Criteria 3: Research, Innovations and Extension

Key Indicator – 3.3 Research Publications and Awards

3.3.5 Number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings per teacher during the last five years (8)

Index

Sr. No.	A.Y	Computer Engineering	E&TC Engineering	Mechanical Engineering	Civil Engineering	First Year Engineering	Total Count
1	2017-18	06	11	06	08	02	33
2	2016-17	04	02	11	05	00	22
3	2015-16	02	00	14	06	03	25
4	2014-15	01	05	04	03	00	13
5	2013-14	04	03	03	02	00	12

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ICASETM 2018

20th & 21st April - 2018, Pune, Maharashtra

This is to certify that **K. R. Suryawanshi**

of *Rajgad Dyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi* presented his/her research paper titled "Performance of Microbial Fuel Cell with Clayware Wall Separation Subjected to Variation in Area of Separation, Permeability, Temperature" during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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Gorakhanath Jadhav

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research paper titled Wall Separation Subjected to Variation in Area of Separation, Permeability, Temperature

in International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM-2018)

on 20th & 21st April, 2018

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Performance of Microbial Fuel Cell with Clayware Wall Separation Subjected to Variation in Area of Separation, Permeability, Temperature

G. S. Jadhav., Rajgad Dnyanpeeth Technical Campus, SCSCOE, Dhangwadi, Tal- Bhor, Pune Maharashtra, India
K. R. Suryawanshi., Rajgad Dnyanpeeth Technical Campus, SCSCOE, Dhangwadi, Tal- Bhor, Pune Maharashtra, India
S. P. Salunkhe., Rajgad Dnyanpeeth Technical Campus, SCSCOE, Dhangwadi, Tal- Bhor, Pune Maharashtra, India
R. R. Fulari., Rajgad Dnyanpeeth Technical Campus, SCSCOE, Dhangwadi, Tal- Bhor, Pune Maharashtra, India
M. Wagh., Rajgad Dnyanpeeth Technical Campus, SCSCOE, Dhangwadi, Tal- Bhor, Pune Maharashtra, India
R. J. Raut., Rajgad Dnyanpeeth Technical Campus, SCSCOE, Dhangwadi, Tal- Bhor, Pune Maharashtra, India

Abstract:—

Microbial fuel cells (MFCs) are devices that can used to convert chemical energy stored in biodegradable materials into electrical energy. Sustainable energy recovery from organic wastes is gaining a research interest from last few years. Microbial fuel cell will be cost effective technology, if replace costlier proton exchange membrane with cheapest alternative. Hence, the performance of MFCs was evaluated using soil partition as alternative to proton exchange membrane. Performance of six microbial fuel cells (MFCs) was investigated in terms of current, columbic efficiency and chemical oxygen demand removal efficiency under batch mode of operation using aerated distilled water as a cathodic electrolyte. Effect of permeability, surface area of partition, ambient temperature variation and substrate concentration were evaluated. It was observed that current and coulombic efficiency increases with increase in surface area and permeability of partition wall. It was observed that ambient temperature plays vital role in energy harvesting and treatment efficiency.

Keywords:-

MFC, Current, Voltage, Bio-energy, Waste water treatment, Alternative to PEM

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This is to certify that **SHITAL SALUNKHE**

of Rajgad Dnyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi presented his/her research paper titled *Retrofitting of Existing Structure with CFRP by using Pushover Analysis*

during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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Mr. G. S. Jadhav

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Retrofitting of Existing Structure with CFRP by using Pushover Analysis

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2nd & 21st April - 2018, Pune, Maharashtra

Mr. K. R. Suryawanshi

Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

Strengthening of Concrete Structure with CFRP by using Pushover Analysis

Dr. S. B. Patil

Retrofitting of Existing Structure with CFRP by using Pushover Analysis

S. P. Salunkhe., Asst. Professor, SCSCOE, Bhor
G. S. Jadhav., Professor, SCSCOE, Bhor
R. Suryawanshi., Asst. Professor, SCSCOE, Bhor

Abstract:—
The seismic evaluation of existing building is the strengthening of building for pre earthquake or post-earthquake. Strengthening is required to increase capacity of structure to resist specific demand of earthquake. Strengthening may be carried out in existing seismically deficient building or earthquake damaged building.Seismic evaluation and retrofitting are undertaken for the life -line building, such as hospital, police station, fire station, major administrative building, school, educational building, historical monument etc.. Mostly the strengthening of existing building carried by two ways i.e. jacketing and Carbon fiber reinforced polymer(CFRP).The aim of this paper to evaluate the response of existing building by using linear analysis and nonlinear analysis. The analysis was carried out on existing building which G+3 located in Pune (Seismic zone III) by SAP2000 with help of guidelines following code I.S 1893:2002 (Part I), FEMA356, ATC 40.Based on the result of analysis the capacity of existing building for the given demand earthquake .study and the structure was not achieved the specific demand of earthquake, strengthening of existing was carried out by using CFRP. The comparison of existing building with and without FRP was carried out ,It was observed that with retrofitting that building result which based on pushover curve, hinge formation pattern, and inter storey drift ratio formation was within limit..

Index Terms:—
Carbon fiber reinforced polymer (CFRP), linear analysis, nonlinear analysis, retrofitting.

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of *Advancement in an Engineered Cementitious Concrete* presented his/her* research paper titled *Raigad Duryanpeeth Technical Campus, Shri Chhatrapati Shivaji College of Engineering*

during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Raigad Duryanpeeth Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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This is to certify that **Prof. S. V. Bankar**

of Advancement in an Engineered Cementious Concrete presented his/her research paper titled *Rajgad Dnyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhamenavadi* during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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of *Rajgad Dyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi*

research paper titled Advancement in an Engineered Cementious Concrete presented in the

during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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2nd International Conference on Applied Sciences, Engineering, Technology and Management

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Advancement in an Engineered Cementious Concrete

A. A. Shelke., RDTC's SCSCOE, Dhangawadi , Bhor, Maharashtra, India
S. R. Sutar., RDTC's SCSCOE, Dhangawadi , Bhor, Maharashtra, India
S. V. Bankar., , RDTC's SCSCOE, Dhangawadi , Bhor, Maharashtra, India

Abstract:—

A review of representative research on the behavior of PVA-ECC concrete under flexure and shear action. Concrete is most widely used material but its brittle behavior is one of the most serious problem. This problem can be overcome by using ECC concrete which contains PVA fibers in place of course aggregates and fly ash replacing cement partially. The various materials which are to be used are ordinary Portland cement, fly ash, PVA fiber, Sand, Super plasticizer and water. Super plasticizer is to be used to control rheological properties of fresh concrete. PVA fiber are selected because they have strong bond with the concrete matrix, strain hardening property and provide pseudo-ductility to the concrete there by increasing flexural and shear strength. The seismic disturbance to a structure can be partially stabilized with the help of ECC concrete

Keywords:-

PVA fibre (Poly-vinyl Alcohol fibre), ECC (Engineered Cementious Concrete), fly ash, psuedo ductility, strain hardening.

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This is to certify that **Ananta Boke**

of Rajgad Dyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi presented his/her research paper titled *Comparative Analysis of R.C.C And Steel-Concrete Composite Residential Building Frame*

during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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Ms. A. A. Shelke

Dr. S. S. Patil
Principal, SCSCOE
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2nd International Conference on Applied Sciences, Engineering, Technology and Management
Pune, Maharashtra, 20th – 21st April 2018

Comparative Analysis of R.C.C and Steel-Concrete Composite Residential Building Frame

A. S. Boke., Asst. Professor, SCSCOE, Bhor
A. A. Avhad., Asst. Professor, SCSCOE, Bhor
A. A. Shelke., Asst. Professor, SCSCOE, Bhor.

Abstract:--

Steel-concrete composite construction has gained large acceptance all over the world as a substitute for pure steel and pure concrete construction. However, this approach is a new concept in the construction industry. In this work we are creating the steel-concrete composite (G+10) frame using ETABS as an EIS-RC (encase I section column with RC beam), EIS-SB (encased I section with steel beam), CFT-RC (concrete filled square tube with RC beam), CFT-SB (concrete filled square tube with steel beam), CIS-SB (confined I section with steel beam), CIS-SB (confined I section with steel beam) and RCC frame. Static nonlinear pushover analysis is used for comparison of structures with the help of ETABS 2015 software. The majority of building frames are designed and constructed in reinforced concrete structures, depending upon the availability of constituent materials and the workmanship required in construction industry along with practicality of the existing design codes. Now a day to fulfill the demand of increasing population there is need of high rise building construction and today in India RC construction is popular to fulfill the demand of the construction industry.

Index Terms:-

Composite construction, Dead load, Base shear, Displacement, Inter-storey drift, Etab software.

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PUSHOVER ANALYSIS BY USING X-BRACING AT DIFFERENT LOCATION IN RC BUILDING

in

INTERNATIONAL CONFERENCE ON NEW ERA
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Held on 9th-10thApril 2018 at

PARVATIBAI GENBA MOZE COLLEGE OF ENGINEERING, WAGHOLI, PUNE

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PUSHOVER ANALYSIS BY USING X-BRACING AT DIFFERENT LOCATION IN RC BUILDING

Asst.Prof.Dhiraj V.Narkhede[1], Asst.Prof.Ananta S.Boke[2], Swwapnil A.Pande[3]

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ABSTRACT

Earthquake is the sudden movement of tectonic plates in the earth's crust. An earthquake that releases energy in the form of waves that travel through the earth's crust and cause the shaking of the ground. They can cause large scale loss of life and property and disrupts essential services such as Water Supply, Sewerage systems, Communication and power, Transport etc. and destroy villages, towns and cities but the aftermath leads to destabilization of the economic and social structure of the nation. The result in damage to the structures, hence we need to design the buildings to withstand these earthquakes. Pushover analysis has been the preferred method for seismic performance evaluation due to its simplicity.

In this paper, G+9 RC building is modeled and analyzed by using X-bracing at different location. The computer aided analysis is done by using SAP2000 to find out the effective lateral load system during earthquake in high seismic areas. The structure has been evaluated using Pushover Analysis, a non-linear static procedure, which may be considered as a series of static analysis carried out to develop a pushover curve for the building. The main aim of this study is that the performance of the building is evaluated in terms of Lateral displacement and Base shear (Pushover or capacity curve). In the present study, seven model of bracing at different location has been analyzed by using pushover analysis. It shows the behaviour of the components and failure mechanism in a building. The various parameter and guidelines are used from as per IS 1893:2002 (part-I) and IS 13920-1993.

Keyword: Pushover curve (Base shear Vs Displacement), Different location of X-bracing.

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This is to certify that **GANESH KAPARE**

of Dr. Rajendra Gode Institute of Technology & Research, Amravati presented his/her research paper titled *PARTIAL REPLACEMENT OF COARSE AGGREGATE WITH ELECTRONIC WASTE IN RIGID PAVEMENT* during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

Mr. Rudra Bhanu Satpathy
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Principal, SCSCOE
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2nd International Conference on Applied Sciences, Engineering, Technology and Management
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Partial Replacement of Coarse Aggregate with Electronic Waste in Rigid Pavement

G.L. Kapare., P.G. Student, M.E (Transportation Engineering & Management) Dr. Rajendra Gode Institute of Technology & Research, Amravati, India.
S.P. Mahajan., Assistant Professor, Department of Civil Engineering, Sipana College of Engineering & Technology, Amravati, India.
A.P.Pachgade., Assistant Professor, Department of Civil Engineering, Dr. Rajendra Gode Institute of Technology & Research, Amravati, India.

Abstract:—
E-waste and plastic waste are the major problem in today scenario as these are non-biodegradable. Attempts were made in past to use them in concrete by grinding them. But it failed to give good strength because grinded particle has flattened shape. Grinded plastic and e waste mixed with concrete is a good way to dispose them with cheap concrete production. Electronic waste is an emerging issue posing serious pollution problems to the human and the environment. The disposal of which is becoming a challenging problem. For solving the disposal of large amount of E-waste material, reuse of E-waste in concrete industry is considered as the most feasible application. Due to increase in cost of normal coarse aggregate it has forced the civil engineers to find out suitable alternatives to it. E-waste is used as one such alternative for coarse aggregate. Owing to scarcity of coarse aggregate for the preparation of concrete, partial replacement of E-waste with coarse aggregate was attempted. The work was conducted on M20, M25 & M40 grade mix. The replacement of coarse aggregate with E-waste in the range of 0%, 5%, and 10% & 15%, Finally the mechanical properties and durability of the concrete mix specimens obtained from the addition of these materials is compared with control concrete mix. The test results showed that a there is not significant change in compressive strength up to 5% replacement of E-waste in concrete compared to conventional concrete and can be used effectively in rigid pavement. The reuse of E-waste results in waste reduction and resources conservation.

Index Terms:—
E-waste, Durability, Reuse, Compressive strength , Flexural strength.

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SKN Sinhgad College of Engineering, Korti, Pandharpur.

Dr./Mr./Ms. shelke Aparna Atmaram has presented paper entitled A Review on advancement in FRP fiber as a Engineered cementitious concrete in National Conference on Modern Trends in Civil Engineering (NCMTCE-2018) Organized by Department of Civil Engineering, SKN Sinhgad College of Engineering, Korti, Pandharpur, held on 30th & 31st March 2018.

Dr. C. P. Pise
Convener,
NCMTCE-2018

Dr. K. J. Karande
Principal & Organising Chair,
NCMTCE-2018

A Review on Advancement in PVA Fibre as an Engineered Cementious Concrete

Asst. Prof. A. A. Shelke[1#1], Ms. P. D. Valake[2#2],

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Abstract— A review of representative research on the behavior of PVA-ECC concrete under flexure and shear action. Concrete is most widely used material but its brittle behavior is one of the most serious problem. This problem can be overcome by using ECC concrete which contains PVA fibers in place of course aggregates and fly ash replacing cement partially.
The various materials which are to be used are ordinary Portland cement, fly ash, PVA fiber, Sand, Super plasticizer and water. Super plasticizer is to be used to control rheological properties of fresh concrete. PVA fiber are selected because they have strong bond with the concrete matrix, strain hardening property and provide pseudo-ductility to the concrete there by increasing flexural and shear strength. The seismic disturbance to a structure can be partially stabilized with the help of ECC concrete.

Keywords— PVA fibre (Poly-vinyl Alcohol fibre), ECC (Engineered Cementious Concrete), fly ash, psuedo ductility, strain hardening.

I. Introduction

Normal concrete has been widely used as construction material with the advantages of durability, resistance to fire, energy efficiency and on site fabrication. In constant, it has the disadvantages of low tensile strength, low ductility and inconsistent reliability due to variable applications skills of the job site. In addition to this, the brittle failure due to fast growing of single crack loading to sudden failure is one of the most disadvantages of conventional concrete. Engineered cementitious composites (ECCs) are cement mortar based fiber-reinThese composites are composed of cement, sand, water and small amount of admixture and optimal amount of fiber. ECCs have a tensile strain capacity of up to 6% and exhibit strain-hardening behavior.[5,19]
Engineered cementitious composites (ECC) also known as "Bendable concrete", developed in last decade may contribute to safer, more durable and sustainable concrete infra structure that is cost- effective and constructed with conventional construction equipment. With 2% by volume of short fiber, ECC has been prepared in ready-mix plants transported to construction plant using conventional ready-mix trucks. Furthermore, the most expensive component of the composite fiber, is minimized resulting in ECC that is more acceptable to the highly cost sensitive construction industry.[13]
ECC is ductile in nature. Under flexure, normal concrete fracture in brittle manner.[11] In constant, very high curvature can be achieved for ECC at increasingly higher loads, much like a ductile metal plate yielding. Extensive in elastic deformation in ECC achieved via multiple micro-cracks, with widths limited below 60μm (about half the diameter of human hair).This is elastic deformation, although different from dislocation movement, is analogous to plastic strange in ductile metal. Necessity of ECC for structural applications:-In the preparation of ECC 2% or less by volume of discontinuous fiber is adequate. Because of relatively small amount of fibers & its chopped nature the mixing process of ECC is similar to that of mixing in conventional concrete.

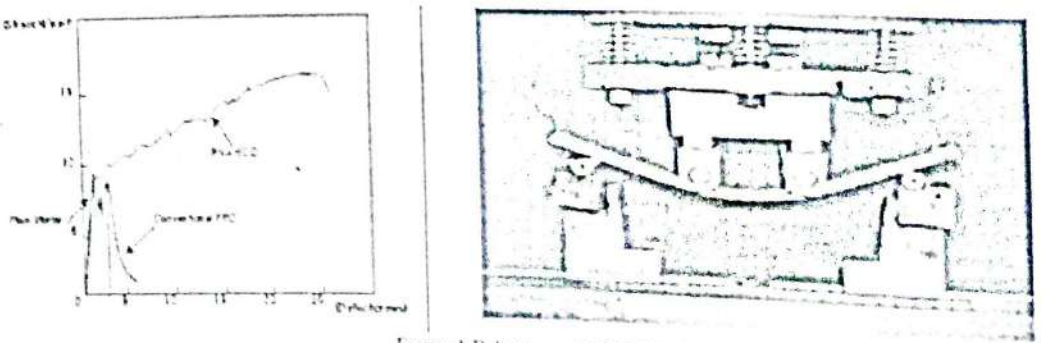

Figure 1 Behaviour of PVA-ECC concrete

JAYAWANT SHIKSHAN PRASARAK MANDAL's

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He/She presented his/her research work titled Application of Graphene Oxide Modified with 8-Hydroxyquinoline for Adsorption of Copper from Leachate

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Application of graphene oxide modified with 8-hydroxyquinoline for adsorption of copper from leachate

Yogita B.Dahatonde,
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Abstract: **In this paper the study is to find out adsorption capacity of copper from leachate by adsorption process using Graphene oxide and 8-hydroxyquinoline in Moshi kachra depot, Pune. As copper is one of the most toxic heavy metal usually found in environment. In leachate concentration of copper was exceeding limit that is discharging limit in natural streams is 3mg/lit by guidelines limit for wastewater effluent set by National Environmental standard and Regulation Enforcement Agency . The adsorbent material will be characterized by FTIR, XRD, XPS. The adsorption isotherms and kinetics of copper (Cu) onto adsorbent and the effect of temperature and ph on the removal efficiency will be thoroughly analyzed. Also breakthrough The maximum adsorption capacity will be 85-95 percent mg/lit. Therefore, these materials can be used as effective adsorbent for Cu-containing wastewaters**

K eywords: 8-hydroxyquinoline, graphene oxide, isotherm, kinetics, Cu.

I. INTRODUCTION

Pimpri –Chinchwad, the twin city of Pune has a landfilling and waste dumping site, called PCMP Moshi Kachraa Depot, it is spread over 45 acres. Organic and inorganic waste is dumped at this site. Residents from those areas were agitating day in and day out to have the dumping ground remove from its place. Now BVG India Ltd was given responsibility to manage the PCMC Moshi Kachara Depot in 2011 and changed the entire scenario that existed for over 50 years. BVG emptied the entire area and processed the garbage.60 to 70%garbage was organic waste, the remaining 30 to 40% was plastic, metal, and glass. Everyday approximately 800 tons of garbage is collected and brought to dumping ground. Earlier, the entire 800 tons of garbage was sent to landfill. Today only 100 to 125 tons of garbage is processed. The generation of leachate is decomposing solid waste, the percolating water becomes contaminated and flows out of waste material. As liquid moves through the landfill many organic and inorganic compounds, like heavy metals are transported in leachates. This leachates consists of heavy metal such as copper(Cu), nickel(Ni), lead(Pb), mercury(Hg), chromium (Cr) and zinc(Zn), iron(Fe). However copper is a common hazardous pollutant in water and wastewater and it is often released from several sources of industries like metal finishing processes, fertilizer, tannery operation, chemical manufacturing, metal surface treatments as plating refining paints and pigments.

Adsorption process have shown many many advantage like ease of operation, low cost. Graphene is new carbon material with two-dimensional structure and many excellent properties and high specific area with good chemical stability make graphene a good material for adsorption treatment of leachate. Aggregation leads to great reduction in surface area, and is not beneficial for adsorption of heavy metal. Moreover the affinity of material to adsorb molecules is mainly determined H-bonding, van der Waals interaction. Therefore proper chemical modification of graphene is required to make it water soluble and have suitable surface properties to improve its water adsorption capacity. Therefore Graphene oxide is modified with 8-hydroxyquinoline (8-HQ), it is chemically immobilized on different solid supports such as chelating resin, bentonite and silica nanoparticles to form various solid adsorbents, where it has been shown great enhance the removal of heavy metals ions from aqueous solution. 8-HQ is strong bidentate chealating agent that contains an oxygen donor

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Opinion Classification by Rating Prediction using Sentiment based Textual Review

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Abstract- **In today life individuals are associating with the Internet and social networks, User shares their opinions on the web so there is a basic issue of data over- overloading. Users can't without much of a stretch trust on other individuals people review; each user has distinctive reasoning on a single product. So there is much data exhibit in online textual reviews, which assumes a vital part in decision making. For instance, the user chooses what to purchase in the wake of observing valuable reviews posted by others as users effectively confide in their companions or friends. People believe in reviews and reviewers because it helps in rating prediction. Rating prediction is based on the idea that high-star ratings mean it is related to the good reviews and this thing affects the consumer. How to mine reviews and the relation between reviewers in social networks has become an important issue in web mining, machine learning, and natural language processing. Reviews contain detailed information along with user opinion information, which is important for a user to choose a product to be purchased. Some people had thought about price, quality and other comparative factors. All these factors describe the user's interests according to their comments on the product. Interpersonal interaction is difficult for extracting user's preference. To overcome these problems propose a sentiment-based rating prediction method by using a framework of matrix factorization. The contributions of the proposed approach are 1) user sentiment analysis. 2) Rating prediction using sentiments. User sentiment influence reflects how the sentiment spreads among the trusted users. Item reputation similarity shows the potential relevance of product. To carry out an accurate recommendation system fuses user sentiment similarity, item reputation similarity, and Interpersonal sentimental influence into a matrix factorization framework.**

Keywords— Opinion classification, rating, prediction, sentiment, textual review, product, similarity.

I. INTRODUCTION

Decision processes plays huge role in online reviews, reviews may contain personal information. For instance, the customer will choose what to purchase in the reviews that he or she sees important reviews posted by others, particularly user's trusted friend. We trust surveys and analysts will do help to the rating forecast in light of high-star evaluations may enormously be joined with great reviews. Hence, how to mine reviews and the connection between reviewers in social networks has turned into a vital issue in web mining, machine learning and natural language processing. Sentiment analysis is the most fundamental and important work in extracting user's interest preferences. Sentiment is use to find customer's personal review on product. Before that, there are directly star rating options available by which user select number of stars on its own experience of product, but not all website have star rating factor. To make a more accurate rating user sentiment takes important rôle. Generally, reviews are of two types positive and negative. However, it is difficult for customers to make a choice by looking at other candidate reviews. To make a purchase decision, customers not only need to know whether the product is good, but also need to know how good the product is. For example, some users prefer to use "good" to describe an "excellent" product, while others may prefer to use "good" to describe a "just good, not a best" product.

The main research goal of the proposed work is to analyse the public reviews. Interpreting public sentiment variations involves the process of sentiment classification. The data collected over the social sites will be pre-processed to remove noise in the data. After data pre-processing, the comments having sentiments will be classified as positive, negative and neutral using a supervised machine learning classifier, Naive Bayes. The significant sentiment variations will be detected with a predefined threshold (e.g. the percentage of negative comments increases for more than 50\%). The two Latent Dirichlet Allocation (LDA) based models will be used to analyse comments in significant variation periods and infer possible reasons for the variations. The first model, Foreground and Background LDA (FB-LDA), can filter out background topics and extract foreground topics from tweets and comments in the variation period. Another, model, called Reason Candidate and Background LDA (RCB-LDA), can extract the representative comments as reason candidates. To give a more intuitive representation, the RCB-LDA model can rank a set of reason candidates expressed in natural language to provide sentence level reasons. The proposed hybrid system will be evaluated on review datasets. The system will be able to mine the possible reasons behind sentiment variations. The performance of the proposed system will be analysed in terms of precision and recall.

