, the combination of lithium bromide and water is also in most common use.

2. Solar Cooling System

In solar cooling system, common solar thermal system which is made up by the solar collectors or solar panels, a storage tank, a control unit, pipes and pumps and a thermally driven cooling machine A typical layout of a solar cooling plant is shown in fig 1.

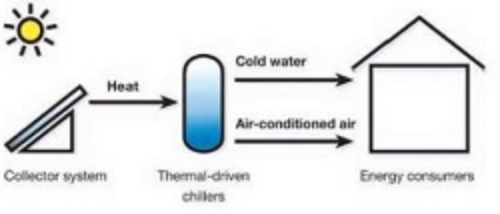

Fig -1: Solar cooling system

3. PROBLEMS RELATED TO SOLAR COOLING SYSTEM

3.1 Weather Dependent

Solar energy panels used for cooling have one obvious requirement i.e. The Sun. If you choose solar cooling system, you could have a significant problem on days where the skies aren't clear enough for the panels to soak up the sun's energy. The problem mainly focused if you have a bad weather, a bad weather season or a bad weather region. Solar powered cooling system is simply not effective in areas that do not have many hours of strong sunlight.

3.2 Tracking the Sun

For optimal efficiency, solar energy panels need to constantly be directed towards the sun. Ideally, panel adjustments should be made each season, but most solar panel owners usually mount them in a fixed position for the latitude of the area they're in, which means they are not optimally positioned for year-round use.

3.3 Cleaning

Solar panels need to be oriented and cleaned. Cloudy weather condition is not suitable for the system. Solar energy systems are normally set up at high on a roof, but with snow and sleet, it becomes tricky and hard to clean.

Consumer attitude towards the Product Placement in movies and TV serials

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Abstract: Marketers have always been looking for alternative ways to reach the target population with their messages. One approach that has grown the last decades is product placement that has become a large arena for companies to involve in their marketing communication. It has been shown that people tend to dislike traditional advertisement such as commercial brakes in TV and tries to avoid it by switching channel. Since product placement is a type of advertisement that is embedded in a movie or TV-show and cannot be zapped away without missing the story of the movie or TV-show, it is a good opportunity to reach out with a company's message. The purpose of this study is to investigate what attitudes the audience has towards product placements in Movies and TV-shows, which will lead to a greater knowledge for marketing managers about the attitudes towards product placement . This research paper is an attempt of exploratory research, based on mainly secondary data collected from various sources, such as reference books, magazines, journal, and research papers & websites.

Keywords :Product Placement, Branding, Consumer Behaviour

I. INTRODUCTION

Branding is a way to differentiate a company from others in the competitive market. A Brand is build up by a name with different signs, symbols and attributes that together makes a company´s brand unique through marketing communication a company can be able to promote its products or services for the consumers. Even if a company has good products or services it is still important that prospect customers recognize their existence and learn about the value the company can be able to give them. Therefore marketing communication is essential for a company's success. Companies advertising strategy is consisted of two elements: the created advertising message and the selection of advertising media. In a world where an average person is exposed to around 1,600 ad messages a day, advertising can only succeed if the ad gains attention and is communicated well (Armstrong et al., 2009).Marketers are always looking for alternative methods to convey their messages and communicate with their target population. One approach that has continued grown and received attention the last decades is product placements. The practice of product placements where brands are placed into media content, mainly in movies and TV-shows is not new. Product placements have a history back to themid-1890s but it was not until 1982 with the blockbuster movie "E.T.: The Extra Terrestrial" with the placement of Reese's Pieces candy that the real product placements industry was born. After the movie release, Reese's Pieces increased their sales with 65 % and other marketers saw the benefits with product placements For what has been an effective tool for reaching audiences for more than 50 years, the role of product placements has shifted from being a part of the background settings to being a substantial part of a movie or TV-show (Yang & Roskos-Ewoldsen, 2007). For instance that James Bond is driving a kitted up Aston Martin car in the movie Casino Royale (Campbell,2006) and in the movie Castaway (Zemeckis, 2000) where Tom Hanks is stranded on a emptyisland with numerous of FedEx packages that helps him to survive and he even creates arelationship with a Wilson volleyball, that he aptly names Wilson. The different types ofproduct placement can be divided into two types of placements; prominent and subtle.Prominent placements is easy to notice and can be very obvious through showing, using ortalking about the brand while subtle placement is harder to notice and does often occur in the background (Ferraro & Avery, 2000).

How about in India ?

Though there has been a longer history of brand placements in Indian films but not enough research has been conducted to prove its effectiveness. The earliest reference of a brand placement comes in the 1940 classic Chalti Kaa naam Gadi with the brand Coca Cola. The movie Dilwale Dulhanyiyan Le Jayenge of the 1990s was a successful story of launching of Stroh bear in Indian market. Today, product placement is used as an often used strategy for the advertisers in Hindi films.The practice of product placement has proliferated due, in part to the high level of message clutter in traditional

A STUDY OF THE IMPLICATIONS OF AMBUSH MARKETING VIS-À-VIS THE STAKEHOLDERS INVOLVED

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Abstract: ***The Ambush marketing or ambush advertising is a marketing strategy in which an advertiser "ambushes" an event to compete for exposure against competing advertisers. Most forms of ambush marketing capitalize on the prominence of a major event through marketing campaigns that associate an advertiser with it, but without actually having paid sponsorship fees to the event's organizer to identify themselves as an "official" partner or sponsor. This study has been undertaken to offer an insight into the concept of Ambush Marketing along with its future implications.***