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Product Recommendation from Textual Reviews Using Hybrid Filtering Approach

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Abstract- **The amount of information on the internet grows rapidly and people need some system to find and access appropriate information. Recommender Systems (RS) are currently used in both the research and in the commercial areas. RS are information filtering systems that deal with the problem of Information Overload. The existing recommendation is based on POI (Point of Interest), Geographical location, User Preference learning and algorithms like LDA, OGRPL (Online Graph Regularized User Preference learning) are used for information extraction and also use the Attribute Pruning (AP), Frank-Wolfe algorithm for improving the performance of the system with some limitation like high retraining cost, unable to capture change in preferences, work for specific value of k. The proposed system recommendation is base on sentiment prediction from textual review using the LDA for feature extraction and is originally based on Hybrid Filtering Approach. K numbers of products are recommended to the user. Hence, the proposed system improves the prediction accuracy of the recommendation system.**

Keywords— RS, Sentiment prediction, Hybrid Filtering Approach, Conflation algorithm.

I. INTRODUCTION

As the data on the internet grows, the number of choices is overwhelming, there is need to filter, priorities and efficiently deliver relevant information in order to solve the problem of information overload. The Recommender system solves this problem by searching through large volume of dynamically generated information to provide user with personalized content and services.

Traditional RS works in three phases as:

1) Information Collection phase
2) Learning Phase
3) Prediction/Recommendation phase

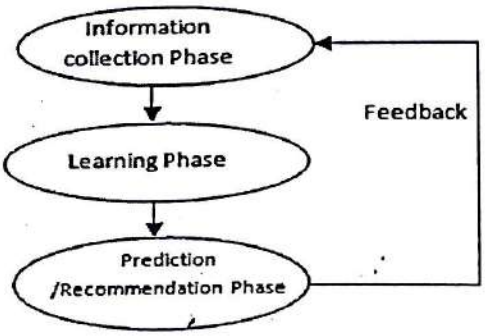

Fig1: Recommendation System

The information collection phase collects relevant information of user to generate a user profile or model for the prediction task including user's attribute, behaviors or content of the resources the user accesses. Information collection phase also includes user feedback and for e-commerce sites need collection of personal information associated with specific user. The learning phase applies learning algorithm and utilize information gather from the information collection phase. The Recommendation or Prediction phase predicts what kind of items of the user may prefer. The use of efficient recommendation technique is very important for system that will provide good and useful recommendation to its individual users.Recently, various approaches are developed which can utilize content base and collaborative filtering technique. Both techniques have strengths and challenges that can be resolved by using hybrid approach to improve the performance of RS.

II. REVIEW OF LITERATURE

A. Content-based Filtering:

The content base technique is a domain depend approach which focuses onanalyzing the attribute of the item for recommendation [9]. The content base considers two things First, user profile: feature extracted from the content of the item that evaluated in the past by user. Second, Item that is positively rated and mostly related to user profile. The CB is having ability to recommend new item even if there is no rating provider by user. The major disadvantage of CB is the need to have an in-depth knowledge and description of the features of the items in the profile i.e. it is dependent on items metadata.CBF uses different models to find similarity as: Vector Space model such as TF/IDF, Decision tree. LIBRA is a content based book RS.

B. Collaborative Filtering:

Collaborative filtering is the most commonly user approach in [1],[3],[5],[6],[7],[8] Collaborative filtering is a domain-independent prediction technique for content that cannot easily and sufficiently described by metadata.CF builds the database of preferences for item by user. Recommendation

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Cyber bullying Detection & Prevention for Social Media Using Data Mining

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Abstract- **The increasing use of social communication networks by their users leads to huge amount of user-generated communication data. Due to the popularity of social media cyberbullying become the major problem in online communication and cyberbullying behavior received more and more attention. Cyberbullying may cause many serious and negative impacts on person's life and even leads to teen suicide. In the existing system the set of unique features derived from Twitter such as network, activity, user and tweet contents. By using these features the cyberbullying words which are presented in the comment contents are detected using data mining algorithms. The rumor comments are detected using syntactic and semantic techniques. The cyberbully detection and rumor detection on social network are done separately in the existing technique. In the proposed work the detection of cyberbully words and rumor comments on social media are integrated into a single application, along with these the cyberbully contents in the post. Comments will be detected using Pattern Matching algorithm.**

Keywords— Cyber bullying, social network, Cyber harassment, Text mining.

I. INTRODUCTION

Cyberbullying was defined by Patching and Hinduja as "willful and repeated harm inflicted through the medium of electronic text .According to the definition of the National Crime Prevention Council ,cyberbullying is the use of the Internet, cell phones or other technologies to send or post a text or images intended to hurt or embarrass another person . Flooding: It is consists of the bully frequently sending the same comment, nonsense comments, or press the enter key in order to not allow the victim to contribute to the conversation. Masquerade involves the bully pretends to be someone who they are not. This would make it appear with the purpose of bully a victim directly. Flaming or bashing is a kind of online fight. The bully sending or posting electronics message which are enticingly inciting, vulgar to one or several persons either privately or publicly to an online group. Harassment is the kind of conversation that the bully frequently sends insulting and rude messages to the victim. Cyber stalking and cyber threats occur when the poster sends intimidating or offensive messages. Denigration also called "dissing" happens when an electronic bully sends or publishes gossip or untrue statement about a victim in order to damage the victim's friendship or reputation. Outing occurs when a person sends or publishes private or embarrassing information in a public chat room or forum. This type of cyberbullying is similar to the denigration. However in outing the relationship between bully and victim are close.

II. LITERATURE SURVEY

a) Detection of cyberbullying in messages Yin et al., conducted experiments on three different data sets (My Space, Slashdot, and Kongregate) provided by Content analysis for Web 2.0 (CAW 2.0 in order to detect harassment. For harassment detection they used content, sentiment, and contextual features of the documents to train a support vector machine (SVM) classifier for a corpus of online posts. Various methods were used to develop the attributes of the entrance to the classifier, such as: standard text mining techniques based on weights of term (in this case - words), rule-based systems for detection of feelings and context analysis. The obtained results demonstrated that the use of the combined model, which besides text mining included methods for adding context and detection of feelings ,improved the detection of cyberbullying.

B) Detection of cyberbullying on Twitter A framework for the detections of cyberbullying on Twitter was created by Sanchez and nmp; Kumar. Text that was used in messages (tweets, twitter message) requires intensive pre-processing prior to classification, including identification of syntax errors, emotions, and use of slang. The idea was to classify emotions contained in a message using a
Sentiment analysis and opinion mining, and then to visualize the changes in the message over time. The messages were classified using Naive Bayes algorithm as negative or positive, with respect to some frequently used words. Bag of- words model was used in the classification. The aim of the authors was to identify the victims.

C) Detection of cyberbullying in comments from YouTube video clips Dadvar et al, detected cyberbullying in comments from YouTube video. They used combination of content based, cyberbullying specific and user based features. They have shown that using user context (user's comments history and user characteristics) improves

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Vehicle Location Tracking and Control using Secured Wireless Networks

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[2] Pofessor, VelTech Dr. RR and Dr. SR University, Avadi, Chennai

Abstract: - **Now a days, automobile thefts are great concern increasing at an alarming rate all over the world. Increasing the density of vehicles creates a problem in large number security of vehicle. Solution to this problem new approach is developed for providing security to vehicle by developing secured vehicle management system for control and tracking. In this system the user will control his vehicle through an android application. A secured mode of communication between Smartphone and vehicle is established via GSM network where authentication is done before establishing communication. Using Smartphone, the owner will be able to lock/unlock the vehicle and track the vehicle in case of theft. If the GSM network is not available then the secured Bluetooth mode is used for communication. The performance of the proposed scheme is evaluated on the metrics such as end to end communication between user and vehicle.**

Index Terms— **Global Positioning System, Subscriber Identity Module, GSM network, Bluetooth.**

I. INTRODUCTION

Vehicles are expensive other than a house, perhaps, few purchases will compare to a new vehicle. In order to this just like any other expensive asset, a vehicle brings with it a secondary cost, the risk of theft. In some laid-back parts of the world, locking the doors may be enough to ward off the threat. Everywhere else, it's a good idea to arm yourself, and your vehicle, with some security. In these days, automobile thefts are increasing rapidly all over the world. So to escape from these thieves most of the vehicle owners have started using the theft control systems.

The aim is to provide a user an innovative way to control (lock, unlock) and track vehicle through the secured wireless networks so that owner can access vehicle via Smartphone and to develop a database management system for RTO officials so that, work of RTO documentation becomes paperless. The system focuses on development of vehicle locking and tracking system. With this, the owner will be able to have secured communication between owner's phone and the vehicle via wireless network viz. GSM network and Bluetooth. In the network mode, the owner can access the vehicle from anywhere using web based technology. If this network mode is not available then system uses Bluetooth as alternative for which user needs to be in Bluetooth range to connect the vehicle. The system will include a module with microcontroller installed in the vehicle which will communicate with Smartphone application through GSM network and depending upon the command received from the Smartphone app, the device in the car will respond and act accordingly. To enforce the security, the system will comprise of central cloud storage where the authentication will be done before granting the access of car to its owner. Plus, when data network is not available, there will be availability of Bluetooth as an alternative way to establish the communication.

II. LITERATURE REVIEW

2.1 Existing System

In 2012 Dhotre et al [2] using GPS (global positioning), it is possible to get the location of the vehicle. So, we can track the vehicle using this technique. In 2011 Jayanta et al [3] the ignition locking from remote place by using cell phone is possible. This can be used as antitheft or theft prevention.

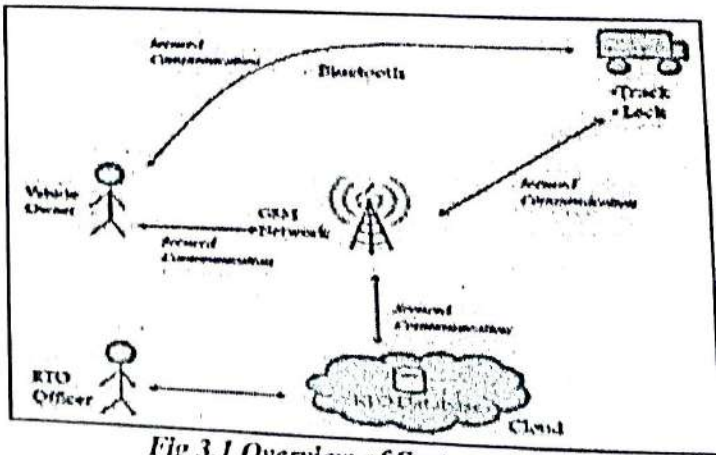

Fig 3.1 Overview of System

Entropy based cost function for wavelet based medical image steganography

2 Author(s) Sanjay H. Nipanikar , V. Hima Deepthi View All Authors

Abstract:Securily is the rising concern in this technical revolution that is looming the researchers towards new contribution. The major contribution is the development of the ste...View more

Metadata

Abstract:

Security is the rising concern in this technical revolution that is looming the researchers towards new contribution. The major contribution is the development of the steganography that provides security to the secret messages through hiding them in the cover media, which is the image, video, or an audio. Image steganography uses image as a cover media to carry the secret message with a high degree of security. This paper proposes a method of hiding the text message in the image for which a Discrete Wavelet Transform (DWT) is employed with the cost function that locates a position to undergo embedding. The cost function uses entropy, intensity, and the edge of the image to calculate the position of embedding. Experimentation has been done with the MRI brain image as a cover image and the performance analysis in terms of PSNR and Correlation gets evaluated. The comparison of the experimental results of the DB1wavelet with cost function, Haar wavelet, Haar wavelet with cost function, and DB1 wavelet prove that the Haar wavelet with cost function achieves a better PSNR of 43.5200db and a correlation of 96% when compared with the other methods.

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research paper titled *Review on Software-Defined Wireless Sensor Networks (SDWSN) and its Challenges.*

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A Review on Software-Defined Wireless Sensor Networks (SDWSN) and its Challenges.

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Abstract: - **Software Defined Networking brings about innovation, configuration in network computing and simplicity in network management. SDN technology is an enormous approach to cloud computing which facilitates network management and enables efficient network configuration programmatically that improves network performance and monitoring. WSN consist of nodes that interact with the environment to achieve the sensing task thereby sensing the physical parameters such as temperature, pressure, volume etc and also help control them. These nodes can perform computation, sensing, actuation and wireless communication functions, particularly with the advent of Internet of Things (IoT)that is essential for monitoring several objects in applications such as smart cities, smart water networks, smart health care, smart power grids, smart farming and intelligent transport systems etc WSNs are continuously becoming important .Traditional networks often lack flexibility that brings into effect instant changes because of the rigidity of the network. It also depicts over dependency on proprietary services. SDN separates the control plane and the data plane, therefore moving the control logic to a central controller from the node. WSN is a very good platform for Low-Rate Wireless Personal Area Networks (LR-WPAN) with minimum resources and short communication ranges. Although the scale of WSN expands it faces many challenges, namely heterogeneous-node networks and network management. The approach of SDN seeks to alleviate most of the challenges and hence foster sustainability and efficiency in WSNs. The combination of SDN and WSN gives rise to a new prototype named as Software Defined Wireless Sensor Networks (SDWSN). The SDWSN model is therefore envisioned to play a vital role in the IoT paradigm. This paper presents a review of the SDWSN literature. Also it takes care of the challenges facing this paradigm.**

Index Terms— **Wireless sensor networks, Software defined networking, Software defined wireless sensor networks.**

I. INTRODUCTION

WSN consist of micro-sensors capable of monitoring physical and environmental factors such as temperature, humidity, seismic events, vibrations, motions, etc. A sensor node typically consists of a power unit, sensing unit, radio and a processing unit. WSN consists of sensor nodes deployed in a structured or unstructured manner over a chosen area of interest. The sensor nodes are small, inexpensive, and intelligent. WSN's are usually not tethered to a power source as they require a minimum amount of energy which is usually supplied by integrated batteries. WSNs are very flexible in their applications but also put up a challenge due to their resource constrain and application specific architecture. The main defect of WSN is related to the resource limitations of the sensor hardware namely processing, memory, energy and communication capabilities, although they are widely used due to the increased number of embedded devices available making deployment easier. However, other issues associated with large-scale WSNs arise with the increased node deployment such as meeting the necessary QoS for satisfactory operation as node scale up to very large numbers. This is a very essential factor to consider especially in medical and industrial applications where quality and reliability are very crucial. Due to the rigidity of the network and the over dependency on proprietary services, traditional networks often lack the flexibility to bring into effect instant changes. A Wireless Sensor Network (WSN) is a great platform for Low-Rate Wireless Personal Area Networks (LR-WPAN) with little resources and short communication ranges. However, as the scale of WSN expands it faces several issues, such as network management and heterogeneous-node networks. In addition, these nodes will not only need to process data but also need to be flexible on variations. Therefore, the nodes must be reprogrammable during operations when other tasks need highest priority. The current vendor specific sensor nodes being used in WSNs are difficult to re-task when a new parameter is required to be sensed and reprogramming would require each sensor to be taken out and the embedded software reprogrammed in the sensor hardware. For large-scale WSNs this method would not be realistic. Vendors have come with the idea of Over The Air Programming (OTAP) techniques; however, the data sensing and packet forwarding protocols are still specific to the vendor. The SDN approach to WSNs seeks to alleviate most of the challenges and ultimately foster efficiency

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EXTRACTION OF STANDING HUMAN BODIES FROM SINGLE IMAGE

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Abstract - Detection and extraction of human bodies in an image are a very difficult task that can facilitate many applications like background understanding and condition identification. In order to justify the challenge with the highly dimensional activity like pose, scene complexity, and different types of human presence, the majority of existing works needs computationally facility training The situation, dimensions, and color of the face are used for the localization of the human body, structure of the models for the upper and lower body according to the study of human body measurements especially on a comparative basis, and estimation of the skin color. To detection of kin color different levels of segmentation are combined. In this paper principal component analysis (PCA) algorithm is used for face, upper body and lower body detection. This paper presents an application of gray level co-occurrence matrix (GLCM) to extract features from an image.

Keywords - Face Detection, Principal Component Analysis, Filtered Image, Image Segmentation, Skin Detection, Upper Body Detection and Gray level Co-occurrence Matrix

I. INTRODUCTION

The extraction of the human body in images is exacting due to some important factors, including shading, image noise, occlusions, background clutter, the high degree of human body distort, and the not restricted positions due to in and out of the image plane rotations. Knowledge about the human body region can benefit various tasks, such as estimation of the human layout, recognition of actions from static images, and sign language recognition. Human body segmentation and outline extraction have been a common practice when image are available in controlled environments, in that background information is available, motion can help the extraction through background subtraction.

In the images, however, there are no like cues, and the trouble of image extraction is much more challenging, especially when we are considering many different and complex cases Moreover, methodologies that are able to work at a frame level can also work for consequences of frames, and to make easier existing methods for action recognition based on image features and body. In this paper, we propose a bottom-up approach for human body segmentation in static images. We break down the problem into three main sequential problems: Face detection, upper body segmentation, and lower body Segmentation, since there is a direct couplet wise relation existing between each other. Face detection gives and determine a strong indication about the presence of humans in an image, greatly reduces the search space for the upper body, and provides information about skin color. Moreover upper body extraction provides additional information about position of the hands, detection of which is very important in many applications.

II. LITERATURE REVIEW

Gundegoni Rajeshwari, Prof.Vara Prasad Rao et al [1] a novel approach for extraction of standing human bodies has proposed in this paper where the highly dimensional pose space, scene density, and various human appearances are handled in better way compared to conventional state of art methods.

Athanasius Tsitsoulis, Member, IEEE, Nikolaos G. Bourbakis, Fellow, IEEE et al [2] describe the position, dimensions, and color of the face are used for the localization of the human body, construction of the models for the upper and lower body according to anthropometric constraints, and estimation of the skin color. Different levels of segmentation granularity are combined to extract the pose with highest potential.

Asha Bhangre, Prof. Anil Chhangani et al [3] proposed methodology for upper and lower body estimation. Decompose the problem into two sequential problems: first face detection and second skin detection.

R Swathi, K Ramesh et al [4] proposed a novel strategy to extract human bodies from images where the scene density, the highly dimensional pose space, and various human appearances are handled in better way compared to conventional state of art methods.

Zubaida khan, Prof. Vaishali Bodade et al [5] focuses on extracting human bodies from an image into various parts. The extracted parts are classified into human body organs such as legs, arm, torso, and head. It also provides the facility for the location of an event that attracts attention.

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Design of Arithmetic, Logical Unit for 8 Bit Microcontroller using VHDL

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Abstract: **- Now a days as far as the speed of the processor is concerned, a new trend of design philosophy in the market is the use of reconfigurable hardware i.e. by using FPGA.(Field Programmable Gate Arrays). This paper deals with the construction of ALU,Logical unit and rotate unit and implemented using Xilinx 9.2 i. Instructions implimated by the individual module are simulated and synthesized by using VHDL and SPARTAN III FPGA board for design purpose, parallelism approach of designing is used in which use of minimum number of combinational circuits and maximum use of sequential circuits for avoiding delay. The instructions implemented are eight by arithmetic unit, logical unit implementsseven instructions. The designed units are recombined with other modules for construction of a 8- bit microcontroller, using FPGA for the improvement in speed.**

***Keywords*: - RISC, FPGA, VHDL, SPARTAN-III.**

I. INTRODUCTION

In today's word. we see many industrial and domestic products like remote controllers:telephone bill printing machines, automobiles, mobile phones, oven,automation is required [1]. This is required to facilitate the process of mechanism for its operation and control. Data storage and processing is an integral part of any automatic control system. So there is a need to have a device called,"Microcontroller", which helps to carry out the function of automization. While designing, the improvement in speed and having implementation of maximum instruction near about 40 instructions, are the goals of the designing. For the achievement of this goal, parallelism approach is used. The PIC16F84,RISC CPU has 35 instructions which are single word and single cycle except program branching instruction which are two cycle. The present operating speed is 20MHz and clock input is DC.Program memory is 1024 words,Data RAM is 68 bytes.Data E2PROM is 64 bytes. Core has 8-bit data size and 14-bit wide instruction words[5]. The present PIC is developed module wise at gate level and VHDL code is developed modulewise.The four states T1,T2,T3 and T4 are developed, which are opcode,fetch,decode,execution and write back respectively. For implementing purpose SPARTAN-III is used, because of low cost, high volume and high performance and consumer oriented applications [2].

II. METHODOLOGY

For the designing and implementation of the RISC processor, the design methodology is discussed below.

2.1Modulewise Development:-

The PIC16F84 Microcontroller is partitioned into number of modules as instruction decoder,Arithmetic unit,Logic unit,Rotate/shifter unit,Bit-set clear unit,Generation of T-states and combination of all above units.The VHDL code is written for individual module using Xilinx ISE simulator. It features optimized direct compile for the fastest compile times and competitive simulation performancel

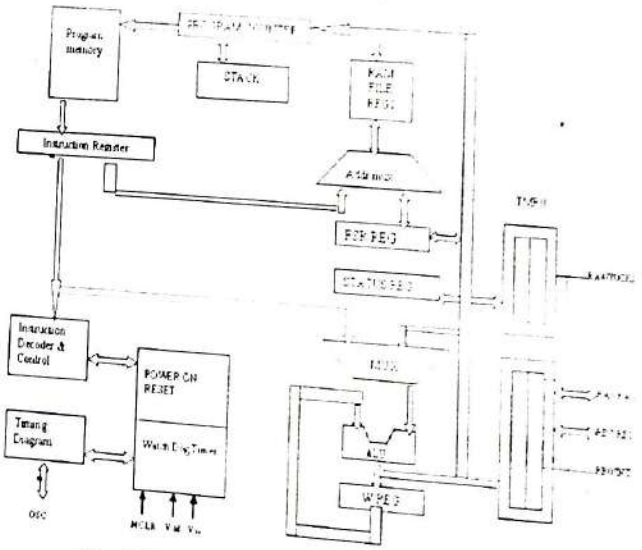

Fig.1.The Block Diagram of RISC 16F84

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This is to certify that **T.M.Dudhane**

Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

research paper titled *TESTING MACHINE OF METAL CAN COATING BY USING ARM7 PROCESSOR*

during the

Applied Sciences, Engineering, Technology and Management (ICASETM-2018) held at Rajarambapu Institute of Technology Campus, Rajaramnagar

on 20th & 21st April 2018.

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Testing Machine of Metal Can Coating By Using Arm7 Processor

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Abstract: **- A specialized machine device is designed which checks the coating of metal cans. The metal cans are made up of aluminum metal. It is highly reactive, so coated with paint to check coat is uniform or not. This machine will test metal cans i.e. uncoated areas are present in the metal cans or not. Metal cans are coated by using sprays. So sometimes some small areas on the internal side of metal can remain uncoated, they get reacted with internally stored sprays. This will affects the quality of the product. So we are designing this machine to improve quality of the product. It will test metal can is properly coated or not. It will display porosity value on LCD. It uses the principle of electrolysis. Electrolysis means the process of by which current will pass from one electrode to another through the ionized solution. Metal Can under test is provided with the anode and cathode assembly. If there is no current flow, it indicates metal can is ok. If current flow occurs, then indicate metal can is not ok.**

***Index Terms*— ARMLPC2148,Electrode, LCD, and LED..**

I. INTRODUCTION

The system is designed using ARM LPC2148 microcontroller. The Production of company are cans. They are used for storing perfumes, scents. These cans are made up of Aluminum metal. As it is highly reactive metal, cans are provided with internal and external coating. Paint are applied on can surface by using sprays. External side porosity of cans is easy to test. It is difficult to test internal side porosity. If coating is not proper and uniform, the open aluminum metal gets react with content stored in metal can with scents and perfumes stored inside can. It affects quality of products. So, one machine is designed in this paper which is use for testing lacquer porosity inside the metal cans. Lacquer means coating provided on metal. Porosity indicates number of pours means number of uncoated area remains inside the can internal side. The internal side is coated with paints to avoid reactions of metal with stored content. This machine will check porosity and check cans are faulty or uniformly poured. It works on the "Electrolysis principle". Electrolysis is electrochemical process by which current will pass from one electrode to another through ionized solution.Can under test is provided with anode and cathode assembly. If there is no current flow, it indicate can is ok. If current flow occurs, then indicate can is not ok that is if current flow occurs, then indicate can is faulty. In addition visual indication is provided by deposition of copper if coating is not continuous. The equipment is capable of giving reading direct on LED display.

The equipment provides the required information quickly and reliably and is particularly suitable for quality control application. The equipment is suitable for. 230VAC 50Hzs. It is designed in low cost as compared to its market prize.

II. BLOCK DIAGRAM:

The figure 1 shows the block diagram of testing machine for metal can coating using ARM processor.

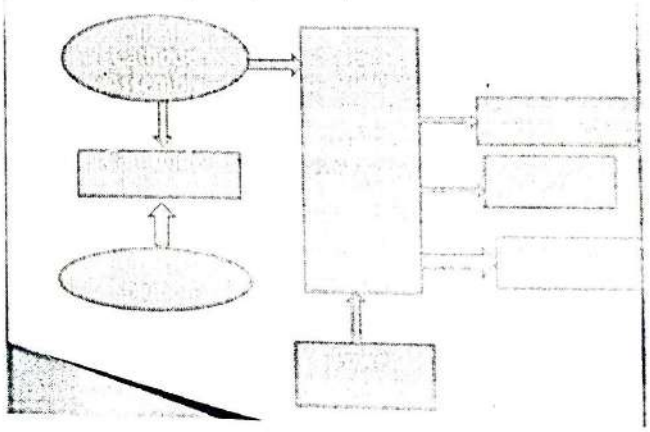

Figure 1.Block diagram of testing machine for metal can coating using ARM processor

Working Principal:

Can under test is filled with CuSo4 solution. Then it is provided with anode cathode assembly. Anode used here is copper electrode. It is connected to positive supply of

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during the 2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM-2018) held at Rajaramnagar, Islampur Campus, Shri. Chhatrapati Shivajiraje College of Engineering, Dhangawadi on 20th & 21st April 2018.

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Design of Petrol Supply System by Using Licence and Biometric Module

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Abstract: - To check non-licences for driving and consequently happening the accidents one of the new system is introduced. Biometric verification is one of the most well-liked and personal biometric verification system. This system consists of a some amount of memory capability to store the thumb print of particular person. Although providing the licence, the particular candidates thumb print reader is to be stored in the memory of reader. Vehicles like cars, bikes etc. must have a reader capable of reading the particular licence. The similar vehicle should have the capacity of thumb print reader component. A man, who is going to drive the vehicle, should keep the thumb on the reader and inserted card (licence) in the vehicle, if the thumb print stored in the module and swiped card are match, if and only if he/she can drive the vehicle, otherwise petrol supply will not work. So that system increase the safe keeping of vehicles and also ensures protected driving by prevent accident because of authorized persons.

Keywords: - Licence, card reader, thumb print..

I. INTRODUCTION

The main objective of this paper is to prevent non-licences from driving and causing accidents. An important and very reliable human identification method is fingerprint identification. It is possible that drivers who have not undergone appropriate training and testing may be deficient in some aspect of the knowledge and skills required to drive safely and efficiently. Also drivers who are unauthorized laws in that they would not be influenced by the rewards and penalties set up under the licensing system, approximately half of all drunken driving takes place with drivers who do not have a valid driving license. So this paper aims to introduce a hardware architecture which detects the fingerprint as well as the age of the driver and takes a robust decision to turn on or off the petrol supply system.

II. MATERIAL AND METHODS

2.1 System block diagram and working:

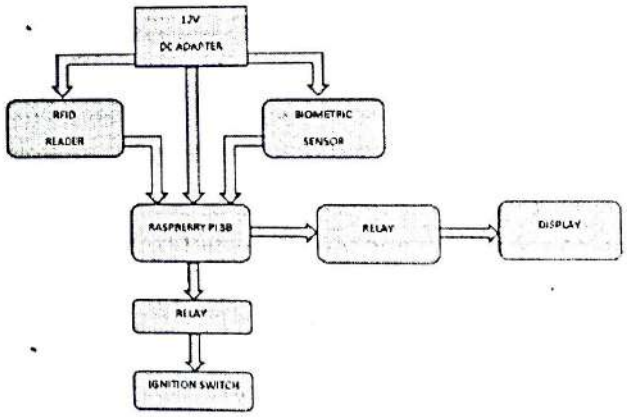

Figure1. Block Diagram of petrol supply system

Working:

1. RFID READER :

A radio frequency identification system uses tags, for labels attached to the objects to be identified. To way radio transmitter receivers interrogators or readers send signal to the tag and read its response. RFID tags can be either passive or active. An RFID card can be understood as a remote storage unit where we can read and write information without contact firstly we generates the database on RFID card that data should be contain user information like Name, DOB, Mobile number, vehicle number. We use the 125KHz USB proximity sensor for

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Dalavi Dayanand U

Rajgad Dnyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

SMART INDUSTRY BASED ENVIRONMENT MONITORING and CONROLLING SYSTEM

Dr. S. B.

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Smart Industry Based Environment Monitoring and Controlling System

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Abstract: - A smart city enables the effective utilization of resources and better quality of services to the citizens. To provide services such as air quality management, weather monitoring and automation of homes and buildings in a smart city, the basic parameters are temperature, humidity and Co and Light intensity, gas leakage. This project presents a customised design of an environment monitoring system to monitor temperature, humidity and CO and Light intensity, gas leakage. In this project we have used an ARM controller as main controlling unit, a Wi-Fi module to let know the condition of environment of particular area to the authorized user, sensors like gas sensor, temperature and humidity sensors for monitoring environment and light, motor and buzzer as output device who has to work according to the environmental conditions, decision about how the output devices has to work is took by the main controller unit.

Index Terms— Internet of things, smart city, ARM.

I. INTRODUCTION

The significance of condition checking is existed in numerous perspectives. The conditions are required to be observed to keep up the solid development in crops and to guarantee the protected workplace in enterprises, and so forth. Because of innovative development, the way toward perusing the ecological parameters ended up noticeably less demanding contrasted with the previous days. The sensors are the scaled down electronic gadgets used to quantify the physical and ecological parameters. By utilizing the sensors for checking the climate conditions, the outcomes will be exact and the whole framework will be speedier and less power expending. IoT empowers to be associated with for all intents and purposes boundless gadgets over the web. It in this way has an incredible capability of imparting and connecting with them. Condition observing is one of the real utilization of remote sensor network.WSN comprise of various sensors which are broadly dispersed to screen distinctive condition parameters like temperature, moistness, gasses, weight, wind speed and so on. The utilization of remote encompassing sensors can prompt more vitality productive structures. WSN comprises of sensor hubs which are ease gadgets with restricted power. This framework is utilized to quantify the imperative parameters of condition, for example, temperature, dampness, CO and CO2 utilizing sensors which are reasonable for detecting the natural parameters. The information gathered by condition parameter detecting sensor is transmitted to the cloud utilizing Wi-Fi innovation. The MCP3204 A/D converter is utilized to interface the sensors with ARM7- based LPC2138 microcontroller. In the event that temperature surpass above limit esteem then exhaust fan will automatically on and if gas spillage happens window on consequently, additionally buzzer on.

II. RELATED WORKS

An efficient environmental monitoring system is required to monitor and assess the conditions in case of exceeding the prescribed level of parameters (e.g., noise, CO and radiation levels). When the objects like environment equipped with sensor devices, microcontroller and various software applications becomes a self-protecting and self-monitoring environment and it is also called as smart environment. In such environment when some event occurs the alarm or LED alerts automatically. The main aim of this paper is to design and implement an efficient monitoring system through which the required parameters are monitored remotely using internet and the data gathered from the sensors are stored in the cloud and to project the estimated trend on the web browser [1]. Continuous monitoring of any sensitive environment helps to meet security and regulatory compliance needs. Monitoring temperature and/or humidity conditions is an essential ingredient of a wide range of quality assurance applications. Monitoring deterioration would provide an early warning of incipient problems enabling the planning and scheduling of maintenance programs, hence

Due to the popularity of power electronics devices HVDC system becomes potential candidate for grid integration of renewable energy over long transmission. The book contains hybrid multilevel converter (HMC), which is one of the most suitable replacement for traditional voltage source converters because of fast response during dc link fault on overhead lines. HMC consists of two main parts, one which is director switches (DSs) made from number of series insulated-gate-bipolar-transistors (IGBTs) and second one is wave shaping circuit (WSC) consists of stack of full-bridge sub modules (FSMs). This book mainly focuses on the modulation techniques and control for the DS's and WSC's to determine the number of FSM to be inserted. Nearest level control (NLC) method and third harmonic injection and sorting method also discussed for the capacitor voltage balancing. The book gives all the simulation diagrams results and programs required.

Prathamesh Gija
Dhanashri Changa
Anil Bodh

Protection of Permanen Fault on DC Overhead Line By Hybrid Converte

I have completed my BE Electrical from Shivaji University, Kolhapur. Also I have completed my Master degree in Electrical Power System from Pune University, Pune. My specialization is HVDC, Power Electronics, Protection. This book gives Protection of HVDC system from permanent faults, third harmonics elimination method and lot more.

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Protection of Permanent Fault on DC Overhead Lines By Hybrid Converter

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By (author) : Prathamesh Gijare
Dhanashri Changan
Anil Bodhe

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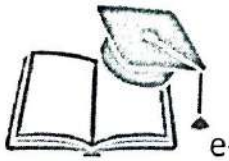

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Microgrid concept provides suitable context for installing distributed generation resources and providing reliability and power quality for loads. During grid connected mode of microgrid, all stability issues are get handled by main grid due to its sufficient inertia. Microgrid have to face all stability related problems itself when islanding is occurred. Load as well as inverter parameters affects on stability of microgrid. For stability analysis of microgrid it is necessary to consider the effect of control strategy used in inverter. The controller of inverter should sense the signals accurately and quickly because controller parameters participates in small signal stability of microgrid. Mathematical modelling of static, dynamic and composite load has been performed in this dissertation. Respective work is carried out in MATLAB environment and analysis of small signal stability has been performed considering different parameters of microgrid.

Dhanashri Changan
Anil Bodhe
Prathamesh Gijare

SSS Analysis of Microgrid with Comprehensive Load Modelling

This is Dhanashri Changan, I have completed M-Tech from KKWIEE&R, Nashik. I am currently working as assistant professor at SBPCOE, Indapur. My research area is microgrid and its stability analysis.

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Review on Free Piston Engine

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[1] [2] [3] [4] Student, Rajgad Dyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi, Bhor, Pune, Maharashtra.

Abstract— The research of the Free-Piston Engine is taking up pace since the last two decades mainly carried by the Dutch companies NOAX and the Innas. The research in free piston engines has recently concentrated on hydraulic versions but some development in electric version has also been reported. This seminar mainly discusses the case study of the CHIRON (Pronunciation ky'-Rahn) Free Piston Engine, which is a hydraulic free piston engine developed by the Dutch companies Innas, and NOAX. CHIRON in the Greek mythology was a Centaur: neither a horse nor a man but a synthesis of a man and a horse. Similarly, the CHIRON discussed in this paper is neither an engine nor a pump: it is a combination – or better – an integration of an engine and a pump. In CHIRON the combustion energy is directly converted into Hydraulic energy. The CHIRON features direct electronic control of the injection parameters, the flow, and the compression ratio. The flow output is controlled by means of Pulse Pause Modulation of the piston frequency. The CHIRON is designed for the common pressure rail systems. In these systems, the hydraulic energy is supplied through a common rail. Special attention will be paid specific characteristics of the CHIRON compared to conventional engines and pumps.

Index Terms— Piston, combustion cylinder.

I. INTRODUCTION

Complexity is never a goal in designing a new product. Products are designed to have low fuel consumption and reduced emissions and most importantly to satisfycustomers. Yet, the products are complex though the simpler solutions are feasible A good example is the motor pump combination one can find on site machines. In these machines, the energy of the combustion process is converted in to mechanical energy by means of a piston. On the other side, the mechanical energy is converted in to hydraulic energy by translating piston. If we are able to connect the combustion piston directly to the hydraulic piston, then we can eliminate all mechanisms in between. This would then result in the 'free piston engine'. However, the currently the engine and pump are defined as two separate machines, both having rotating shaft to connect one machine to the other. This problem arises due to the reasons that the hydraulic industry is relatively young and when hydraulic motors and pumps arrived in the market, the crankshaft engine, mechanical drives and the electric motor had already defined a quasi standard; the rotating shaft.

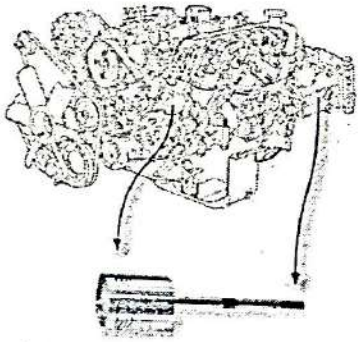

Figure: Free Piston Combination of Combustion Piston and Hydraulic Plunger

The hydraulic industry had to adapt to this 'standard', especially since in most cases the hydraulic systems were seen as an accessory, leaving the main drive functions to gears, chains and belts. Furthermore, the diesel engine was already produced in large quantities and there was no reason to construct a new engine for the small beginning hydraulic market.Nevertheless, many attempts have been made to design and built a combination of an engine and a pump without the mechanical complexity of piston rods and crankshafts. Since the combination of the combustion piston and the hydraulic plunger is not connected to a mechanism, and the combined piston has the degree of freedom in the axial direction, these machines are called as the 'free piston engines'.

1.1. Free Piston Engine vs. Conventional Engine

Reasons, why there are research and development activities

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of Rajgad Dyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi presented his/her research paper titled *Stress Analysis of V-Stirrer Blade Made For Conical Agitation for MDF.*

during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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Stress Analysis of V-Stirrer Blade Made For Conical Agitation for MDF

[1] Dattatraya B. Misal, [2] Jayant P. Borude [3] Nilesh D. Bagul.
[1] [2] [3] Assistant Professor, Rajgad Dyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi, Bhor, Pune, Maharashtra..

Abstract— This work gives approach for performing stress analysis of an agitator of a large mixing vessel used in pulping process plant. The analysis is carried out to estimate stress and deflection in agitator body. The agitator is subjected to vibration due to multi-axial forces resulting from bending and torsional loading imposed by the mixing operation. The approach followed in this work involves Stress analysis of agitator blade for unit displacement using FE method. The work also discusses an alternative approach for estimating stress amplitude variation through dynamic stress analysis. Research work gives solution for developing the agitator with V shaped weldment which is made by using weldment techniques. Agitator looks V shaped from Front view and circular hub is designed to hold the structure of agitator. Project gives result and validation on the basis of software tool as well as mathematical tool. This proves the strength in designed agitator. Along with agitation process of pulping stirrer is also considered which is mounted on top of the agitator hub.

Index Terms— Agitator, Ansys, Deformation, Hub, Pulp, Stresses, Stirrer, weldment.

I. INTRODUCTION

Agitation is the process to induce motion of material in a specified way. In the chemical and other processing industries, many operations are dependent to a great extent on effective agitation and mixing of fluids. Mixing is one of the most widely used unit operations in the chemical and allied industries. Generally, agitation refers to forcing a fluid by agitator means to flow in a circulatory or other pattern inside a vessel. In spite that agitator is very effective in industry today but still has many problems which affect the agitation process.

II. NECESSITY OF CONICAL AGITATOR

In fiberboards manufacturing plant glue binders are added with sawdust in a cylindrical vessel and mixed together by the use of an agitator. When process is stopped for some time may be one or two days so residual mixture remains at the bottom of the vessel even after empting. This gets hardened over a period of time and needs to be cleaned every time which is tedious and laborious process. To overcome this difficulty bottom of the vessel can be made of conical shape instead of cylindrical. In conical vessel material gets sloping surface to flow down. This results in redesigning of agitator blades to suit the shape of the vessel. So in this project agitator blade can be designed.

III. OBJECTIVES

Main objectives in this Paper are as follows:

1. To design compact and vertical mount conical cabinet agitating device.
2. To perform the analytical design and software validation for blade mechanism which is withstand with the boundary conditions of the working system.

IV. ANALYTICAL CALCULATION

A) Downward force of pulp acting on blade

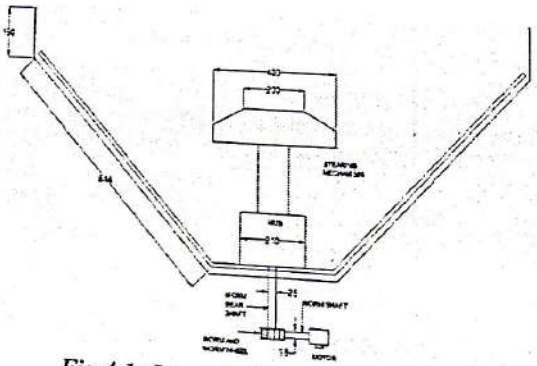

Fig 4.1: Layout of an agitation setup

Weight of total stirring assembly = 546.06 N
Weight of blade assembly, W = 423.31 N
Weight of pulp = 9195.13 N
Downward force of pulp = $V \times \rho \times g = 745.32$ N

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This is to certify that **Chetan Gaikwad**

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during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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Design Modeling and Experimentation of Linear Motion Transducer by Using Flexural Bearing.

[1] Chetan S. Gaikwad, [2] Shrikant B. Jadhav, [3] Deepak A. More
[1] [2] [3] Assistant Professor, Rajgad Dnyanpeeth's Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi, Pune, Maharashtra

Abstract— **The availability and wide range of applications of low cost sensors have encouraged a demand for improved sensor performance. Smart sensors are becoming integral parts of system and are performing the functions that previously could not be performed. Displacement can be measured by using precise measuring instruments such as LVDT, laser instruments which offers high speed, high resolution and highly accurate laser sensors (non-contact linear position sensor) for measuring displacement and position. But all these instruments are very costly and require high maintenance and they are very complex in design. So there is need to develop a system which gives high accuracy as that of existing measuring instruments and should also have low manufacturing and running cost. Proposed system consists of unique design of flexural bearing which is highly sensitive to axial movement. Deflection of bearing is recorded by the strain gauges in the form of resistance. This resistance is converted into the voltage form using strain gauge module. This voltage is given to ARDUINO microcontroller and using MATLAB program the results are generated.**

Index Terms— **Flexural bearing, FEA, Strain gauge, MATLAB, ARDUINO.**

I. INTRODUCTION

THE flexure hinge is a mechanical member that substitutes a conventional rotational joint in order to produce a limited angular motion about one axis. Flexural mechanisms are colossal structures which provide desired motion with the help of flexural hinges. Due to their smooth operation flexural joints have little friction losses and also does not require lubrication. They generate smooth and continuous displacement without backlash. Flexure jointed mechanism have been widely utilized in precision instruments such as watches & clocks for hundreds of years, and continued to be used today in applications such as optical systems, micro robots, and clean room equipment.

Metal rollers meet the meaning of a requirement entirely well, since they are firm in one heading, and give low imperviousness to movement in different bearings. By the by, movement toward DOF is connected with undesirable impacts, for example, erosion, stiction and backfire that ordinarily emerge at the interface of two surfaces. These impacts are non-deterministic in nature, and breaking point the movement quality.

A. Flexural mechanism and significance

Flexure direction has the point of preference over most different heading that they are straightforward and therefore reasonable. They are likewise regularly smaller, lightweight, have low contact, and are less demanding to repair without particular gear. Flexure direction has the impediments that the scope of movement is restricted, and frequently exceptionally constrained for orientation that bolster high loads. Flexure course can give low erosion furthermore give extremely unsurprising rubbing. Numerous different heading depend on sliding or moving movements, which are fundamentally uneven in light of the fact that the bearing surfaces are never consummately level. A flexure bearing works by bowing of materials, which causes movement at tiny level, so grinding is extremely uniform. Consequently, flexure direction is regularly utilized as a part of touchy accuracy measuring hardware.

Flexure jointed instrument have been generally used On precision instruments for example, such that watches & tickers to hundreds about years,, and continued to be used today in applications such as optical systems, micro robots.

B. Types of flexural

a) **Flexural Hinge**

Flexure hinges hold several advantages over classical rotational joints, including

a. No friction losses
b. No need for lubrication
c. No hysteresis
d. No clearance
e. No wear.
f. Low stiffness (bending, torsion)
g. limited movement

Applications:- micro and nano-scale mechanisms in precision engineering.

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SUMOD PAWAR

Raigad Dyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

Experimental Investigation of Performance and Emission Testing of Sea Mango Seeds Oil Biodiesel

Dr. S. B. Patil
Principal, SCSCOE
Pune

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This is to certify that **Prof. Dattatraya B. Misal**

of Rajgad Dyanpeeth Technical Campus, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi presented his/her research paper titled *The Reinforcement of Carbon Nanotubes in Epoxy-based CFRP Composites*

during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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The Reinforcement of Carbon Nanotubes in Epoxy based CFRP Composites

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***Abstract*— Epoxy or polyepoxide is a thermosetting epoxide polymer that cures (polymerizes and cross-joins) when blended with a curing operator or "hardener". Most basic epoxy resins are created from a response amongst epichlorohydrin and bisphenol-A. Epoxy tar is most generally utilized as a lattice for cutting-edge composites because of their unrivaled warm, mechanical and electrical properties; dimensional solidness and synthetic protection. Epoxy surface coatings are among the most broadly utilized modern completes and give unrivaled attachment, adaptability and consumption protection when connected to metallic substrates. Epoxy gums are likewise utilized with different curing specialists, diluents and properties.**

I. INTRODUCTION

Carbon nanotubes (CNTs) possess exceptional mechanical, electrical and thermal properties, making them ideal fillers for polymer nano-composites for various structural and functional applications. Factors influencing the properties of CNT nano-composites have been extensively studied and the development of nano-composites with much improved mechanical and functional properties have been reported. Incorporation of CNTs into a polymer matrix along with long fibre reinforcements to produce hybrid composites has also attracted significant attention in recent years. The mechanical and fracture properties were improved after addition of small quantities of carbon nanotubes to the matrix. It is also well established that the quality of composite components depends on the processing route adopted for fabrication. The aspect of producing CNT-CFRP has not been given due attention. The aim of this topic is to develop CNT containing CFRP hybrid composites for specialty applications. For high end structural applications composites are processed and by similar process of prepregging the epoxy-based CNT-CFRP hybrid compositesare produced. The prepreg manufacturing involves, i) alignment of continuous fibre bundles or tows in the longitudinal direction, ii) continuous wetting, or impregnation, of tows using a polymer resin by passing them through a resin bath, iii) maintaining the uniform thickness of resin using a device called the doctor blade, and iv) collecting the impregnated fibres on a take-up spool. In this study, special focus has been placed on studying the effects of resin type and CNT content on various critical parameters in a solvent less prepregging process and also the in variations of epoxy and prepreg during curing. Crucial mechanical properties, like strength, modulus, interlaminar shear strength and torsional shear properties of the resulting hybrid composites were evaluated. These are significant, especially for structural applications, like specialty sports goods and the main body of wind turbine blade.

1.1. Composite Materials

Any material which is made up of two or more different materials with a clearly distinguished boundary between them either prepared from naturally available organic ingredients or synthetically developed materials is called as composites. This material is selected for testing based upon its feasibility for following applications.