INTRODUCTION

AMBUSH MARKETING – AN INSIGHT

- As in biology, parasite means those living organisms that live on food made by other living creatures. Parasitic marketing means taking the advantage of value of a major event publicity i.e. that product or company live on food made by other events.
- Marketing guru Jerry Welsh has first coined the word Ambush marketing as a situation in which a company or product seeks to ride on the publicity values of a major event without having to finance the event through sponsorship.
- Thus it means an activity when companies try to pass themselves off as official sponsors when they are not.
- It is thereby an attempt by a third party to associate itself directly or indirectly with an event(s) or the event(s) participant(s), typically major sporting events like the Olympics or the World Cups, without their sanction, thereby depriving the official sponsors, suppliers and partners of much of the commercial value deprived from the official designation.
- Most of these activities are done during major sporting events.
- Another way Ambush marketing explained is pretending to be a sponsor of a major sporting events but actually not being a sponsor i.e. without paying requisite fees.

RESEARCH METHODOLOGY

This study gives an insight into the Ambush Marketing, and the trends of its emergence have been described. With the insight, it continues with the types of ambush marketing, the strategies to be followed in ambush marketing plans and the process to be followed in its implementation.

The research work is mostly based on the information collected through -

- Journals, books and articles assessed through the British Council library
- Newspapers
- Hoardings and Billboards.
- Organizing view poll through Orkut
- Online survey
- Internet

OBJECTIVES

- To understand the concept, it's applicability and its consequences.
- To understand its implications on the ambusher, event organizer, official sponsors and general public.
- Is it ethical to practice ambush marketing at my work place or my business in near future?

LITERATURE REVIEW

Ambush marketing can be classified in two classes-

1. **Direct ambush marketing**. In 1994 football world cup, MasterCard received exclusive rights for using world cup logo, but a rival Sprints communication used the logo without permission. This is direct attack but can be defended by laws.
2. **Indirect ambush marketing**. Several ways indirect ambush marketing can take place like sponsoring the broadcast of the event, sponsoring subcategories of the major event etc.

For example: Pepsi's hugely successful campaign on the slogan nothing official about it during the 1996 cricket World Cup, for which rival Coke was one of the official sponsors.

Main consequences of ambush marketing are –

- The commercial value of the event decreases.
- It creates unhealthy competitive environment.
- It may adversely affect the funding of the event.
- Every company would like to be an ambusher instead of paying a huge amount for sponsoring.

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"ROLE OF BOLLYWOOD CELEBRITIES IN SOCIAL SERVICES ADVERTISEMENTS-A STUDY"

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ABSTRACT:-

Celebrity Endorsement plays very important role in modern day's social services ad campaigns. A celebrity ambassador can help build trust with current and potential customers, increase the chances of the brand being remembered, and attract a new type of audience.

Endorsements also may increase the consumer's desire for a the services and products
Advertising has become a part of culture in our society. The practice of Celebrity Endorsement in advertising plays a pivotal role in making advertising into our culture. The use of celebrity endorsement has been on rise and its phenomenon worldwide. If the world were full of all wise men & women, we would have never heard of a term called "Advertisement". And then good products would have found the right customers and grown to prosperity. Firms would have worked out a mathematical formula to sell and succeed. But buying process isn't rational and so is this world. Today, the business firms are trying out different ways in advertisement to increase their sales. Indians are diehard movie and sport buffs & and this aspect of the consumer has invited the concept of celebrity endorsement to the world of advertisement.

KEYWORDS: *Celebrity, Advertisements, Bollywood, Social Services Campaigns.*

1.1:-Advertisement:-

Advertising is one of the integrated marketing communication tools. Apart from other promotional mixes such as Personal selling, Direct Marketing, Publicity & Public Relation, Advertising helps in commercial marketing as well as in solving various social issues & Causes.

1.2:-Bollywood Celebrities:-

Bollywood and advertisements have a mutually beneficial relation, so where companies feel that the addition of a star will attach authenticity to a product – Amir Khan's Coke ad or Amitabh Bacchan's Cadbury endorsement despite being shrouded in controversy, stars promote a brand to build on to their image or cash in on their popularity and earn an enormous amount in less than half the time required for a film.

1.3:-Social Services Advertisements:- PSA-Public Service Advertisements.

A public service advertisement or campaign is a message in the society interest percolate without charge, with the aim of raising awareness, changing society's attitudes and perception towards a social issue.

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Data Mining Classification Techniques and Applications: A Study

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ABSTRACT

Data mining is a procedure which discovers helpful examples from enormous measure of information. The paper talks about few of the information mining methods, calculations and a portion of the associations which have adjusted information mining innovation to improve their organizations and discovered great outcomes. A Classification is one the most valuable and significant systems. Characterization systems are helpful to deal with enormous measure of information. Characterization is utilized to anticipate straight out class marks. Arrangement models are accustomed to characterizing recently accessible information into a class mark. Order is the way toward finding a model that depicts and recognizes information classes or ideas. Characterization strategies can deal with both numerical and all out qualities. Developing quick and exact classifiers for huge Model utilized for obscure tuple testing informational index informational indexes is a significant undertaking in information mining and learning disclosure.