- Aviation
- Ballistic
- Bulletproof jackets & helmets
- Spacecraft
- Marine
- Automobiles

All the above mentioned are challenging applications & requires advanced materials of very high strength as well as low weight as possible i.e. high strength per unit weight. For this peculiar requirement carbon fibers, and carbon nanotubes are most suitable among all available options. Due to this reason the resin is reinforced with carbon fibers & carbon nanotubes to prepare the composite materials of very good strength and sustainability in any physical environment. It also provides considerable weight reduction as compared to the metals.

Basically fiber reinforced composite materials are of 3 types:

- Polymer based composites
- Metallic based composites

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of S. V. National Institute Of Technology, Surat, Gujarat

research paper titled *One Dimensional Study of Calcium Distribution in a Hepatocyte cell In presence of Buffer by Finite Volume Model*

during the "2nd International Conference on Applied Sciences, Engineering, Technology and Management (ICASETM -2018)" held at Rajgad Dnyanpeeths Technical Campus, Pune, Maharashtra on 20th & 21st April, 2018.

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One Dimensional Study of Calcium Distribution in a Hepatocyte cell in presence of Buffer by Finite Volume Model

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Abstract- - **Calcium is ubiquitous second messenger which controls vital functions of almost all eukaryotic cells. Hepatocyte cell is parenchymal cell of liver. The regulation of calcium concentration in a hepatocyte cell is still not well understood. A model is proposed in this paper to study the distribution of calcium concentration in a hepatocyte cell in presence of buffers. The parameters like concentration of buffer, diffusion coefficient of calcium etc. have been incorporated in the model in the form of boundary value problem in one dimension. The boundary conditions have been formed to incorporate bio physiological facts of the problem. The finite volume method has been implemented to obtain the solutions. The program is developed on MATLAB 2014a to obtain numerical results and they are used to study the effect of buffers on calcium concentration in hepatocyte cell in steady state case. The information can be generated by developing such models of calcium concentration in hepatocyte cell for proper health care of liver.**

Index Terms— **Calcium, Buffer, Hepatocyte cell, Finite volume method.**

I. INTRODUCTION

The largest internal gland in human body is a liver. It secrets many essential hormones required for digestion, metabolism etc. Almost all the activities necessary for fine coordination among internal organs are performed by liver. Therefore tissues of the body cannot survive without proper working of liver. The proper working of liver depends upon the fine coordination of calcium level in hepatocyte cell. Intracellular calcium signaling regulates varieties of function performed by hepatocyte cell. The calcium binds with many proteins and modifies their enzymatic properties. Thus cell need to keep calcium concentration in range from 0.1μM to at most 1μM [1]. The source influx of calcium and buffers play an important role in this calcium regulation in the cell. Buffers are large proteins that soak up nearly 99 % of calcium. The buffers associate with calcium ions to reduce the calcium concentration in the cell [2].

The attempts have been made in the past to study calcium distribution in various cells like neuron [3], myocyte [4], oocytes [5], astrocyte [6], fibroblast [7] and acinar cells [8] under various conditions. However, very little attention has been paid to the study of calcium distribution in hepatocyte cell. In the present work a finite volume model is proposed to study steady state one dimensional calcium concentration distribution in hepatocyte cell. The parameters like buffer, source influx and diffusion coefficient of calcium has been incorporated in the model. The study has been carried out in presence of exogenous buffers and endogenous buffer. In the next section the mathematical formulation has been presented and solution is obtained by implementing finite volume method.

MATHEMATICAL FORMULATION

The calcium released from source ER binds with the buffers present in cytosol of cell. If there are n buffers present in the cytosol of hepatocyte cell then association and dissociation of calcium ion (Ca2+) with buffer (Bi) is governed by following reaction diffusion equation [2].

$$Ca^{2+} + B_i \underset{k_i^-}{\overset{k_i^+}{\rightleftharpoons}} CaB_i \qquad (1)$$

Here, Ca 2+ is free calcium ion binds with ith buffer Bi to form calcium bound buffer CaBi.

Using law of mass action and Fick's law of diffusion the change in calcium concentration with respect to time is given by following reaction diffusion equation.

$$\frac{\partial [Ca^{2+}]}{\partial t} = D_{Ca} \nabla^2 [Ca^{2+}] + \sum_i R_i \qquad (2)$$

Where, $R_i = -k_i^+ [Ca^{2+}][B_i] + k_i^- [CaB_i]$ (3)

D_{Ca} is diffusion coefficient of free calcium (200-300$\mu m^2/s$), k_i^+ is association rate constants and k_i^- is dissociation rate constant for given ith buffer. Square bracket represents concentration of species enclosed in it.

We assume that total buffer concentration remains conserved. Therefore total concentration of ith buffer $[B_i]_T$ (50-150 μM) is given by,

$$[B_i]_T = [B_i] + [CaB_i]$$

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This is to certify that the paper entitled A Methodology for extracting standing human bodies from single images. was presented in the NATIONAL CONFERENCE ON RESEARCH, DESIGN AND DEVELOPMENT IN ENGINEERING, MANAGEMENT & SCIENCES (NC-RDD-EMS-2017) held on 18 /03/2017 at RAJGAD DNYANPEETH TECHNICAL CAMPUS (Shri Chhatrapati Shivajiraje College of Engineering) Dhangawadi,Tal: Bhor, Dist: Pune (Maharashtra).

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A Methodology for Extracting Standing Human Bodies from Single Images

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ABSTRACT:
Segmentation of human bodies in images is a challenging task that can facilitate numerous applications, like scene understanding and activity recognition. In order to cope with the highly dimensional pose space, scene complexity, and various human appearances, the majority of existing works require com-putationally complex training and template matching processes. We propose a bottom-up methodology for automatic extraction of human bodies from single images, in the case of almost upright poses in cluttered environments. The position, dimensions, and color of the face are used for the localization of the human body, construction of the models for the upper and lower body according to anthropometric constraints, and estimation of the skin color. Different levels of segmentation granularity are combined to extract the pose with highest potential. The segments that belong to the human body arise through the joint estimation of the foreground and background during the body part search phases, which alleviates the need for exact shape matching. The performance of our algorithm is measured using 40 images (43 persons) from the INRIA person dataset and 163 images from the "lab1" dataset, where the measured accuracies are 89.53% and 97.68%, respectively. Qualitative and quantitative experimental results demonstrate that our methodology outperforms state-of-the-art interactive and hybrid top-down/bottom-up approaches.

KEYWORDS: Adaptive skin detection, anthropometric constraints, human body segmentation, multilevel image segmentation.

1. Introduction

Extraction of the human body in unconstrained still mages is challenging due to several factors, including shading, image noise, occlusions, background clutter, the high degree of human body deformability, and the unrestricted posi-tions due to in and out of the image plane rotations. Knowledge about the human body region can benefit various tasks, such as determination of the human layout , recognition of ac-tions from static images , and sign language recognition. Human body segmentation and silhouette extraction have been a common practice when videos are available in con-trolled environments, where background information is avail-able, and motion can aid the segmentation through background subtraction. In static images, however there are no such cues, and the problem of silhouette extraction is much more challenging, especially when we are

For human body segmentation in static images. We decompose the problem into three sequential problems: Face detection, upper body extraction, and lower body extraction, since there is a direct pair wise correlation among them. Face detection provides a strong indication about the presence of humans in an image, greatly reduces the search space for the upper body, and pro-vides information about skin color. Face dimensions also aid in determining the dimensions of the rest of the body, according to anthroponetric constraints. This information guides the search for the upper body, which in turns leads the search for the lower body. Moreover, upper body extraction provides additional in-formation about the position of the hands, the detection of which is very important for several applications. The basic units upon which calculations are performed are super pixels from multi-ple levels of image segmentation. The benefit of this approach is twofold. First, different perceptual groupings reveal more meaningful relations among pixels and a higher, however, abstract semantic representation. Second, a noise at the pixel level is suppressed and the region statistics allow for more efficient and robust computations. Instead of relying on pose estimation as an initial step or making strict pose assumptions, we enforce soft anthropometric constraints to both search a generic pose space and guide the body segmentation process. An important principle is that body regions should be comprised by segments that appear strongly inside the hypothesized body regions and weakly in the corresponding background. The general flow of the methodology can be seen in Fig. 1.

The major contributions of this study address upright and not occluded poses.

1) We propose a novel framework for automatic segmentation of human bodies in single images.
2) We combine information gathered from different levels of image segmentation, which allows efficient and

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A MOVING TARGET DETECTION ALGORITHM BASED ON THE DYNAMIC BACKGROUND

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ABSTRACT: *Advantages and disadvantages of two common algorithms frequently used in the moving target detection: background subtraction method and frame difference method are analyzed and compared in this paper. Then based on the background subtraction method, a moving target detection algorithm is proposed. The background image used to process the next frame image is generated through superposition of the current frame image and the current background image with a certain probability. This algorithm makes the objects which stay long time to be a part of the background after a certain period of time, but not be detected as a part of foreground. The experimental results show that this algorithm can detect moving targets more effectively and precisely.*

KEYWORDS-background subtraction; frame difference; moving target detection; dynamic background.

I. INTORDUCTION

Intelligent video surveillance is a new research direction in the field of computer vision. It uses the method of computer vision and detects the movement target in the monitoring scene by automatic analysis the image sequence by the camera recording. And the research on moving target detection and extraction algorithm can be said to be key issues in intelligent video. Its purpose is the detection and extraction of the moving targets from the scene of the video image sequence. Therefore the effective detection of moving targets determines the system performance. Therefore, this article focuses on key technology in the moving targets detection and extraction. In this paper, firstly, it has a brief introduction of pretreatment of the video images. It reduces the error in the image processing after. Secondly the paper focuses on analysis comparison the two algorithms: the background subtraction and the frame difference. Lastly, this paper selects based on the background subtraction method to improve it and present a moving target detection algorithm based on the background which has dynamic changes

II. IMAGE PREPROCESSING

Noise Noise is any entity which is not of benefit to the purpose of image processing. The influence of noises on the image signal amplitude and phase is complexity. So how to smooth outnoise and keep the details of image is the major tasks of the image filtering. B. Noise Filter We use the median filter in this paper. Median filter is a non-linear method for removing noise. Its basic idea is to use the median of the neighborhood pixel gray value instead of the gray value of pixel point. For the odd elements, the median refers to the size of the middle value after sorting; For evennumbered elements, the median refers to the average size of the two middle values after sorting [1]. Median filter as a result of this method is not dependent on the neighborhood with a lot of difference between typical values, which can remove impulse noise, salt and pepper noise at the same time retain the image edge details. In general the use of a median filters contain oddnumbered points of the sliding window. Specific methods is determining a first odd-numbered pixel window W. Each pixels in window line by the size of the gray value, and use the location of the gray value between the image f xy (,) gray value as a substitute for enhanced images g (,) x y ,as follows: g(,) { (,),(,) } x y Med f x k y l k l W = — ∈ (1) W is the window size which is selected.

III. . IMAGE SEGMENTATION

In the Images research and application, Images are often only interested in certain parts. These parts are often referred to as goals or foreground (as other parts of the background). In order to identify and analyze the target in the

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SLA and Idle Server Monitoring Algorithm in QoS Load Balancing.

1.Sana J. Shaikh, *Sinhgad Collage of Engg.*
2.Prof.S.B.Rathod, *Sinhgad Collage of Engg.*

Abstract—The scheduling algorithm plays vital role in day-today life. The load balancer can map task to resource that based on some particular objectives. The main objectives of load balancing is resource utilization and task completion. Cluster formation is done based on properties and processing power of server and assign task to first phase. In First phase, Service Level Agreement (SLA) algorithm determines priority of tasks, cost estimation and assign task to the respective cluster to second phase. In second phase, the Idle-server monitoring algorithm applies to check server is idle or not and result is forwarded to third phase which check whether task is get processed or not and reassignment of task will be done and analyze the result. The main aim is to understand the processing power and number of tasks are going to be processed by server to maximize throughput. This paper shows that maximum throughput by introducing Quality-of-Service in cloud environment.

Index Terms—Cloud computing, Quality of Service, Load balancing scheduling techniques, Load balancing algorithm.

1 Introduction

The cloud load balancing is one type of load balancing method that is performed in cloud computing environment. Load balancing is process of distributing or dividing workloads across multiple computing system or resources. A load balancing reduces cost and maximizes availability of resources which is associated with document management systems. In order to suit user requirements, it uses a precise method to map the tasks to appropriate cloud resources, though by default maximum strategies are static in nature[6].

Whenever cluster formation is done then the cluster of server should be session-aware, so that any client connect to any cluster of servers at any time , the user gets unpredicted experience.[10] This is usually achieved with in-memory database or shared database. In distributed resources, scheduling problem is process that maps and manages the implementation of independent tasks. In order to meet the users specific need, process can provide appropriate resources to ensure that the workflow can be successfully completed.[6] Cloud Computing is state which gives proper and on-demand network access to shared pool of computing resources like network, storage, servers and services that are to be rapidly released with the efficient way in minimum management.[7]

At present, cloud computing is suffering from some challenges like security, QoS, Power Consumption and Load Balancing etc. Currently, as there is an increase in technology and consumer demands, there is excessive workload which calls for the need of the load balancer.[6] To balance the task properly the task should be get prioritize so that the tasks can be handled properly. The priority of task is depend upon the processing power of ant server or system. The processing power is calculated depend upon the hardware configuration such as input and output functionalities of system[6][7].

The concept of balancing the load among the server in cloud has an important effect on the performance.[10] The uneven dis-

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SLA AND IDLE SERVER MONITORING ALGORITHM WITH FEEDBACK IN CLOUD ENVIRONMENT

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ABSTRACT:

The scheduling algorithm plays vital role in day-today life. The load balancer can map task to resource that based on some particular objectives. The main objectives of load balancing are resource utilization and task completion. Cluster formation is done based on properties and processing power of server and assign task to first phase. In First phase, Service Level Agreement (SLA) algorithm determines priority of tasks, cost estimation and assign task to the respective cluster to second phase. In second phase, the Idle-server monitoring algorithm applies to check server is idle or not and result is forwarded to third phase which check whether task is get processed or not and reassignment of task will be done and analyze the result. The main aim is to understand the processing power and numbers of tasks are going to be processed by server to maximize throughput. This paper shows that maximum throughput by introducing Quality-of-Service in cloud environment.

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At present, cloud computing is suffering from some challenges like security, QoS, Power Consumption and Load Balancing etc. Currently, as there is an increase in technology and consumer demands, there is excessive workload which calls for the need of the load balancer.[6] To balance the task properly the task should be get prioritize so that the tasks can be handled properly. The priority of task is depend upon the processing power of ant server or system. The processing power is calculated depend upon the hardware configuration such as input and output functionalities of system [6] [7].

The concept of balancing the load on the server on cloud has an important effect on performance.[10] The uneven distribution of load among the servers result in server overloading and may lead to crashing of servers. This degrades the performance of server. Load balancing is technique that distributes the load equally among the servers which avoid the overloading of server, server crashes and performance degrades. Load Balancing is an important factor that good response time, effective resource utilization. Thus the effective load balancing is needed. [6][10]

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Implementation of Virtual Reality in Construction industry

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Abstract–

Present-day construction projects are characterized by short-term partnerships between multidisciplinary teams with varying levels of process maturity and information handling capability. They involve the planning, Architectural Design and erection of structures of all types. Compared with other industries, the construction sector has relatively poor profit margins and low efficiency levels. The product development process in construction is still structured as a sequential chain of activities in which each activity is separated in time and space and where Architectural Design information is communicated using traditional documents, such as 2D drawings and written specifications. This process is slow and error prone and reflects the functional orientation of the construction project. However, lessons learned from the manufacturing industry have shown that new Architectural Design processes using modern information and communication technology (ICT),tools such as concurrent engineering and virtual reality (VR) can increase efficiency and reduce lead times. So far, VR has been used sporadically in the construction industry, often from the perspective of visualizing the product Architectural Design for the client. The objective of present research has been to investigate how VR (and thereby 3D) can be used during the planning, Architectural Design and realization phase of a construction project with the emphasis on complex building products. What are the main benefits and how should the construction project be organized in order to make use of the potential benefits the technology offers? The main hypothesis during present research has been that the use of digital prototypes visualized using VR technology makes it easier to identify, analyze, coordinate and communicate the product Architectural Design in order to improve the decision-making and thereby the final product. Virtual reality technologies both play vital roles in the construction industry. Virtual reality technologies, however, have a higher benefit when compared to Real. The technology types are discussed,with their similarities and differences explained. The past, present, and future is described. Some benefits of using Virtual reality technology are discussed. The drawbacks are mentioned, with the way to correct them detailed.

Keywords: Virtual Reality (VR),Construction Industry, Augmented Reality (AR)

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"COMPARATIVE EXPERIMENTAL STUDY ON CYLINDRICAL COMPRESSIVE STRENGTH OF CASTED & CORED CYLINDERS OF FLY ASH CONCRETE BY USING NDT"

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ABSTRACT:–
Nondestructive testing (NDT) has the potential to be a powerful investigative tool due in part to its ability to detect problems without inducing further damage or through those where the concrete surface is slightlydamaged topartially destructive tests, such as core tests and pullout and pull off tests, where the surface has to be repaired after the test, but also because it does so with minimal expenditures of time and manpower The range of properties that can be assessed using nondestructive tests and partially destructive tests is quite large and includes such fundamental parameters as density, elastic modulus and strength as well as surface hardness and surface absorption, reinforcement location, size and distance from the surface. In some cases it is also possible to check the quality of workmanship and structural integrity. In this project work, three grades of fly ash concretes M20, M25 &M30 are used for the testing purpose with thereplacement of cement by 10% of fly ash. The tests for compressive strengths of two types of sizes 100 x 200 mm for cored & 150 x 300mm for casted cylinders carried out. Thetests results are recorded for the 7, 14, 21, & 28 days. The compressive strength & quality of concrete is found by variousNDT tests available. Both the results for casted cylinders and cored cylinders are compared and validated with modeling fromsoftware ABACUS.

KEYWORDS—Fly ash Concrete, Compressive strength, Cylinders, Abaqus analysis.

I. INTRODUCTION

It is a great deal of the quality assurance and forensic work performed on civil engineering structures revolves around the use of destructive testing techniques.

In the past, NDT has usually been approached in an entirely empirical manner. Typically, this was done by performing large numbers of tests with a particular piece of equipment and then analyzing the results in an attempt to find some pattern that represents the expected damage. There are a number of advantages associated with this approach. It will allow proper correlation of NDT Such information is essential in establishing acceptable performance of new structures and also gives the rough idea about the concreting..

By combining a laboratory testing program that simulates the strength mechanisms in concrete with nondestructive testing technologies this research will identify the parameters related with compressive strengths. Knowledge of these key will allow for the selection of appropriate NDT technologies for monitoring changes. This effort will thus provide the groundwork for future research aimed at using nondestructive testing.

Knowledge of the condition of newly constructed structures will provide the quality assurance data necessary to ensure compliance with the performance-based specifications approach currently being adopted. Similarly, the ability to detect, identify and quantify existing damage at an earlier age than conventional techniques will minimize the costs associated with rehabilitation. Finally, a comprehensive NDT based evaluation program will set the stage for a rational framework for actual service life modeling of structures, with an emphasis on providing information for the development of optimum maintenance regimes and rehabilitation techniques.

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COMPARATIVE STUDY OF R.C.C AND STEEL-CONCRETE COMPOSITE (G+10) RESIDENTIAL BUILDING

[1]*A. S. BOKE,* [2]*K. R. SURYAWANSHI*

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ABSTRACT :
Steel-concrete composite construction has gained large acceptance all over the world as an substitute for pure steel and pure concrete construction. However this approach is a new concept for construction industry. R.C.C is no longer economical because of their increased dead load, hazardous formwork. The present study deals with comparison of reinforced concrete, steel and composite structures under the effect of static and dynamic loads. The results of this work show that composite structures are best suited for high rise buildings compared to that of steel and reinforced concrete structures. Response spectrum method is used for comparison of three structures with the help of ETABS software.

KEY WORDS: Composite beam, Composite column, Composite slab, Bare frame, Base shear, Displacement and Inter-storey drift.

1. INTRODUCTION

In today's modern period and faster growing economy with simultaneously increasing human population the need of shelter with higher land cost in major cities where further horizontal expansion is not much possible due to space shortage, we are left with the solution of vertical expansion. Steel-concrete composite construction is a faster technology which saves lot of time in construction which will help the planners to meet the demand with minimum time in real estate market. This technology provides more carpet area than any other type of construction. Composite construction also enhances the life expectancy of the structure.

Composite construction has gain wide acceptance because of their many advantages i.e. faster to erect, lighter in weight, better quality control, reduced time of construction, has better ductility and hence superior lateral load resisting behavior.

The present research is an attempt to study the behavior of reinforced concrete, steel and composite structures under the effect of seismic loading. The parameters considered are base shear, displacement and inter-storey drift.

2. COPOSITE MULTISTORIED BUILDINGS

The primary structural components use in composite construction consists of the following elements.

1. Composite deck slab
2. Composite beam
3. Composite column
4. Shear connector

2.1. COMPOSITE DECK SLAB

Composite floor system consists of steel beams metal decking and concrete. They are combined in a very efficient way so that the best properties of each material can be used to optimize construction techniques. The most common arrangement found in composite floor systems is a rolled or built-up steel beam connected to a formed steel deck and concrete slab. The metal deck typically spans unsupported between steel members, while also providing a working platform for concreting work. The composite floor system produces a rigid horizontal diaphragm, providing stability to the overall building system, while distributing wind and seismic shears to the lateral load-resisting systems.

Composite action increases the load carrying capacity and stiffness by factors of around 2 and 3.5 respectively. The concrete forms the compression flange – the steel provides the tension component and shear connectors ensure that the section behaves compositely. Beam spans of 6 to 12 m can be created giving maximum flexibility and division of the internal space. Composite slabs use steel decking of 46 to 80 mm depth that can span 3 to 4.5 m without temporary propping. Slab thicknesses are normally in the range 100 mm to 250 mm for shallow decking, and in the range 280 mm to 320 mm for deep decking. Composite slabs are usually designed as simply supported members in the normal condition, with no account taken of the continuity offered by any reinforcement at the supports.

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COMPARATIVE ANALYSIS OF RCC AND STEEL-CONCRETE COMPOSITE MULTISTORIED BUILDING

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ABSTRACT— The majority of building structures are designed and constructed in reinforced concrete which are mainly depends upon availability of the constituent materials and the level of skill required in construction, as well as the practicality of design codes. R.C.C is no longer economical because of their increased dead load, hazardous formwork. However composite construction is a new concept for construction industry. The present comparative study deals with inelastic behavior of RCC and composite structures. The pushover analysis is carried out using E-tab 15 and compare the various parameters like story drift, displacements etc. The reviews shows that, the composite structures are best suited for high rise buildings compared to that of steel and reinforced concrete structures.

KEYWORDS—*steel-concrete composite; SRC; CFT; equivalent linear static analysis; story drift ; story displacement,*

I INTRODUCTION

Now a days, in India; to fulfill the need of high rise building, composite is best suited for infrastructural growth rather than RCC and Steel. Reviews and studies shows that composite construction considerably reduces the gravity load as compare to RCC .composite is compatible and complimentary to each other; they have ideal combination as, steel in tension and concrete in compression, concrete protect the steel from corrosion as well as it gives thermal insulation to embedded steel; though they have almost same thermal expansion. Although the compressive strength and unit cost of reinforced concrete is less than that of structural steel, the use of modern composite systems, allowing the erection of multi-story structural frames to proceed at pace, can make it economically prohibitive to delay the construction of each floor while concrete columns are cast. In Japan, however, the superior earthquake resistant properties of composite beam-columns have been long recognized and have become a commonly used for construction in that region. It was therefore necessary to develop seismic design criteria for typically used Indian structural systems, to advance the use of this efficient type of mixed construction.

II. OBJECTIVE

The purpose of this work is to introduce the steel concrete composite members in high rise building construction.

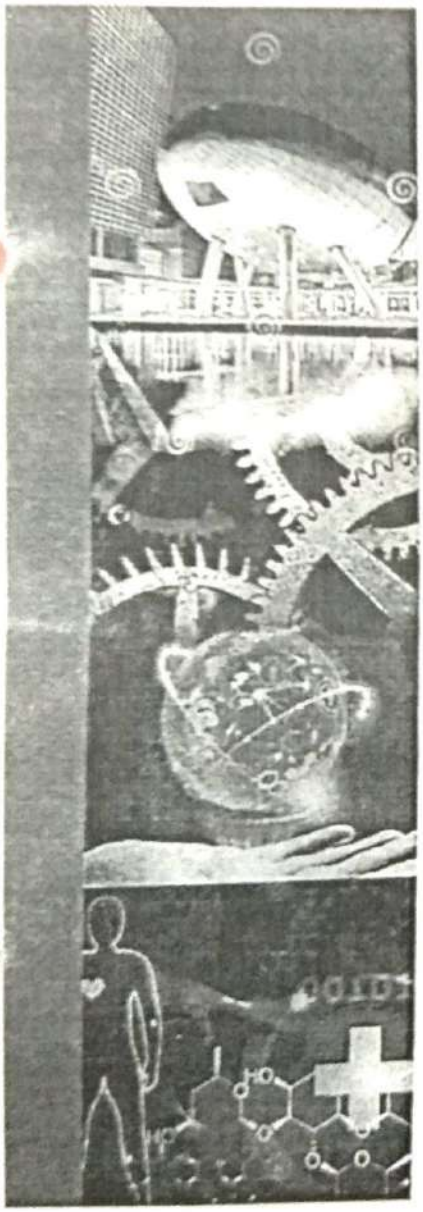
1. Inelastic (Pushover) analysis of both RCC and Composite building frame are carried out using E-tab 15
2. For composite column, Encased rolled steel section in concrete (SRC) and concrete filled steel tube (CFT) are used.
3. The beams are made up from RCC and rolled steel section.
4. Compare the parameters like story drift, displacement etc. of RCC and Composite frame.
5. Suggest the suitability of composite construction as compare with RCC.

III. LITERATURE REVIEWS

Dr. D. R. Panchal In **(2014)** present the simplified method of design of composite slabs, beams and columns and software is developed with pre- and post- processing facilities in VB.NET. All principal design checks are incorporated in the software. The full and partial shear connection and the requirement for transverse reinforcement are also considered.

D. R. Panchal and P. M. Marathe (2011) make the comparative analysis of steel concrete composite, steel and R.C.C. for of G+30 storey commercial building in earthquake zone IV. Equivalent Static Method is used. For modeling of Composite, Steel and R.C.C. structures, ETABS software is used and the results are compared; and it is found that composite structure is found to be more economical. In all the options the values of story displacements are within the permissible limits as per code limits. Steel and composite structure gives more ductility to the structure as compared to the R.C.C. which is best suited under the effect of lateral forces.

LIU Jingbo and LIU Yangbing (2008) creates the CL-CFST (composite beam-concrete filled square tubular column), SL-CFST (steel beam-concrete filled square tubular column), CL-ETRC (composite beam-equivalent stiffness RC column), SL-ETRC (steel beam-equivalent stiffness RC column) and RC frame structures. Then the response spectrum and the inelastic



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DESIGN OF TRAFFIC CONTROL SYSTEM

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Abstract

Traffic control has been a serious issue since human civilisation. The modern world demands mobility. Cars represent the main method of mobility, but today's congested highways and city- streets don't move fast, and sometimes they don't move at all. The India has 70% mobility on the road mode; hence the major problems created in large cities are the traffic congestion, wastage of valuable time in developed countries. For this need to solve the major problem of traffic, to achieve the strategic goal of reducing the congestion and improving the safety of the road users, main aim is to design the best traffic system that will be flexible and adoptive. Intelligent traffic systems (ITS), sometimes called intelligent transportation systems, apply communications and information technology to provide solutions to this congestion as well as other traffic control issues. The intelligent transport system (ITS) takes the first step towards meeting this challenge by providing effective, reliable and meaningful knowledge to motorists in time through signals. Problems like high traffic congestion, low transportation efficiency, low safety and endangered environment can be solved through innovative and sophisticated ways of handling latest techniques. In this project report various factors required to design signal system at intersections are under studies in details to implement them for the design of traffic signals for the data collected through traffic surveys at various congested points Powai Naka, Rajwada Bus Stand, Satara City Bus Stand, Bombay Restaurant of Satara city.

Introduction

Traffic is the movement of people and goods from one location to another. The movement typically occurs along a specific facility or pathway that can be called as guide. It may be a physical guide way, as in the case of a railroad, or it may be a designated route, marked either electronically as in air travel or geographically as in the marine industry. Modes of transportation, can be broadly characterized as road, rail, air, and maritime. Traffic evolves because of a need to move people and goods from one location to another. One of the principal challenges in traffic control is to accommodate the traffic in a safe and efficient way. Efficiency can be thought of as a measure of movement levels relative to the objectives for a particular transportation system and the finances required for its operation. For example, a railroad can be thought of

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DESIGN AND DEVELOPMENT OF AUTOMATIC PNEUMATIC BUMPER SYSTEM

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ABSTRACT :
India is the largest country in the use of various types of vehicles. As the available resources to run these vehicles like quality of roads, and unavailability of new technologies in vehicles are causes for accidents. Though there are different causes for these accidents but proper technology of braking system and technology to reduce the damage during accident are mainly affects on the accident rates. So today implementation of proper braking system to prevent the accidents and pneumatic bumper system to reduce the damage is must for vehicles. To achieve this system modification goal, design this "Automatic Pneumatic Bumper system", the work is a good solution to bridge the gates between institution and industries And able to understand the difficulties in maintaining the tolerances and also quality.

KEYWORDS: *Automatic Pneumatic Bumper system, Antilock Braking System (ABS), Electro-hydraulic system.*

1. Introduction

Today India is the most important under developed country in the world. India is the largest country in the use of various types of vehicles. As the available resources to run these vehicles like quality of roads, and unavailability of new technologies in vehicles are causes for accidents. The number of peoples which are dead during the vehicle accidents is also very large as compared to the other causes of death.

Though there are different causes for these accidents but proper technology of braking system and technology to reduce the damage during accident are mainly affects on the accident rates. So today implementation of proper braking system to prevent the accidents and pneumatic bumper system to reduce the damage is must for vehicles. To achieve this system modification goal, design this "Automatic Pneumatic Bumper system".

We have pleasure in introducing our new project "Automatic Bumper System for Four Wheelers", which is fully equipped by IR sensors circuit and Pneumatic bumper activation circuit. It is a genuine project which is fully equipped and designed for Automobile vehicles. This forms an integral part of best quality. This product underwent strenuous test in our Automobile vehicles and it is good.

1.1 Problem Statement

In conventional vehicles there are different mechanism operated for braking system like hydraulic, pneumatic, air, mechanical, etc. But all these braking mechanisms receive the signal or input power directly from the driver so it totally manual operated. When the driver saw the obstacle or any vehicle in front of his driving vehicle, he was irritated or becomes mazy.

Due to this the driver fails to give the proper input to braking system and proper working is not occurs. Also the driver may not able to pay the full attention during night travelling so there are many chances to accidents. After the accident occurs, there is no any provision to minimize the damages of vehicles. In currently used vehicles generally bumpers used are of rigid types.

These bumpers have specific capacity and when the range of the accidental force is very high then the bumpers are fails and these force transferred towards the passengers. So this system never reduces the damage of both vehicle and passengers. To overcome these unwanted effects design the Automatic Pneumatic Bumpers is important.

1.2 Objectives

The objective of this project includes:

1. To increase the sureness of braking Application.
2. To increase the response time of braking system.
3. To improve the pre-crash safety.
4. To avoid the percentage of passenger injury by using external vehicle safety.
5. To reduce the requirement of internal safety devices like air bags.

2. Literature Survey

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RICE PLANTING MACHINE

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ABSTRACT: The ultimate aim of agriculture or farming in India is not only limited to growing of crops but is also associated with the economic growth of farmers and labours. Rice is one of the staple food crop of our country. Basically in India establishment of rice depends on the availability of moisture, climatic condition, age of the variety, availability of inputs & human labour. Mechanization in agricultural sector is advancing in developing countries like India. Rice is a labour-intensive crop and requires about 80-90 labour days per acre. Timely availability of labour and water for various activities of rice is becoming a problem. Hence to overcome these issues there is a need of mechanization in the field of rice cultivation by using rice transplanter as major tool in this process. There is also need for designing and developing an economical and user friendly rice transplanter for small scale farmers in order to increase the production as well as the quality of rice.In this paper manual rice planting machine along with their merits and demerits has been discussed by studying various aspects of transplantation related to rice and its field performance which are beneficial to the society and farmers. A rice transplanter is specialized equipment best fitted to transplant rice seedlings on the wet muddy paddy field. This paper is focussed on developing a machine which addresses labour problems faced by small scale farmers. The newly developed rice planting machine, can harvest up to two rows of paddy at a time.

KEYWORDS- *Process parameters, production, rice transplanter, transplanting field.*

1.INTRODUCTION

Transplanting rice is perhaps the most elaborated method where seeds are sown in one place and after the seedlings are grown a little they are transplanted to another wide spread area. This is done in order to obtain higher yield and less weeding. According to the annual report of CRRI for 2013-14, total production of rice in the country is estimated at 106.19 million tonnes which was a new record. Production of 2013-14 is higher by 9.5 lakh tonnes than the last year's record production of 105.24 million tonnes.This may be because of rice been staple food crop of our country. Now day's farmers in our country are keen to use new methods as well as new technologies in the field of agriculture. Hence in this paper main focus is on Rice transplanting machine which could provide a huge boost to the agriculture sector specially in the field of rice cultivation. A rice transplanting machine is specialized equipment best fitted to transplant rice seedlings on the wet muddy paddy field.

The mechanical transplanting of the rice has been considered the most promising option, as it saves labour costs, ensure timely transplanting and attains optimum plant density that contribute to high productivity. In India, development and spread of rice planting progressed rapidly during 1990 and 2000. As per the latest technological trends and advancements in agricultural sector such mechanization of paddy planting machine will definitely meet the challenges and will overcome the issues associated, so that the cultivation of paddy is continuous and will definitely is going to meet the future demands with continuous supply of defined volume.

2. AIM & OBJECTIVE

The basic aim of this paper is to study and know the research gap between the use of traditional method and the mechanized transplanters for rice transplantation in India, along with the parameters related to the existing transplanters. In India very few people are aware about different existing transplanter, their benefits and requirements in order to achieve higher productivity and yield. Hence we aim to study about Rice transplanter, their benefits, requirements and help to popularize it amongst the people especially amongst small scale labours in our country so as to minimize cost of production and have better quality of rice. Use of rice transplanter also generates an alternate source of income for rural youth through custom services on nursery raising and mechanical transplanting.

3. LITERATURE REVIEW

In this review paper mechanized rice transplanters in the field of rice cultivation are been discussed by studying various parameters related to transplanter and its field performance. Transplanting essentially refers to the planting of 20- 35 days old and 20-30 cm high

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Study of Round Central Hole in Buckling Analysis of Cross Ply Laminates

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Abstract - Laminated structures find many applications in various engineering fields namely aerospace, bio-medical, civil, marine and mechanical engineering due to easy handling, good mechanical properties and low fabrication cost. Laminated plates with round holes and other openings are extensively used as structural members in aircraft design. These holes are act sometimes as access holes, holes for hardware to pass through, or in the case of fuselage, windows and doors or simply used to reduce the weight of the structure. These laminated structures are often subjected to load in one or more direction in cycles or as intermittent load. Thus there is need to study the failure of these components under bi-axial loading with the view to optimize the shape and lay of the components so as they give maximum service and more life. In this paper bi-axial testing machine is developed to determine bucking load of different materials. Experiments are carried out on cross ply composite under various buckling loads on the bi-axial testing machine. The theoretical results, analytical and experimental results are compared with each other. It is observed that the strength of Bakelite composite plates is higher than glass epoxy laminated composite plate. So Bakelite is more suitable than glass epoxy.

Keywords- buckling, Bakelite, Ansys, biaxial loads,

I. INTRODUCTION

The laminated composite materials are created to improve combination of mechanical characteristics like high strength/stiffness for lower weight, ease of handling and low fabrication cost, stability and improvement of structure aesthetics are achieved. Different types of holes are cut into the composite laminated plates either to form ports for mechanical or electrical systems, to reduce the overall weight of composite materials, to assemble components inside the structure, to serve as doors and windows. In laminated structures, these cutouts causes failure due to increased stress concentration, high interlaminar stresses and delamination due to free edges and also due to the various in plane loading conditions. One way to reduce this failure is by testing the component for the different loading conditions before it is put into the operation.

Failure in the structures is of various types viz: creep, fatigue, alternate & excessive stresses, bending, buckling. Among which buckling is more severe and catastrophic failure that occurs in composite structures. It depends upon the stiffness of the material not on its strength. If the structures are heavily loaded with axial compressive forces then it causes failure due to buckling. The minimum compressive load which exceeds the ultimate load value is called the critical buckling load. Buckling results in elastic instability and can even collapse. So for the reliability and safety of the design under given operating conditions it is necessary to investigate buckling behavior of structures with different characteristics. Also the maximum value of the load which the structure withstands is necessary.

There are numerous ways of reducing or preventing buckling, for example by changing the aspect ratio in plates, increasing the bucking load by changing the fibre orientation or by varying the applied load. Scientists & engineers have used experimental methods to determine critical bucking load which are less cumbersome and time saving as compared to numerical methods which consumes more time and require equation solving. They used INSTRON tensile testing machine for experimentation which is heavy and inflexible & applies only uniaxial loads. In this work a biaxial tensile testing machine is designed and developed which can apply load closer to actual working condition.

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Numerical and Experimental Investigation of Heat Transfer Using Discrete Ribs

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ABSTRACT— A numerical investigation has been carried out to study the performance of V-discrete ribs. The effect of V-discrete rib arrangement on flat plate with forward and backward flow orientation for heat transfer and pressure drop characteristics is studied numerically and compared with performance of smooth plate. The range of parameters for this study is decided on the basis of available present work. The study encompasses Reynolds no. (Re) ranging from 7000 to 30,000, relative roughness pitch (P/e) 10 and angle of attack (α) 45^0. Themaximum enhancement occurs with backward flow orientation with increase in Nusselt no. (Nu) of about 31% compared with smooth plate and that of 16% with forward flow orientation over V-discrete rib plate.

Keywords: V-discrete rib, Forward flow, Backward flow, Relative roughness pitch(P/e).

I. INTRODUCTION

Heat transfer enhancement is directly proportional to turbulence of the fluid flowing over the heated surface. Rate of heat transfer can be increased by reducing thickness of thermal boundary layer over heat exchanger surface. Heat transfer enhancement can be achieved by different means as disruption of laminar sublayer in the turbulent boundary layer, introducing secondary flows, use of secondary heat transfer surface, promoting boundary layer separation, increasing fluid flow rate etc. The heat transfer enhancement techniques mainly classified into two categories as passive techniques and active techniques. The active heat transfer enhancement comes at cost of increased pumping power. For passive heat transfer enhancement there is no need of external power source. Heat exchangers are used for different applications as power generation, refrigeration, heating ventilating and air conditioning systems, process industries, manufacturing industries, aerospace industries, electronic devices cooling systems etc. For different applications there are space constraints for transfer of heat. So there is need to enhance the rate of heat transfer from available space. Consider the cooling passage in gas turbines, solar applications etc. where it is not effective to implement the active techniques for heat transfer enhancement. Also the different vortex generators cannot be placed due to space constraints and the complex designs.

The use of rib roughness is an effective way for the enhancement of heat transfer rate. The roughness rib element breaks up the boundary layer and induces turbulence which results in heat transfer enhancement. These rib elements are being smaller in height as compared to duct size causes turbulence in laminar sublayer adjacent to heated surface i.e. heat transfer is achieved by destroying laminar sublayer. But the increased rib roughness element causes high frictional loss resulting in increased pumping power. Artificial rib roughness is a passive technique of heat transfer enhancement by which thermo-hydraulic performance of heat exchanger can be improved. It is desirable that turbulence is created along the region very close to heat transfer surface. Thus reducing the pumping power required. And this can be done by keeping the height of rib element small as compared to duct dimensions. Formation of two secondary flow cells in case of V-ribs instead of one cell in case of angled rib results in better performance ofV-ribs.DiscreteV-shapedribarrangement can yield to better performance as compared to continuous rib arrangement. The most important effect of rib on flow pattern is generation of two flow separation region on each side of rib. These generated vortices are cause of turbulence as well as friction losses. Discrete ribs can create more secondary flow cell and produce more local turbulence than continuous ribs. Some of the important geometrical parameters for ribs are relative roughness pitch(P/e), relative roughness height(e/D), angle of attack(α), shape of element etc.

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AUTOMATIC PNEUMATIC BUMPER AND BREAK ACTUATION BEFORE COLLISION

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ABSTRACT :
The technology of pneumatics plays a major role in the field of automation and modern machine shops and space robots.. The aim is to design and develop a control system based intelligent electronically controlled automotive bumper activation and automatic braking system is called AUTOMATIC PNEUMATIC BUMPER AND BREAK ACTUATION BEFORE COLLISION. This project consists of IR transmitter and Receiver circuit, Control Unit, Pneumatic bumper system and pneumatic braking system. The IR sensor senses the obstacle. There is any obstacle closer to the vehicle (with in 3-4 feet), the control signal is given to the bumper activation system and also pneumatic braking system simultaneously. The pneumatic bumper and braking system is used to product the man and vehicle. This bumper and braking activation system is only activated the vehicle speed above 30-40 km per hour. This vehicle speed is sensed by the proximity sensor and this signal is given to the control unit and pneumatic bumper and braking activation system.

KEY WORDS : IR transmitter, IR sensor, bumper, and proximity sensor

1. INTRODUCTION

We have pleasure in introducing our project "AUTOMATIC PNEUMATIC BUMPER AND BREAK ACTUATION BEFORE COLLISION". Which is fully equipped by IR sensors circuit and Pneumatic bumper and braking activation circuit? It is the project which has been fully equipped and designed for auto vehicles. The technology of pneumatics plays a major role in the field of automation and modern machine shops and space robots.

The aim is to design and develop a control system based on intelligent electronically controlled automotive bumper activation system is called "automatic pneumatic bumper and break actuation before collision". The project consists of IR transmitter and Receiver circuit, Control Unit, Pneumatic bumper system. The IR sensor senses the obstacle. There is any obstacle closer to the vehicle (within 1feet), the control signal is given to the bumper and break activation system. This bumper activation system is activated when the vehicle speed above 40-50 km per hour. The speed is sensed by theproximity sensor and this signal is transfer to the control unit and pneumatic bumper activation system.

1.1 Introduction To Safety System:

The aim is to design and develop a control system based on pneumatic breaking system of an intelligent electronically controlled automotive braking system. for comparison of iterative technologies / techniques. The final phase of the new modern vehicle shall include: • Development of improved ABS control systems •Development and assessment of an electro-hydraulic- BBW (EH-BBW) system • Individual wheel braking combined with traction control •Assessing sensor failure and fault tolerant control system design • Preliminary studies into an electrically actuated system • Re-engineering using simplified models

A] Pneumatics:

The word 'pneuma' comes from Greek and means breather wind. for automation. Pneumatic systems operate on a supply of compressed air which must be made available in sufficient quantity and at a pressure to suit the capacity of the system. When the pneumatic system is being adopted for the first time, however it wills indeed the necessary to deal with the question of compressed air supply.

PRESENTED at NC-RDD-EMS-2017 on 18 /03/2017 at RAJGAD DNYANPEETH TECHNICAL CAMPUS (Degree Engineering and Polytechnic) Dhangawadi, Tal: Bhor, Dist: Pune (Maharashtra).

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This is to certify that the paper entitled Heat Transfer and materials in cooking was presented in the NATIONAL CONFERENCE ON RESEARCH, DESIGN AND DEVELOPMENT IN ENGINEERING, MANAGEMENT & SCIENCES (NC-RDD-EMS-2017) held on 18 /03/2017 at RAJGAD DNYANPEETH TECHNICAL CAMPUS (Shri Chhatrapati Shivajiraje College of Engineering) Dhangawadi,Tal: Bhor, Dist: Pune (Maharashtra).

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HEAT TRANSFER AND MATERIALS IN COOKING

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ABSTRACT:

Heat transfer is a very important aspect in the cooking process. Heating food destroys potentially harmful bacteria and other microorganisms, which makes food safe to eat and easier to digest. When food or liquids become hot, their molecules absorb energy, begin vibrating rapidly, and start to bounce off of each other. As they collide, heat energy is produced and transferred, which warms and cooks our food. Heat transfer is the process of an item or substance coming into contact with a heat source and becoming hot. In more scientific terms, heat transfer is an exchange of thermal energy between two objects. There are three methods of heat transfer namely conduction, convention and radiation. All these methods are being used in cooking methods. Taste and healthiness of the food is our prime requirement. Does mode of heat transfer affect the test and Vitamins and other contents in the food? Various cooking method and their corresponding mode of heat transfer has been discussed and investigated all aspects concerned with the topic.

KEY WORDS: Cookware, Cooking methods, heat transfer in cooking

I. Introduction:

Human prime requirement of life to survive is food and water. Without food human can't survive. From the ancient period, human has been changing his food over the period. Historically, people secured food through two methods: hunting and gathering and agriculture. Today, the majority of the food energy required by the ever increasing population of the world is supplied by the food industry. Food is any substance consumed to provide nutritional support for the body. It is usually of plant or animal origin and contains essential nutrients such as carbohydrates, fats, proteins, vitamins, or minerals. The substance is ingested by an organism and assimilated by the organism's cells to provide energy, maintain life, or stimulate growth. Food safety and food security are monitored by agencies like the International Association for Food Protection, World Resources Institute, World Food Programme, Food and Agriculture Organization, and International Food Information Council. They address issues such as sustainability, biological diversity, climate change, nutritional economics, population growth, water supply, and access to food.

The right to food is a human right derived from the International Covenant on Economic, Social and Cultural Rights (ICESCR), recognizing the "right to an adequate standard of living, including adequate food", as well as the "fundamental right to be free from hunger". Most food has its origin in plants. Some food is obtained directly from plants; but even animals that are used as food sources are raised by feeding them food derived from plants. Cereal grain is a staple food that provides more food energy worldwide than any other type of crop. Corn (maize), wheat, and rice – in all of their varieties – account for 87% of all grain production worldwide. Most of the grain that is produced worldwide is fed to livestock.

Some foods not from animal or plant sources include various edible fungi, especially mushrooms. Fungi and ambient bacteria are used in the preparation of fermented and pickled foods like leavened bread, alcoholic drinks, cheese, pickles, kombucha and yogurt. Another example is blue-green algae such as Spirulina. Inorganic substances such as salt, baking soda and cream of tartar are used to preserve or chemically alter an ingredient.

Heat transfer is an important process which is being used for cooking the food. We can't just eat raw food harvested from plant because human digestion system is not so strong to digest it so we heat to food in proper form in order to sustain its healthiness and taste called cooking. Several methods of cooking has been evolved over the time by humans. Different topographical area peoples prefer different tastes of

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This is to certify that the paper entitled A Review on heat transfer Enhancement Technics presented in the NATIONAL CONFERENCE ON RESEARCH, DESIGN AND DEVELOPMENT IN ENGINEERING, MANAGEMENT & SCIENCES (NCRDD-EMS-2017) held on 18 /03/2017 at RAJGAD DNYANPEETH TECHNICAL CAMPUS (Shri Chhatrapati Shivajiraje College of Engineering) Dhangawadi,Tal: Bhor, Dist: Pune (Maharashtra).

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Author of the paper is Prof. N. D. Bagul

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A REVIEW ON HEAT TRANSFER ENHANCEMENTTECHNICS

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ABSTRACT :
Heat transfer augmentation techniques are commonly used in areas such as heating, cooling in evaporators, process industries, thermal power plants, refrigerators, automobiles, radiators for space vehicles, air-conditioning equipment. In Passive techniques, inserts are used in the flow passage to augment the heat transfer rate are more effective as compared with active techniques, because the insert manufacturing process is simple and these techniques can be easily employed in an existing heat exchanger. In design of compact heat exchangers, passive techniques of heat transfer augmentation can play an important role if a proper passive insert configuration can be selected according to the heat exchanger working condition. The present paper is a review on progress with the heat transfer augmentation techniques in the recent past and will be useful to designers implementing passive augmentation techniques in heat exchange. Twisted tapes, wire coils, ribs, fins, dimples, etc., are the most commonly used passive heat transfer augmentation tools. The thermo hydraulic behaviour of an insert mainly depends on the flow conditions (laminar or turbulent) apart from the insert configurations.

KEY WORDS- Heat Transfer, Argumentation Techniques, Performance Evaluation Criteria

1. Introduction

The argumentation techniques used to increase heat transfer coefficient are classified as either active or passive techniques. Active techniques require an external power input to cause the increase in heat transfer coefficients passive techniques do not require a power input. It typically relies on a modification of surface or tube geometry such as by adding fins or by roughening the tube surface. The heat transfer enhancement methods are classified in the following section.

A.Classification of Various Heat Transfer Enhancement Techniques-

They are broadly classified into three different categories:

i. Passive Techniques
ii. Active Techniques
iii. Compound Techniques

i. Passive Techniques

a)Treated surfacesare heat transfer surfaces that have a fine-scale alteration to their finish or coating. The alteration could be continuous or discontinuous, where the roughness is much smaller than what affects single-phase heat transfer, and they are used primarily for boiling and condensing duties.

b)Rough surfacesare generally surface modifications that promote turbulence in the flow field, primarily in single-phase flows, and do not increase the heat transfer surface area. Their geometric features range from random sand-grain roughness to discrete three-dimensional surface protuberances.

c)Extended surfacesmore commonly referred to as finned surfaces, provide an effective heat transfer surface area enlargement. Plain fins have been used routinely in many heat exchangers. The newer developments, however, have led to modified finned surfaces that also tend to improve the heat transfer coefficients by disturbing the flow field in addition to increasing the surface area.

d)Displaced enhancement devicesare inserts that are used primarily in confined forced convection, and they improve energy transport indirectly at the heat exchange surface by "displacing" the fluid from the heated or cooled surface of the duct with bulk fluid from the core flow.

e)Swirl flow devicesproduce and superimpose swirl or secondary recirculation on the axial flow in a channel. They include helical strip or cored screw-type tube inserts, twisted ducts, and various forms of altered (tangential to axial direction) flow arrangements, and they can be used for single-phase as well as two-phase flows.

f) Coiled tubesare what the name suggests, and they lead to relatively more compact heat exchangers. The tube curvature due to coiling produces secondary flows or Dean vortices, which promote higher heat transfer coefficients in single-phase flows as well as in most regions of boiling.

g)Surface tension devicesconsist of wicking or grooved surfaces, which direct and improve the flow of liquid to boiling surfaces and from condensing surfaces.

h)Additives for liquidsinclude the addition of solid particles, soluble trace additives, and gas bubbles in single-phase flows, and trace additives, which usually depress the surface tension of the liquid, for boiling systems.

i)Additives for gasesinclude liquid droplets or solid particles, which are introduced in single-phase gas flows

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The author of the paper is Prof. N. D. Bagul

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NANOTECHNOLOGY ITS FUNDAMENTALS AND RAPID PROTOTYPE MAKING

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ABSTRACT : A basic definition of Nanotechnology is the study manipulation and manufacture of extremely minute machines or devices. These devices are so small to the point of manipulating the atoms themselves to form materials. By this Nanotechnology we can make computers billions of times more than today's and new medical capabilities that will heal and cure in cases that are now viewed as utterly hopelessly. The properties of manufactured products depend on how those atoms are arranged .If we know about exactly how many dopant atoms are in a single transistor and exactly where each individual dopant atom is located and placed roughly the right number in roughly the right place, we can make a working transistor. Another improvement in Nanotechnology is self replication.Self replication make a effective route to truly low cost manufacturing .Our intuitions about self replicating systems learned from biological systems that surround us are likely to seriously mislead us about the properties and characteristics of artificial self replicating systems designed for manufacturing purposes. Artificial systems able to make a wide range of non biological products like diamond under programmatic control are likely to be more brittle and less adaptable in their response to changes in their environment than biological systems. At the same time they should be simpler and easier to design. Thus the progress of technology around the world has already given us more precise less expensive manufacturing technologies that can make an unprecedented diversity of new products. Everything requires the computer is a major reason why people should research and develop Nanotechnology.

KEY WORDS : Nanotechnology, fundamentals of nanotechnology, basic principle of prototype making.

1. INTRODUCTION

Nanotechnology is the art and science of manipulating matter at the nanoscale. We All Should care Because it can and most likely will bring revolution in the current industrialization and manufacturing processes. The American government is investing a wholesome of around 1 trillion USD/year….in different sectors, Some of which are mentioned in this chart a big proportion of the R&D is being invested on materials and electronics field. Like as prototyping or model making is one of the important steps to finalize. It helps in conceptualization of a design. Before the start of full production prototype is usually fabricated and tested. Prototype making is the sub part of Nanotechnology.

2. HOW SMALL NANO-SCALE IS

. Its a bit difficult to realize how small the Nano-scale is. To make things easier to get, we can say that one nanometre (nm) is one billionth of a metre. Rapid prototype (RP) is additive process, unlike all other familiar workshop machine methods that cut6 away the materials until desired shape is achieved the removal of material is done in Nano-scale also.

Fig. 1 Nano-scale.

3. APPLICATIONS OF NANOTECHNOLOGY

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HYPERLOOP TECHNOLOGY THE PASSENGER TRANSPORT SYSTEM

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ABSTRACT:
Present orthodox approaches of shipping of folks reside of four unique types: rail, road, water, and air. These modes of transport tend to be either relatively slow (e.g., road and water), expensive (e.g., air), or a combination of relatively slow and expensive (i.e., rail). Hyperloop is a new mode of transport that seeks to change this paradigm by being both fast and inexpensive for people and goods. Hyperloop is also unique in that it is an open design concept, similar to Linux. Hyperloop consists of a low pressure tube with capsules that are transported at both low and high speeds throughout the length of the tube. The capsules are supported on a cushion of air, featuring pressurized air and aerodynamic lift. The capsules are accelerated via a magnetic linear accelerator affixed at various stations on the low pressure tube with rotors contained in each capsule. Passengers may enter and exit Hyperloop at stations located either at the ends of the tube, or branches along the tube length. Although Hyperloop is similar to other vacuum tube train (Vacuum Train) concepts,2 the soft vacuum represents a distinct difference. It allows the pod to run on air-bearings, thus removing the need for a magnetic levitation system used on other Vacuum Train designs. The air bearings require a source of pressurized air, which is provided by a compressor powered by on-board batteries. Since Hyperloop operates at transonic speeds and a low pressure environment, the design of the pod compression system can be likened to the compressor design for aircraft turbo machinery. Furthermore, the aerodynamic concerns arising from constricted flow through a tube are prevalent in the design of inlets and nozzles on aircraft engines and the entire system faces similar weight and volume constraints. For these reasons, the modeling approach applied here is inspired heavily by methods for aircraft sizing and turbine engine cycle analysis

KEYWORDS: Transportation, Hyperloop, Fast and Reliable, Suspension,

1. INTRODUCTION

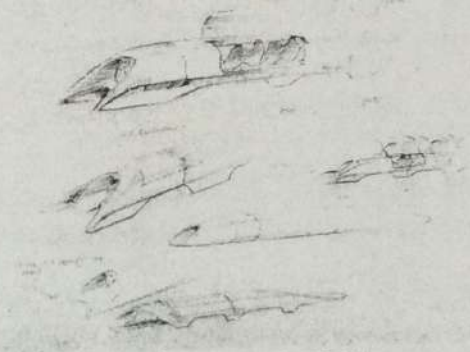

Fig. 1. Hyperloop transport concept

Two versions of the Hyperloop capsules are being considered: a passenger only version and a passenger plus vehicle version. Hyperloop Passenger Capsule Assuming an average departure time of 2 minutes between capsules, a minimum of 28 passengers per capsule are required to meet 840 passengers per hour. It is possible to further increase the Hyperloop capacity by reducing the time between departures. The current baseline requires up to 40 capsules in activity during rush hour, 6 of which are at the terminals for loading and unloading of the passengers in approximately 5 minutes.

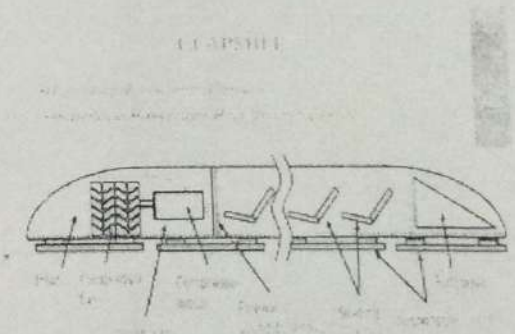

Fig 2. Hyperloop Passenger Plus Vehicle Capsule

The passenger plus vehicle version of the Hyperloop will depart as often as the passenger only version, but will accommodate 3 vehicles in addition to the passengers. All subsystems discussed in the following

Criteria 3: Research, Innovations and Extension

Key Indicator – 3.3 Research Publications and Awards

3.3.5 Number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings per teacher during the last five years (8)

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This is to certify that Prof./Dr./Mr./Mrs./Ms. R. S. Lavate, Shantiniketan Polytecnic, Sangli has participated as ~~Resource Person~~ / ~~Expert~~ / ~~Reviewer~~ / ~~Committee Member~~ / Delegate and presented the paper titled Effect of Mass flow rate and Reynolds Number on Heat transfer and Pressure drop in Micro-Fin Tubes with Coil Wire Inserts in A National Conference on **'Recent Trends In Energy Engineering'** held on 9th October, 2015, organized by **Department of Mechanical Engineering, P.V.P.I.T., Budhgaon** and sponsored by **Maharashtra Energy Development Agency (MEDA), Pune**

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Study Of Advanced Braking System

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Abstract-

The brake booster is designed to create a greater braking force from a minimum pedal ,effort, using a difference in atmospheric pressure and the engine's manifold vacuum. When pressure is applied to the brake pedal, pressure is exerted on the booster air valve. With pressure created by the booster the master cylinder is applied. Vacuum brakes are first used in place of the air brake in railway locomotives. This braking system uses a vacuum pump for creating vacuum in the brake pipe. The integral construction of the brake cylinder uses this vacuum reservoir for the application of brakes. Nowadays most of the light vehicles are fitted with vacuum-assisted hydraulic braking system where vacuum is created from the engine which reduces the driver effort on foot pedal. The system operation is somehow similar to air braking system. The main difference with air brake system is that vacuum is used instead of compressed air. Now a day's accidents are increasing more and more , so safety has acquired a priority. Improper usage of brakes is also one of the problems for accident. The project idea is to improve the safety parameters regarding to brakes. At present time the problems of enhancing safety and finding new energy sources are very actual for the world automotive industry. The developments in the field of brake design are dominant from the viewpoint of this aspect.

Key words-

Air braking system, Hydraulic brake, Vacuum braking system

I. Introduction

The basic principle of the brake booster is pressure differential. The brake booster consists of the body, booster piston, piston return spring, reaction mechanism, and control valve mechanism. The body is divided into a constant pressure chamber and a variable pressure chamber. The chambers are separated from each other by a diaphragm. The control valve mechanism regulates the pressure inside the variable pressure chamber.

a) Control valve closed/open:

When vacuum is applied to both sides of the piston, the piston is pushed to the right by the spring and remains there. When atmospheric air is allowed into chamber B the piston starts to compress the spring, due to the difference in pressure, and moves to the left. This causes the piston rod to move the piston of the master cylinder, generating hydraulic pressure as shown in figure 1.

b) Booster Air Valve Operation:

In the OFF position, the Air Valve (connected to the Valve Operating Rod) is pulled to the right by the Air Valve

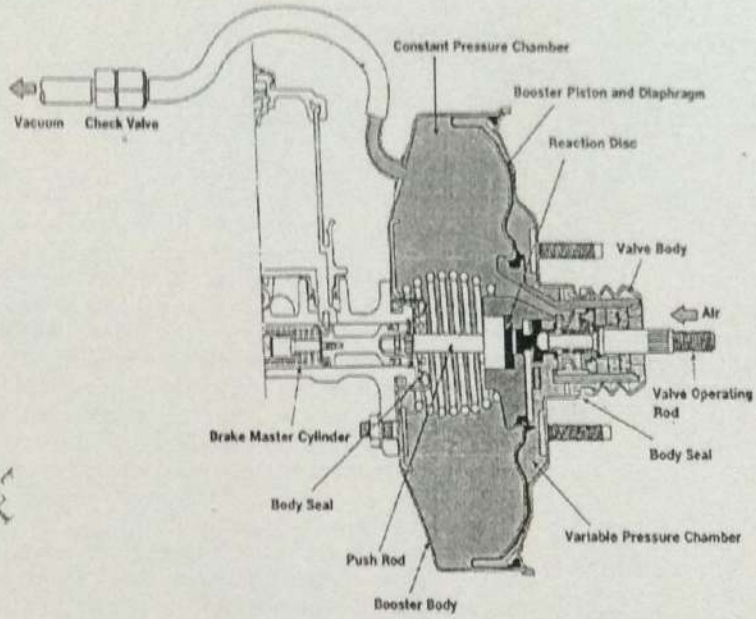

Fig. 1 Brake Booster

Return Spring. The Control Valve is pushed to the left by the Control Valve Spring. This causes the Air Valve to contact the Control Valve. Therefore, the atmospheric air that passes through the air cleaner element is prevented from entering the Variable Pressure Chamber. The piston's Vacuum Valve is separated from the Control Valve in this position, providing an opening between passage A and passage B. Since there is always vacuum in the Constant Pressure Chamber, the opening allows vacuum into the Variable Pressure Chamber. As a result, the piston is pushed to the right by the piston return spring.

In the ON position, when the brake pedal is depressed, the Valve Operating Rod pushes the Air Valve to the left. The Control Valve which is pushed against the Air Valve by the Control Valve Spring, moves to the left until it touches the Vacuum Valve.This blocks off the opening between passage A and passage B (Constant Pressure Chamber (A) and Variable Pressure Chamber (B)). As the Air Valve Pmoves further to the left, it moves away from the Control Valve. This allows atmospheric pressure to enter the Variable Pressure Chamber through passage B. The pressure difference between the Constant Pressure Chamber and the Variable Pressure Chamber causes the piston to move to the

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Design and Analysis of Drive Train Worm andWorm Wheel for Bi-Axial Tensile Testing Machine

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Abstract: For the power transmission different types of gear drives are used according to the position of axes of two shafts between which motion is to be transmitted.In this paper drive train worm and worm wheel are designed and developed for ial tensile testing machine.Worm and worm wheel are used as they provide smooth and silent operation alongwith high reduction ratio. The theoretical analysis is done by using Lewis Strength equationand the empirical correlations. The worm and worm wheel are modeled in 3-d using Unigraphix software followed by FE analysis in ANSYS workbench 14.5. The theoretical results are compared with analytical results. We found that the stresses occurred in the worm pair drive are in the given limit.

Key Words: Unigraphix, structural analysis, ANSYS

I. INTRODUCTION

Laminated structures are widely used for different applications like aerospace, automobile, medical, civil, and mechanical engineering because of their easy handling, improved mechanical properties and low fabrication cost .During these structures are subjected to different types of loads in one or more direction in cycles or as intermittent load due to which failure occurs. Thus it is important to study the failure of such components subjected to bi-axial loading. To accomplish this biaxial tensile test machine is designed & developed & is used to apply uni-axial as well bi-axial loads to laminated plates. The same machine can be employed for different purposes. It can be used to perform compression and tensile tests which determines mechanical properties for different materials.

The worm gear drive is the main driving set. It consists of worm and worm wheel rotating w.r.t each other. The axes of the worm drive are perpendicular to each other. The worm gear drive is the mostly used drive where high reduction ratio and multiplication of torque is required.

The machine have different elements like an electric motor, geardrive, reduction drive, crown bevel gear & pinions and power screws with specimen holders. The electric motor drives the drive train worm and worm wheel via spur gear pair. The crown bevel gear is the central gear that is mounted on the worm gear shaft. This crown rotates the four bevel pinions simultaneously. This rotation provides load required for experimentation work.

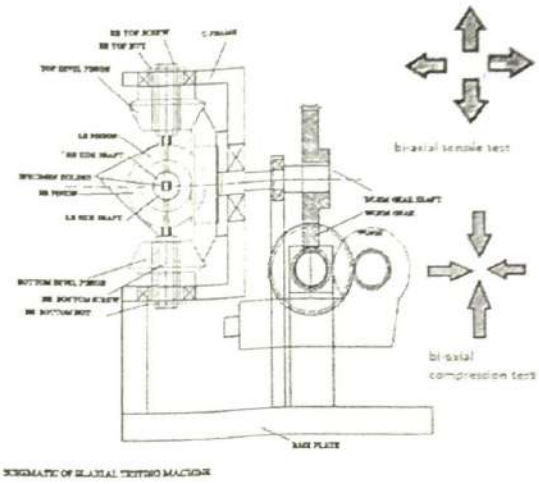

Fig -1: Biaxial tensile testing machine

II. WORKING METHODOLOGIES

The analysis work will be performed by using following methodologies.

1. Theoretical Analysis:

This includes theoretical calculations of all machine components i.e. calculations of forces and bending strength using Lewis equation.

2. FE Analysis:

The Finite Element Analysis is the powerful tool employed to evaluate the stresses of the elements. In this paper, the FE analysis will be done with the help of ANSYS software. The procedure includes-

1. Modeling of worm& worm wheel is done by using suitable Unigraphics software using gear parameters.
2. Selection of proper element for meshing.
3. Specifying required material properties like modulus of elasticity, rigidity, poissions ratio, etc.
4. Applying boundary conditions and constraints.
5. Carrying out the Post Process in ANSYS to solve the problem.

III.THEORETICAL ANALYSIS

A.Design of Gear Motor to Worm Shaft

Power = 80 watt

Speed = 55 rpm

b = 10 m

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Small Capacity Windmill Opportunities in India

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Abstract -Wind energy based decentralized power generation implies power generation at islands, remote villages or hilly regions either by standalone wind energy systems or by wind-diesel-solar hybrid systems that are not connected to common grid. There is an imperative need to review the past and discuss the present situation in this upcoming field. This paper reviews the research and development in decentralized power generation by using small capacity windmill. Considering the electricity requirement of an institute, small capacity wind turbine is selected Small wind turbine technology opportunities and barriers have been investigated.Wind energy based decentralized power generation that reduces transmission and distribution losses and restricts grid expansion.

Keyword:Smallcapacitywindmill, decentralized Energy

I. INTRODUCTION

Wind energy is one of the most widely used renewable energy resource. Wind powered electricity is the clean and green power generation method. Particularly, in developing countries like India, there is need to have decentralized type of energy source because large part of the population lives in villages and farms. The most potential application of wind energy is in remote, windy places which have weak Decentralized Power Generation System (DPGS).

Small wind turbines have less generating capacity than the huge commercial turbines found on wind farms, b u t their reduced costs and added versatility allow wind power to be used in a wider set of applications . These small turbines are used primarily f o r distributed generation generating electricity for use onsite, rather than transmitting energy over the electric grid from central power plants or wind farms. Small turbines are a s m a l l scale alternative to solar panels, providing clean renewable energy to rural homes, farms and businesses. This reduces reliance on large fossil fuel power plants and lowers the burden on the electrical transmission grid. Small wind turbines can have a generating capacity of anywhere from 0.3 to 100 kW, though the amount of power they actually generate depends on wind speed. A small turbine will typically need wind speeds of four meters per second (or nine miles per hour) at the height of the turbine. Because steady wind speed is important, small turbines must be placed away from buildings, trees, and other obstructions that may block the flow of wind. This makes them ideal for rural and suburban communities that do not have the space restrictions found in urban centers.

The United States is the global leader in small turbine manufacturing. Domestic manufacturers reported sales of $115 million in 2011, with 54 percent of that revenue coming from exports. The industry represents an estimated 1,600 full time jobs in the United States. In 2010, the U.S. small wind cumulative capacity was 179 MW, making the United States the world leader in installed capacity , as well Despite the growing market and robust sales, the small wind industry relies on state and federal policies to drive investment in small wind and to provide certainty for turbine manufacturers.

II NEED TO HAVE DECENTRALISED ENERGY

The electric power becomes now prime need of mankind. Power is generated by thermal energy, hydraulic energy, wind energy and solar energy.There is an option of nuclear energy also that could be used to generate power. Due to safety and other issues, it has been little bit avoided. Nuclear energy can be the great source of power generation if it could be possible in safe.

Government and companies are generating power at setting up plants and supplying electricity to the people with the grid extension. But what if the grids

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CONVERSION OF DIESEL ENGINE TO DUAL FUEL MODE USING BIOGAS

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Abstract- The alternative fuels implemented in internal combustion engines are becoming the subjects of interest nowadays. It describes a production of biogas from cow dung, diesel engine conversion process with engine modification of 5 hp diesel engine. To produce biogas, the usual practice is to mix water with some organic material, such as cow dung (a free source of the appropriate micro-organisms). The slurry is placed in a leak-proof container (called a digester) and leaves it to ferment. After several days at suitable temperature, sufficient methane will have formed to make a combustible gas. Fix dome type of biogas plant is chosen in this gas production for cost saving and to produce sufficient gas at lower temperature. In this test, we have use the 5 hp diesel engine for conversion in dual fuel mode instead of spark ignition engine as100% biogas or CI engine for 100% biogas engine for conferrable, efficient and low cost power generation. In this paper included everything right from biogas production, types of conversions, efficient power output conversion method; also include 3D designs, AutoCAD designs. I have highlighted the advantages, disadvantages and various possible applications related diesel engine conversion to dual fuel mode. The application of this engine is mainly in rural area to generate electricity at low cost.

Keywords: Biogas, Brake Specific Fuel Consumption, Internal Combustion Engine.

I. NTRODUCTION

A. Background:

In a developing country, energy is an essential factor of production. It grows by a factor greater than of gross domestic product. The main source of energy for the rural people, who constitute the majority of the population of the country, is biogas fuel like fire-wood, agricultural residues and cattle dung.

The technologies used for the conversion of organic materials to biogas have been in existence for many years in both the developed and developing countries, the gas being used either for direct combustion in cooking, lighting or indirectly to fuel combustion engines delivering electrical of motive power. A biogas mainly consists of methane and carbon dioxide liberated from degraded organic wastes fermented by methanogenic bacteria in anaerobic condition. This process can be used to the great benefit of the rural community for a number of reasons. First, it produces a smoke-free fuel. Secondly, it produces an excellent fertilizer. Thirdly, it destroys most of the disease-carrying pathogens and pathogens and parasites. Fourthly, the biogas technology is appropriate to rural conditions as comparatively sophisticated devices and highly qualified expertise are not involved.

Many countries became aware of biogas technology by the middle of the twentieth century, International organizations like the food and Agriculture Organization of the United Nation (FAO), the United Nations Industrial Development Organization (UNIDO), etc have done considered work in disseminating and developing biogas technology. Three countries have installed a large number of units. In numerical order these are: China (7.8 million digesters), India (100,000), and South Korea (29,000).

B. Present Work:

Engine Data:

Using all collected idea to electricity generation in I.C. engine in two methods.

1) S.I. engine:

In this method the diesel engine is totally converted into biogas engine. For this, conversion of engine to recommend some changes:

i) Removing fuel injection pump, fuel lines and injector.

ii) Modification of cylinder head for injection of spark plug in the injector hole.

iii) Mounting of ignition system.

iv) Installation of gas carburetor.

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Current trends in applications of smart materials –an overview

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Abstract

Sensing and actuating is part of our life to react with surroundings. Thus with development of technology it becomes answerable to ask a question as if we design equivalent mechanisms that can logically interrelate with their environment and structures that can be used on field applications. Such smart structures could have a marvelous impact in progressing towards many fields including drug, microelectronics, and robotics. Especially among others for out of track approach smart materials are a wide group of materials that can be employed. The common characteristic of all of them is the fact that one or more properties can be changed purposefully under controlled condition. In this smart materials era we come across the materials that receive, broadcast, or process a stimulus and respond by producing a useful effect that may include a signal that actuates materials. At earlier stages, smart materials were defined as the materials, which respond to its environments in a time domain. This study focuses on an overview of introduction to smart materials and their classifications. Also different applications of smart materials in current fields are also being summarized from engineering point of view.

Keywords: Smart Materials, Actuators, Piezoelectric, External Stimuli

I.INTRODUCTION

With the improvement of material science, high caliber and cost-productive materials have come into utilization in different field of uses. In past decades, the materials got to be multifunctional and from their particular properties zone of utilization is more widened. With the last development, the idea of composite materials came into picture and as of late, the following transformative step is anticipated with the idea of shrewd materials. Smart materials are new era materials beating the routine basic and utilitarian materials. These materials hold adaptivity to outer sign, for example, loads with characteristic knowledge. They have the ability to alter their physical properties in a specific way because of particular boost information.

These data jolts could be weight, temperature, electric and attractive fields, chemicals, hydrostatic weight or atomic radiation. The relative variable properties may be shape, firmness, consistency or damping. Regularly, straightforward gadgets produced using a solitary sensing or actuating material are used in certain applications. However, systems that involve both sensing and actuating materials can be used to build more sophisticated applications. Such systems are referred to as smart

structures, which incorporate sensors and actuators with processing/control units connecting them. To get an idea of how smart structures can be implemented, it is necessary to understand the fundamental components of these structures: sensor and actuator materials. For centuries, materials have been known to react to the surrounding environment producing some form of response. For instance, in 1824, Rochelle salt was discovered to become electrically polarized by the application of heat. That was the first discovery of the effect known as pyroelectricity. Since that time, numerous additional materials have been discovered having the inherent capability to convert one form of energy into another. Sensors are materials that respond to a physical stimulus, such as a change in temperature, pressure, or illumination, and transmit a resulting signal for monitoring or operating a control. Actuators are materials that respond to a stimulus in the form of a mechanical property change such as a dimensional or a viscosity change. By controlling operating properties, smart materials can detect flows and discontinuities and hence can be used as a diagnostic tool. Table 2.1 lists the sensor/actuator material classes that will be discussed in this Material EASE along with their associated energy stimulus and response forms.

II.CLASSIFICATION

Smart materials can likewise be characterized into two classifications as active and passive. Fairweather (1998) termed a smart materials as materials which display the ability to modify their geometric or material properties with the utilization of electric, warm or attractive fields, in this way having a basic ability to transduce vitality. Piezoelectric materials, SMAs, ER liquids and magnetostrictive materials are inclined to be the smart materials and consequently they are appropriate as actuators and power transducers. Kumar (1991) demonstrated that SMA has huge recuperation power, of the request of 700 MPa (105 PSI), which can be additionally executed for activation reason. At the same time piezoelectric materials are additionally

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BIOMIMICRY: AN INSPIRATION FROM NATURE

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ABSTRACT : Capitalizing on the emergent movement towards integrating transdisciplinary with biomimicry, this paper provides an overview of the biomimicry approach, including discussion of its three basic dimensions: (a) Nine principles of life (b) Nature as model, measure and mentor and (c) The Design Spiral methodology. If the intent of transdisciplinarily is to understand the world in all its complexities, and the world includes humans, non- humans and nature, then it makes sense to gain insights from non-humans (other species) and nature, the intent of biomimicry. In the search of sustainable building design and technology Biomimicry is an alternative solution. The inspiration from nature is driving force in architecture, resulting in majestic works of architecture. Biomimicry is about solution refined and developed by nature. For any sustainable building design, need to consider structural efficiency, water efficiency, zero-waste systems, thermal environment, and energy supply. Biological organisms refined and developed by natural selection over a billion year research and development period can be seen as embodying technologies, functions, and systems that are solutions to the problem of surviving in nature. These problems are often equivalent to those encountered by humans as we seek new ways to design and live sustainably, and in many cases have solved the same problems with a far greater economy of means. This paper aims at revealing how radical increase in resource efficiency can be achieved by looking to the nature for inspiration. Exploring the application of Biomimicry in current architectural design, resulting in a set of design approaches, levels and principles. The paper also discuss about the architects work inspired by nature. As a supposedly novel technical practice, biomimicry makes promises about solving the world's technological problems and environmental problems simultaneously. After posing questions about the features, assumptions and ambitions of biomimicry, it is concluded that biomimicry might be a productive way to render nature's secrets available for commercial and industrial purposes, but for it to move society towards eco-friendliness as its supporters often claim, they will have to actively reconstruct the concept with the help from eccentric ideas.

Keywords: biomimicry, complexity, design, spiral, transdisciplinarity.

I. INTRODUCTION

Studying nature to get ideas to solve transdisciplinary problems has recently received new attention from the field of biomimicry. An intriguing discussion has emerged in the literature during the last five years about transdisciplinary and biomimicry. Those engaged in this intellectual discourse argue that humanity is encountering powerful new insights from the foundations of transdisciplinary quantum physics, chaos theory, complexity theory and living systems ecosystems theory. They further suggest that those engaged in transdisciplinary work can benefit from employing the principles of biomimicry (and vice versa), they maintain that sustainable products, processes, services and institutions are needed as catalysts to the transition towards a sustainable human civilization. They believe that solutions to the world's problems require the transdisciplinary integration of multiple perspectives and Knowledge bases, augmented with insights from biomimicry. If the intent of transdisciplinarily is to understand the world in all its complexities, and the world includes humans, non-humans and nature, then it makes sense to gain insights from non-humans (other species) and nature, the intent of biomimicry. Madni, when discussing Daimler Chrysler's transdisciplinary application of biomimicry principles to design a concept car, observed that "humans have much to learn from Mother Nature". Transdisciplinary rise from the increasing demand for relevance and applicability of academic research and non-academic knowledge to social challenges. Biomimicry arose from the increasing demand for deeper innovations and inspirations. It has witnessed explosive growth as a new concept. This paper provides an overview of biomimicry, anticipating insights for future conversations about the synergy between transdisciplinary as a methodology and biomimicry as an approach to solving problems. Biomimicry claims that the laws of nature can be applied to modeling social systems, that we can adopt natural laws and logics to human needs. Jucevicius observes that analogical thinking (transferring ideas from one context to another) is at the heart of creative solutions to complex human problems. Successful biomimicry thinkers are in-Biomimicry from bios, meaning life, and mimesis, meaning to imitate is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. Studying a leaf to invent a better solar cell is an example, it as "innovation inspired by nature." The core idea is that nature, imaginative by necessity, has already solved many of the problems grappling with. Animals, plants, and microbes are the consummate engineers. They have found what works, what is appropriate, and most important, what lasts here on Earth. This is the real news of Biomimicry, After 3.8 billion years of research and development, failures are fossils, and what surrounds us is the secret to survival. Biomimicry is a new science that studies nature's models and then emulates these forms, process, systems, and strategies to solve human problems sustainably. Biomimicry uses an ecological standard to judge the sustainability of our innovations. After many years of evolution, nature has learned what works and what lasts. Biomimicry is a new way of viewing and valuing nature. It introduces an era based not on what we can extract from the natural world, but what we can learn from it.

A.Biomimicry: Explained

The term biomimicry is from Greek bios, life and mimesis,

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This is to certify that the paper entitled Trends in Deburring Process : Dry Ice Blasting was presented in the NATIONAL CONFERENCE ON RESEARCH, DESIGN AND DEVELOPMENT IN ENGINEERING, MANAGEMENT & SCIENCES (NC-RDD-EMS-2016) held on 20 /03/2016 at RAJGAD DNYANPEETH TECHNICAL CAMPUS (Degree Engineering and Polytechnic) Dhangawadi, Tal: Bhor, Dist: Pune (Maharashtra).

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The author of the paper is Omkar Rajendra Girame

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Trends in Deburring Process: Dry Ice Blasting

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Abstract—Today, CO_2/dry ice blasting is being effectively used in a wide array of applications from heavy slag removal to delicate semiconductor and circuit board cleaning. Imagine a process that can be used on-line without damaging equipment or requiring a machine "teardown". Unlike conventional toxic chemicals, high-pressure water blasting and abrasive grit blasting, CO_2/dry ice blasting uses dry ice particles in a high velocity air flow to remove contaminates from surfaces without the added costs and inconvenience of secondary waste treatment and disposal. In this I want to discuss how this dry ice blasting is a best cleaning method.

Keywords—Blasting, Dry Ice(CO_2), Pelletization Process

I. INTRODUCTION

It is simple to operate with the driver parking and leaving the vehicle in the system at the ground level. Once the driver leaves the incorporated safety zone the vehicle is automatically parked by the system rotating to lift the parked car away from the bottom central position. This leaves an empty parking space available at the ground level for the next car to be parked on. The parked car is easily retrieved by pushing the button for the relevant position number the car is parked on. This causes the required car to rotate down to ground level ready for the driver to enter the safety zone and reverse the car out of the system. Except vertical car parking system all other systems use a large ground area, vertical car parking system is developed to utilize maximum vertical area in the available minimum ground area. It is quite successful when installed in busy areas which are well established and are suffering with shortage of area for parking. Dry ice is the solid form of Carbon-Dioxide (CO_2), which is a colourless, tasteless, odourless gas found naturally in our atmosphere. Though it is present in relatively small quantities (about 0.03% by volume), it is one of the most important gases we know of.

CO_2 is a natural media that serves many life sustaining purposes. It is a key element in the carbon cycle; it is the only source of carbon for the carbohydrates produced by agriculture; it stimulates plant growth; and it helps to moderate the temperature of the earth overall. With a low temperature of -780C, solid CO_2 has an inherent thermal energy ready to be tapped. At atmospheric pressure, dry ice sublimates directly to vapor without going through a liquid phase. This unique property means that, the blast media simply disappears, leaving only the original contaminant to be disposed.

Cold jet blasting uses compressed air to accelerate frozen carbon CO_2, "Dry Ice" pellets to a high velocity. A compressed air supply of 80 psi/ 5.5 bars can be used in this process. Dry ice pellets can be made on site or supplied. The grade of CO_2 used in dry ice blasting is the same as that used in the food and beverage industry. CO_2 is a non-poisonous, liquefied gas that is both inexpensive and easily stored at work sites. Of equal importance is its non-conductive and non-flammable nature. CO_2 is a natural by-product of several industrial manufacturing processes such as fermentation and petro-chemical refining. The CO_2 given off by the above production processes is captured and stored without losses until needed. When the CO_2 is returned to the atmosphere during the blasting process, no new CO_2 is produced. Instead, only the original CO_2 by-product is released.

II. BLASTING IN GENERAL

Blasting refers to a high-speed impact of a projectile on a target. The projectile can be either discrete, as in solid media blasting, or continuous, as in water blasting. A simple impact phenomenon involves two bodies. The projectile normally called the blast media can be spherical or angular, large or small, hard or soft, solid or liquid and projected at a variety of speed and angle towards the target. In general the user has no choice in terms of nature of target the user's choice is in the media property and condition of blasting.

A. Abrasive Blasting:

In applications where erosion is to be controlled, solid media of low abrasivity such as plastic media, starch media, glass beads, etc. are used. One aspect of solid media blasting is the generation of dust and secondary solid waste from spent media. Therefore, abrasive blasting is not a cleaning process.

B. Water Blasting:

Water Blasting is non-abrasive therefore its applications relate mainly to cleaning. Although at very high pressures, water is used for cutting as in water jetting. For effective cleaning, normally detergents or other cleaning chemicals are added to the water. In many applications the water is recycled, thereby requiring water treatment as additional process and cost. Generally water blast uses a large volume of water, in the range of 1000-2500 Liters per hour. The treatment cost for such a high volume can be considerable.

C. Ice Blasting:

Ice blast is a cleaning technology which is essentially a hybrid between abrasive (i.e. sand) and non-abrasive (i.e. water) types. Because ice is a phase change material, it

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STRESSCONCENTRATRION ANALYSIS OF COMPOSITE PLATE WITH CIRCULAR HOLE

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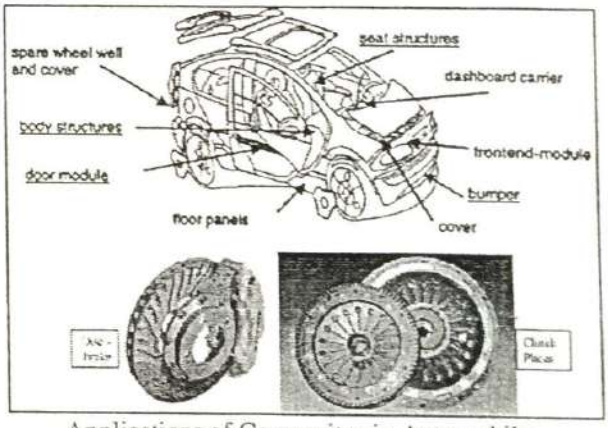
Abstract- Composite materials are having an extensive variety of uses instructural design, especially for lightweight structure that have stringent stiffness and strength requirements. They are attractive replacement for metallic materials for many structural applications. By finding efficient composite structure design that meets all requirements of specific application. This is achieved by tailoring of material properties through selective choice of orientation, no. of stacking sequence of layers that make up composite material.
Composites are used more and more often for load carrying and safety structures in all kind of applications foe aviation and space technology, for vehicles etc.Composite materials have been introduced progressively in automobiles, following polymer materials, a few of which have been used as matrices. It is interesting to examine the relative masses of different materials which are used in the construction of automobiles. Even though the relative mass of polymer-based materials appears low, one needs to take into account that the specific mass of steel is about 4 times greater than that of polymers. This explains the higher percentage in terms of volume for the polymers.

Key Words – Composite, Composites Application, FEA, Stress Concentration

I. INTRODUCTION

Composite materials are ordinarily utilized as a part of structures that request an abnormal state of mechanical execution. Their high quality to weight and solidness to weight proportion have encouraged the advancement of lighter structures, which regularly supplant traditional metal structures as appeared in fig. Due to structural requirements, these applications require joining composites either to composites or to metals. Also, for the convenience in manufacture or transportation and limitations on material size, it is rarely possible to produce a construction without joints. All connections or joints are potentially the weakest points in the structures so can determine its structural efficiency. Although leading to a weight penalty due to mechanical fasteners, these are widely used in industry. In which stress concentration is created by drilling a hole in the Unavoidable Actually mechanically secured joints, (for example, stuck joints) are unavoidable in complex structures in light of their ease, effortlessness for collect and assistance of dismantling for repair. In this manner joint proficiency has been a noteworthy worry in utilizing overlaid composite materials. Relative wastefulness and low joint quality have restricted far reaching use of composites. The requirement for tough and solid composite joint is even dire for essential auxiliary individuals made of overlays. In light of the anisotropic and heterogeneous nature, the joint issue in composites is more hard to investigate than the case with isotropic materials.



Applications of Composites in Automobile

Mechanical fasteners remain the primary means of load transfer between structural components made of composite laminates. As, in case of incremental effectiveness of the structure, the functional load persist to increase, the load carried by each fastener increases consequently. This increases probability of failure. Therefore, the assessment of the stresses around the fasteners holes becomes critical for damage design. The correct prediction of the stress distribution along the hole edge is essential for authentic strength valuation and failure prediction. An unskillful design of joints in the case of mechanical fasteners often causes a reduction of load

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Generation of Electricity using Running Tap

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Abstract:Now day's electricity is one of part of human being. Without it human beings not survive. From day start to finish man uses no. of machines in that number of machines runs with the help of electricity. We have to develop electricity with the help of any source from any application for getting more electricity.

There is one of best application from which we can develop electricity is water running tap. In one day every human uses water for many purposes from water tap. With the help of K.E. available in running water from tap we can manufacture small amount of electricity by converting kinetic energy of water into rical energy with the help of generator.

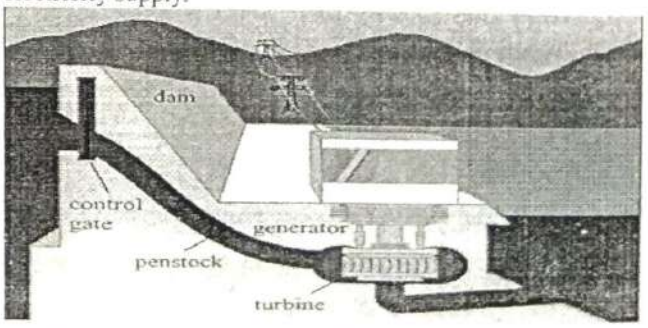
doing this here we have design and manufacture a small hydro power unit and done successful trial on that model. And this model is totally pollution free and does not required any extra source of generating energy. This model can be fitted any were where water flowing tap is available. Generated electricity is utilized for charging invertor.

Keywords: Turbine, D. C. motor.

1.INTRODUCTION

Hydropower is energy from water sources such as the ocean, rivers and waterfalls. "Mini-hydro" means which can apply to sites ranging from a tiny scheme to electrify a single home to a few hundred kilowatts for selling into the National Grid. Small-scale hydropower is one of the most cost-effective and reliable energy technologies to be considered for providing clean electricity generation. The key advantages of small hydro are high efficiency (70 - 90%), by far the best of all energy technologies, high capacity factor (typically >50%),high level of predictability, varying with annual rainfall patterns, Slow rate of change; the output power varies only gradually from day to day (not from minute to minute), a good correlation with demand i.e. output is maximum in ter, It is a long-lasting and robust technology; systems can readily be engineered to last for 50 years or more. It is also environmentally benign. Small hydro is in most cases "run-of-river"; in other words any dam or barrage is quite small, usually just a weir, and little or no water is stored. Therefore run-of-river installations do not have the same kinds of adverse effect on the local environment as large-scale hydro.

We are surrounded by hundreds of appliances that use electricity to do work. But what is electricity? Basically, electricity is a flow of electrons in a metal wire, or some other conductor. Electrons are tiny particles found inside atoms, one of the basic building blocks of all matter. We call the flow of electrons through any conductor a "current of electricity."Each electron carries a tiny negative charge. When electrons move through a conductor, they produce an invisible field of magnetic force, similar to that found around a magnet. The strength of that field depends on how many electrons are in motion. We can concentrate this field by winding the wire in which the electrons move into a tight coil with many turns. This causes many more electrons to be in motion in a small space, resulting in a stronger field. If we then place a piece of iron in the middle of the coil, the electromagnetic field will turn the iron intoa powerful magnet. While it is true that electrons moving through a conductor produce a magnetic field, the reverse is also true. You can make electrons move in a wire by "pushing" them with a moving magnet, which is how an electrical generator works. Electrical generators usually contain powerful magnets that rotate very close to dense coils of insulated wire. The coils develop a flow of electrons that becomes an electrical current when the generator is connected to an electric circuit. We will be building an electrical generator as part of this project. It uses moving magnets to create a current of electricity in coils of wire. This generator is technically called an alternator because the electrons move back and forth in the wire, rather than flowing in just one direction as they do from a battery. Ammeter connected to the wire would show that the charge of the wire switches or alternates between positive and negative as the electrons change directions. Such an electrical current is called alternating current or AC. Household electrical current is alternating current. Appliances have to be specially designed to use it. The other type of current is called direct current, because the electrons move in one direction only. Most battery-powered appliances such as calculators and portable CD players use direct current.A low head water turbine has been used as a source of power generation where construction of a dam for the head is not required. It works on natural flow of water to generate a specific power output. The power is however limited by flow of water which is sufficient to keep generate a suitable number of revolutions per minutes for the blades. Present work is aimed to design and manufacture a low head turbine which could produce sufficient power to light a couple of energy saver that can suffice the lighting requirements of far flung villagers and dwellers having access to natural streams of water but no electricity supply.



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PRODUCTIVITY IMPROVEMENT TECHNIQUES

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Abstract: The objective of this research is to improve productivity of an industry or organization. This research focused on the company, which produce different components by various processes. This research used different steps or tools which needed for productivity improvement are Management commitment, Training and empowerment, Work Study, Times and methods study, Measuring performance, Line Balancing, Quality, Better equipment. Effective material handling system to reduce the time required to material movement within plant. Objectives towards accomplished this study is to identify problems in the industry and improved it in terms of reduction in production time, quality of products, work methods, number of manual process and back flow of materials.

I-INTRODUCTION

Productivity improvement is to do the right things better and make it a part of continuous process. Therefore it is important to adopt efficient productivity improvement technique so as to ensure individuals and organization's growth in productivity. Productivity is a measure of the rate at which outputs produced per unit of input. It is calculated as the ratio of the amount of outputs produced to the amount of inputs used. Productivity measures are used at the level of firms, industries.

Productivity can be expressed as a physical measure (for example, number of parts produced per employee), a monetary measure (for example, thousands of rupees of output per hour worked), In principle, inputs can be broadly defined to cover people's time, their skills, land, raw materials, machinery and equipment, energy (for example, electricity) and so on. But, commonly, inputs are defined in terms of:

1) labour
2) Capital

Productivity is an ability to produce a good. More specifically, productivity is the measure of how efficiently resources are managed to complete objectives as stated in terms of quantity. Productivity is useful as a relative measure of actual output of production compared to the actual input of resources, measured across time or against common entities. As output increases for a given input an increase in productivity occurs. As we all know that all the company always want to improve their productivity continually by solving the highly occurred problem which directly affect to the productivity. So company wants to produce more output by effectively utilizing the available resources and company's owner want to same. Biggest problem which are associated such as, lack of delivery on time, back flow of material, material handling problem, ergonomics, storage problem , ineffective layout, etc.

A. OBJECTIVES

The main objectives of productivity improvement are as follow

1. To achieve high productivity by effective utilization of resources.
2. Reduce of back flow of material.
3. Avoiding delay in delivery time.
4. Minimize processing time
5. Elimination of waste of and materials.
6. Better control on processes

II.LITERATURE REVIEW

Heijunk a focuses on achieving consistent levels of production. It is defined as „distributing the production of different [body types] over the course of a day " It incorporates the principles of line balancing by attempting to equate workloads, leveling demand out by creating an inventory buffer and replenishing that buffer. It believes in providing even work load for all employees. According to Prof. DR S.M. sane, shewale, Manmath S. shete promod p, they are working on "Improvement in plant layout using systematic layout planning for increased productivity". In them research, amount of equipments and tools in compressor production are studied. The detailed study of the plant layout such as operation process chart, flow of material and activity relationship chart has been investigated. The new plant layout has been

Designed and compared with the present plant layout. The SLP method showed that new plant layout significantly decrease the distance of material flow from stores until dispatch. The research describes original plant layout & proposed new plant lay out. By this it was found that there was more time required during manufacturing. According to these, the researchers would like to analyze the methods to

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A REVIEW ON HEAT TRANSFER ENHANCEMENT USING NANO FLUIDS

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Abstract -

To increase Heat transfer rate is considered as critical aspect for the design of rapid heating and cooling environment. The convective heat transfer can be increased passively by changing the flow geometry, boundary conditions, or by enhancing the thermal conductivity of the fluid. Researchers try to increase the heat transfer rate by increasing the thermal conductivity of the fluid. The thermal conductivity of the fluid can be boosted by the use of nano-powder in the base fluid. Nanofluids cause drastic change in properties of the base fluid. Nanofluids are termed as the next generation heat transfer elements. The mass concentration of nanoparticles is proportional to the rate of heat transfer within critical limit. The mass concentration of the powder, Reynolds number and size of the particles are the basic parameters controlling the heat transfer of the fluid. A nanofluid is a suspension of nano sized particles made up of metal, carbides or oxides of size up to 100 nm in a base fluid of water, oil or ethylene glycol. Recently large numbers of experiments have been are carried out to evaluate the effect of nanofluid in enhancement of the heat transfer rate in various heat exchangers. The increase in the Peclet number and Nusselt results in the increase in the heat transfer coefficient of the fluid which increase the heat transfer rate.

Key Words- Nanofluids, Nanofluid applications, Heat transfer enhancement, Thermal Conductivity

I. INTRODUCTION

Various types of industries employ different types of heat exchangers to exchange the heat between cold and hold stream and modify them time to time to optimize the heat transfer rate. The augmentation in heat transfer rate is possible to achieve by two steps by optimizing the design of the heat exchanger and by optimizing the operational parameters. Optimization of the operational parameters play main role in enhancement of heat transfer rate after the heat exchanger is designed. The passive and active are the possible ways to enhance the heat transfer rate operationally. The Active method includes sprays, electro hydrodynamics, ultrasound waves, jets, synthetic jet heat transfer and high amplitude vibratory motion, passive method include Nano scale coating, surface coating, nanofluid, turbulence promoters, hydrodynamic cavitation and mixing promoters. The three methods are considered as effective methods to enhance the heat transfers which are Using Inserting Fluid Tabulators, Roughing the Heat Exchanger Surface and Nanofluids.

A nanofluid is a fluid containing nanometer-sized particles, called nanoparticles. These fluids are engineered colloidal Suspension of nanoparticles in a base fluid. The nanoparticles used in nanofluids are typically made of carbon nanofluids, metals, oxides, carbides. Common base fluids include ethylene glycol, oil and water. Nanofluids have properties that make them potentially useful in many applications in heat transfer, heat exchanger, including microelectronics, fuel cells, pharmaceutical processes, and hybrid-powered engines, engine cooling, domestic refrigerator, in grinding, machining, chiller, and in boiler flue gas temperature reduction. They enhanced thermal conductivity and the convective heat transfer coefficient compared to base fluid.

small concentration of particles that completely

II. ADVANTAGE OF NANOFLUID

Nanofluids have been considered for applications as advanced heat transfer fluids for almost two decades. Due to the wide variety and the complexity of the nanofluid systems, no agreement has been achieved on the magnitude of potential benefits of using nanofluids for heat transfer applications. Compared to conventional solid–liquid suspensions for heat transfer intensifications, Nanofluids having properly dispersed nanoparticles possess the following advantages

- High specific surface area so more heat transfer surface between particles and fluids.
- High dispersion stability with predominant Brownian motion of particles.
- Reduced particle clogging as compared to conventional slurries, thus promoting system miniaturization.
- Adjustable properties, including thermal conductivity and surface wettability, by varying particle concentrations to suit different applications.
- Pressure drop is minimum, Due to nano size particles.
- As compared to pure liquid it reduced pumping power to achieve equivalent heat transfer.
- Higher thermal conductivity of nano particles will increase the heat transfer rate.
- Nanofluids are most suitable for enhance heating and cooling systems.

The four unique features observed are listed below

A. *Abnormal enhancement of thermal conductivity* - most important feature observed in nanofluids is an abnormal rise in thermal conductivity beyond expectations and much higher than any theory could predict.

B. *Stability* - Nanofluids have been reported to be stable over months using a stabilizing agent.

C. *Small concentration and Newtonian behavior* Large enhancement of conductivity is achieved with a very maintained the Newtonian behavior of the fluid. The

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Date : 9th - 10th June 2016
Place : Pune

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Comparative inelastic analysis of RCC and steel-concrete composite high rise building

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Abstract— **The majority of building structures are designed and constructed in reinforced concrete which are mainly depends upon availability of the constituent materials and the level of skill required in construction, as well as the practicality of design codes. R.C.C is no longer economical because of their increased dead load, hazardous formwork. However composite construction is a new concept for construction industry. The present comparative study deals with inelastic behavior of RCC and composite structures. The pushover analysis is carried out using E-tab 15 and compare the various parameters like story drift, displacements etc. The reviews shows that, the composite structures are best suited for high rise buildings compared to that of steel and reinforced concrete structures.**

Keywords—steel-concrete composite; SRC; CFT; equivalent linear static analysis; story drift ; story displacement,

I INTRODUCTION

Now a days, in India; to fulfill the need of high rise building, composite is best suited for infrastructural growth rather than RCC and Steel. Reviews and studies shows that composite construction considerably reduces the gravity load as compare to RCC .composite is compatible and complimentary to each other; they have ideal combination as, steel in tension and concrete in compression, concrete protect the steel from corrosion as well as it gives thermal insulation to embedded steel; though they have almost same thermal expansion. Although the compressive strength and unit cost of reinforced concrete is less than that of structural steel, the use of modern composite systems, allowing the erection of multi-story structural frames to proceed at pace, can make it economically prohibitive to delay the construction of each floor while concrete columns are cast. In Japan, however, the superior earthquake resistant properties of composite beam-columns have been long recognized and have become a commonly used for construction in that region. It was therefore necessary to develop seismic design criteria for typically used Indian structural systems, to advance the use of this efficient type of mixed construction.

II. OBJECTIVE

The purpose of this work is to introduce the steel concrete composite members in high rise building construction.

1. Inelastic (Pushover) analysis of both RCC and Composite building frame are carried out using E-tab 15
2. For composite column, Encased rolled steel section in concrete (SRC) and concrete filled steel tube (CFT) are used.
3. The beams are made up from RCC and rolled steel section.
4. Compare the parameters like story drift, displacement etc. of RCC and Composite frame.
5. Suggest the suitability of composite construction as compare with RCC.

III. LITERATURE REVIEWS

Dr. D. R. Panchal In **(2014)** present the simplified method of design of composite slabs, beams and columns and software is developed with pre- and post- processing facilities in VB.NET. All principal design checks are incorporated in the software. The full and partial shear connection and the requirement for transverse reinforcement are also considered.

D. R. Panchal and P. M. Marathe (2011) make the comparative analysis of steel concrete composite, steel and R.C.C. for of G+30 storey commercial building in earthquake zone IV. Equivalent Static Method is used. For modeling of Composite, Steel and R.C.C. structures, ETABS software is used and the results are compared; and it is found that composite structure is found to be more economical. In all the options the values of story displacements are within the permissible limits as per code limits. Steel and composite structure gives more ductility to the structure as compared to the R.C.C. which is best suited under the effect of lateral forces.

LIU Jingbo and LIU Yangbing (2008) creates the CL-CFST (composite beam-concrete filled square tubular column), SL-CFST (steel beam-concrete filled square tubular column), CL-ETRC (composite beam-equivalent stiffness RC column), SL-ETRC (steel beam-equivalent stiffness RC column) and RC frame structures. Then the response spectrum and the inelastic analysis under rare earthquakes are carried out. The results illustrate that, compared with the SL-CFST frame, the integral stiffness of the CL-CFST frame is enhanced; natural periods

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A Lamb Wave technique for Non destructive evaluation

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Abstract: In recent years there is continuous rise in construction activities. The life of a structure depends on initial strength of constituents materials used and its subsequent maintenance. The deterioration of strength due to many reasons and natural process. To identify damage and defect is necessary to avoid failure. Hence there is necessity of non destructive evaluation (NDE). In this paper role of the PZT patches to evaluate structural loads to describe. The PZT patches transmit as well as receives a signal. It responds in a distinctive manner which utilizing ultrasonic vibrations to find out a featured access code known as a 'signature' of the corresponding structure. Any structural damage at the inchoate stage is easily captured with high sensitivity. The baseline signature having crucial information regarding the structure's nature for prediction of onset of damages of the structure. Hence this new NDE technique known as Lamb wave. Basically lamb wave is designated as the signature of host structure. It is also known as baseline signature, which determines condition of the structure at a corresponding point where PZT patches are attached.

In the present work aluminium plate, steel plate, hollow beam structures is examined to evaluate structural condition based on assessment of strength, mass, damping coefficient, damping ratio by using the proposed lamb wave technique.

Keywords: Nondestructive evaluation (NDE), PZT patches, Lamb waves, Root mean square deviation (RMSD).

1. INTRODUCTION

Structures are designed for a certain life span, and it is assumed that during this period the structure is maintained properly. By proper monitoring, it may be possible that the life of the structure be increased and serviceability enhanced, resulting in huge savings. It may possible that a new constructed structure may not be performing well with respect to design parameters, either due to inferior material or faulty construction. This can be ensured by proper health monitoring.

In the past catastrophic accidents has distinctly shown that the destruction of any structure, it starts from the inchoate level. Hence, even minor damage in inchoate nature should not be neglected, since it has the potential to grow at wide scale which directly affect to loss of life and property.

Non Destructive Evaluation (NDE) of concrete has historically been a niche discipline within civil engineering and a process carried out by an individual operator in the field to evaluate the extent of known or suspected flaws within a concrete structure. NDE techniques are different in way, for example ground penetrating, eddy current methods, the ultrasonic pulse velocity method, Ground Penetrating Radar(GPR) etc. It requires diligent effort of the skilled operator to maintain accurateness. For these reasons, NDE methods are typically called upon by governing agencies to identify the extent of known defects or defects suspected to be present.

Non-destructive evaluation is done by global dynamic techniques and local techniques. These techniques contain the testing specimen is portrayed to low-frequency excitations. In the form of sinusoidal or non harmonic. The vibration which result in displacements, velocities or accelerations. A number of changes occurs in structural parameters, namely the stiffness as strength and the damping matrices. Health of structure is evaluated after comparing the current structural parameters with the baseline parameters. However, the basic drawback of this technique is low sensitivity to incipient damage.

Non-destructive evaluation is proposed in this paper with the help of lamb waves. This method identifies the structural damage with great effectiveness. These waves are also known as ultrasonic waves. It can travel along large distances with less number of sensors. At a given employed frequency, at least two modes are generated by lamb waves. The main components of lamb wave technique are Digital storage oscilloscope, Function generator and Piezo-ceramic patches for generation of lamb waves.

Lamb waves are first predicted mathematically and described by Horace Lamb. Lamb waves are also known as an elastic waves, which can travel relatively large distances with very little amplitude loss. They offer the advantage of large area coverage with a minimum number of installed sensors. For Lamb waves, at a given frequency, at least two modes are generated as (one symmetric and one antisymmetric). As frequency increases, the number of simultaneously existing wave forms also increases. Lamb wave propagation is usually highly dispersive. Therefore, choosing the best frequency is a major issue.

Present paper deals with SHM technique using lamb waves. Various parameters such stiffness, strength, mass, damping ratio, damping coefficient etc. for given component for various materials are studied

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Soil Improvement Using Molasses

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Abstract-Now-a-days, there is rapid and continuous development in each and every field of construction industry. Roads are also plays important role in development of our nation. There are many methods and technologies which are effectively adopted for soil stabilization but over this the use of molasses, bagasse and fly ash is beneficial in cost and the material can be made easily available. The raw materials may cause a big impact on environment but if this is properly and if these are properly get used in stabilization of soil the construction becomes eco-friendly. This method of stabilization is very useful and eco – friendly from future point of view as the rapid industrialization may cause harmful effect but effect but using this method the bagasse, fly ash and molasses can be safely and in eco – friendly manner disposed off.

Keywords- molasses, soil, plasticity index.

I.INTRODUCTION

Road plays very important role in development of country. In case of developing country development of road is consider as development of country. Road pavements, today, are one of the most important infrastructures for a developing country like India. Any damage to the same causes a lot of inconvenience to the traffic, physical harm to the commuters and many such problems that are not unavoidable. In days to come, the axle loads and traffic intensity is likely to exceed the capabilities of soil used in construction of road pavements, if the use of the soil is assumed inevitable then certain modification will be essential in future to bring its capabilities to meet the demand of increasing axle loads and traffic intensity. One of such modification is improvement in strength of soil by using molasses. The molasses is available in enough quantity in Maharashtra state as there is much of sugarcane produces.

The sugarcane factory produces 10 tons of sugar and 4 tons of molasses after processing 100 tons of sugar cane. The molasses is use as binding material in stabilization of soil.[1]

II.MATERIALS

2.1Soil: The locally available soil is use at Dhangwadi, Tal. Bhor, Dist. Pune. The percentages of molasses are varying in soil sample.

2.2 Molasses: It is by-product of sugarcane industry. The molasses is syrup left from the final crystallization stage is called molasses. The molasses use is from Rajgad sahkari sakhar karkhanaBhor.

Table: 1 Properties of Soil.[2]

Sr.no	Property	Result
1	Specific gravity	2.59
2	Particle size analysis	
3	Gravel content% (20 to4.75mm.)	18.23
4	Sand content % (4.75 to 0.075mm)	64.86
5	Silt and clay content % (below 0.075mm.)	16.91
6	**Atterberg's Limits: %**	
7	Liquid limit	32.16
8	Plastic limit	22.56
9	Plasticity index	12.87
10	Maximum dry density (gm./cm3)	1.48
11	Optimum Moisture Content (%)	21.42

Table No. 2 : PhysicalProperties[2]

Sr.No.	Physical properties	Molasses
1	Color	Dark brown
2	Specific gravity	1.2
3	Viscosity (cp at 200C)	1450
4	PH	4.2
5	Litters/tone	714
6	Appearance	Syrupy Liquid
7	Gallons/tone	157

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Non Destructive Evaluation and Structural Health Monitoring : A Review

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Abstract Structural health monitoring has great potential for enhancing the functionality, serviceability and increased life span of structures. Structural health monitoring is defined as "continuous, autonomous, real time, in-service monitoring of the physical condition of a structure by means of embedded or attached sensors with minimum manual intervention". This need which arises from the fact that intensive usage combined with long endurance causes gradual but unnoticed deterioration in structures, often leading to unexpected disasters. Recently smart piezoelectric-ceramic lead material is emerged as high frequency impedance transducers for non destructive evaluation. In this role, the PZT patches act as collocated actuators and sensors and employ ultrasonic vibrations gives a characteristic admittance 'signature' of the structure. The admittance signature has vital information about the nature of the structure, and it can be analysed to predict the onset of structural damages. PZT patches exhibit excellent performance as far as damage sensitivity. Their sensitivity is high enough to capture any structural damage at the incipient stage. There are different Non-Destructive techniques like acoustic emission, ultrasonic, acousto-ultrasonic, guided ultrasonic waves or Lamb waves. The Lamb wave-based active SHM method uses piezoelectric (PZT) sensors to transmit and receive wave. Thus, Lamb waves generated by PZT sensors and time-frequency analysis techniques could be used effectively for damage detection. This study has given a complete idea of the working and the basic requirements of SHM system.

Keywords Structural health monitoring(SHM), Non destructive evaluation(NDE), PZT patches, Lamb waves.

1. Introduction

Structural health monitoring provides the ability of a system to detect adverse changes within a system's structure. SHM is an emerging technology that has multiple applications. Development of new techniques for structural health monitoring (SHM) and non-destructive evaluation (NDE) is need arises from the fact that intensive usage combined with long endurance causes gradual but unnoticed deterioration in structures, often leading to unexpected disasters. In this PZT materials, for example, have recently emerged as high frequency impedance transducers for SHM and NDE. In this role, the PZT patches act as collocated actuators and sensors and employ ultrasonic vibrations gives a characteristic admittance 'signature' of the structure. With the increasing number of civil structures, it has become a necessity to monitor these structures regularly via Non-Destructive Testing/ Structural Health Monitoring methods, to prevent catastrophic failures. Also it is required to implement cost-effective measures and ease of implementation. This way the cost gets reduced as it minimizes maintenance and inspection cycles.

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Fast Track Methodology Used In Construction Sector

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Abstract—The globalization of Indian economy and introduction of multinationals in India for the construction and pride program of Golden quadrilateral and other infrastructure projects it has become importance for most to have speedy construction and timely completion of project. Conventional methods of construction cannot cope up with demand of Infrastructural facilities with a high degree of quality control and quality assurance. The demand for residential housing is also on the increase and to cater for such demand also, conventional construction fails in providing required number of dwelling is in time. Latest construction technology like Mivan formwork. Post tensioning slab. Precast techniques. Material Management. Of fast and speedy construction is the only solution to this problem. Use of Industrialized construction system with the state of-the-art technology is the only replacement over conventional system of construction to bridge the gap between demand and supply of residential houses, infrastructure facilities such as roads, bridges, power etc. Shortage/non availability of skilled and semi-skilled works result in problems of cost and time over-runs, inferior construction, poor finishes, leakages, corrosion of structure etc. This can be avoided by adapting industrialized system of construction. This also avoids repairs and rehabilitation of structure before its expected life span. Mainly focused in this paper study of two methods Mivan technology over view and only Acrow formwork, H frames on time and cost, in comparison with conventional formwork.

I. Introduction

1.1 Indian scenario for fast track development in IT Structure:

Infrastructure development in India has set off in a major way in the last few years and is witnessing impressive growth across various segments. Construction sector is expected to be biggest beneficiary of the infrastructure boom. In India, Construction is the second largest economic activity after agriculture. The investment in construction accounts for nearly 11 present of India's Gross domestic product (GDP) and nearly 50% of its gross fixed capital formation (GFCF). It accounts for nearly65% of the total investment in infrastructure and is expected to be the biggest beneficiary of the surge in infrastructure investment over the next five years. Many clients aim to finish their construction project as fast as possible in order to gain a faster return on their investment. Fast-track construction involves the reduction of time from the normal duration of project activities and should not allow delays during the process. Many factors can cause delays on such projects. 'Ogunlana' suggested that the main reasons for project delays on housing projects were incomplete drawings, material management problems, deficiencies in organization, shortages of construction materials, and inefficiencies in site workers 'Dey' also suggested that delays in materials supply was a major cause of time overrun. This paper reviews practices on fast-track projects and explores the Information and Communications Technology (ICT) tools and techniques implemented. Shortening time-to-market has been one of the most critical factors to the success of businesses in many industries. As a result, companies have sought a method that can ensure a faster product development, most commonly focusing on product cycle time reduction through concurrent development. In the literature, these potential problems are mainly attributed to the increased level of uncertainty and research efforts on fast tracking have focused on uncertainty reduction. Construction sequence by triggering subsequent changes on other tasks, which often contributes to unanticipated schedule delays and cost overruns in fast-tracking construction. For these reasons, to effectively handle fast tracking change iterations involved in fast tracking need to be identified, and the dynamic behavior of construction resulting from those change iterations must be dealt with in a systematic manner.

Fast track techniques:

1) Mivan technology.
2) Precast techniques.
3) Post tensioning slab.
4) Material Management.

Aluform is a construction system for forming cast in place concrete structure of a Building. Aluform system provides aluminium formwork for RCC, load-bearing, multi-storied buildings and enables the walls and slab to be poured in the same operation. This increases efficiency, and also produces an extra-ordinarily strong structure with excellent concrete finish.

Due to the fine tolerances achieved in the machined metal formwork components, consistent concrete shapes and finishes are obtained floor after floor, building after building, confirming to the most exact standards of quality and accuracy. This allows plumbing and electrical fittings to be prefabricated with the certain knowledge that there will be an exact fit when assembled. The dimensional accuracy at the concreted work also results in consistent fittings of doors and windows. The smooth off form finish of the concrete eliminates the need for costly plastering.

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This is to certify that the paper entitled Analysis of circular steel tubes with coated glass fiber reinforced polymer. was presented in the NATIONAL CONFERENCE ON RESEARCH, DESIGN AND DEVELOPMENT IN ENGINEERING, MANAGEMENT & SCIENCES (NC-RDD-EMS-2016) held on 20 /03/2016 at RAJGAD DNYANPEETH TECHNICAL CAMPUS (Degree Engineering and Polytechnic) Dhangawadi, Tal: Bhor, Dist: Pune (Maharashtra).

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The author of the paper is Prof. Kapare Ganesh L.

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ANALYSIS OF CIRCULAR STEEL TUBES WITH COATED GLASS FIBER REINFORCED POLYMER

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ABSTRACT: The reinforcement in many structures plays the important role to overcome the pure tensile stresses in axial tension and bending. Steel has its own material properties to deal with these actions, and also it has some limitations of strength, as external forces goes on increasing naturally required steel also increases. To overcome this steel coated with glass fiber reinforced polymer (GFRP) can be used. This paper represents that how steel behaves individually and with GFRP coating. Theoretical as well as experimental results are presented. SAP2000 Finite Element Method oriented software is used to work out the theoretical results. Experimental study is attempted on three tubular sections & three steel plates. Tests are worked out on Universal testing machine UTM. Steel without coating and with coating both tastings are performed. Results show significant variation in the axial tension & axial compression capacity which is the important parameter of reinforcement. Paper concludes that steel with GFRP coating gives more tensile stress value as well as more axial compression capacity.

Keywords: GFRP- Glass Fiber Reinforced Polymer, UTM - Universal testing machine

I. INTRODUCTION

Glass fiber-reinforced polymer (GFRP) composites have been widely used in the strengthening of concrete structures. More recently, the use of GFRP to strengthen metallic structures has also attracted a significant amount of attention, but this work has generally been limited to the strengthening of metallic beams by the bonding of GFRP laminates. The present topic is concerned with the performance of circular hollow steel tubes with GFRP coating. Circular hollow steel tubes are used as columns in structural systems. Common failure modes of such tubes are when subjected to axial compression. GFRP is the composite material made up of glass fibers and particular bonding epoxy material. The role of the glass fiber is to sustain the external tensile stresses. Epoxy is just used to maintain the position of the fibers. Finite Element Method oriented software is used to work out the theoretical results. Experiments was performed to know the engineering properties of the material which will be required to calculate the combine E of the material. The modulus of elasticity were derived from the tensile [illegible] Maximum deflection, Stresses in all directions [illegible] for two different cases. SAP2000 Finite Element software is used for analysis.

This study is limited to [illegible] application of FRP material externally. Only [illegible] section coated with Glass Fiber Reinforced Polymer studied. Long term behavior & environmental effects treated

OBJECTIVE

1. The aim of this study is to investigate the behavior steel structure coated with the Glass Fiber Reinforced Polymer.
2. To analyze the tubular sections for tension & compression test with coating of glass fiber reinforced polymer
3. Analysis of truss on SAP2000 with use of two different materials i.e. with and without coating of GFRP material
4. Comparing the results of both the analysis, and to find the increase in the strength of section

II. PREVIOUS INVESTIGATION

J.G. Teng et al, (2002) : - The research on steel tubes coated with FRP is presented. Axial compression tests on FRP-confined steel tubes are described. Finite element modelling of these tests is discussed. Both the test and the numerical results show that FRP jacketing is a very promising technique for the retrofit and strengthening of circular hollow steel tubes. The use of FRP confinement to enhance the ductility and hence the seismic resistance of circular steel tubes has been explored. A series of axial compression tests has been presented to demonstrate the effectiveness of FRP confinement of steel tubes. A finite element model for predicting the behaviour of these FRP-confined tubes has also been presented. Both the load–axial shortening curves and the failure modes from the finite element model are in close agreement with those from the tests. Both test and numerical results have established conclusively that, with the provision of a thin FRP jacket, the ductility of the steel tube can be greatly enhanced. The

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The author of the paper is Prof. J.G. Kale

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"Review Paper On Graph Theory"

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Abstract:
The field of mathematics plays vital role in various fields. One of the important areas in mathematics is graph theory which is used in structural models. This structural arrangements of various objects or technologies lead to new inventions and modifications in the existing environment for enhancement in those fields. The field graph theory started its journey from the problem of Koinsberg bridge in 1735. This paper gives an overview of the applications of graph theory in computer science applications that uses graph theoretical concepts. Various papers based on graph theory have been studied related to scheduling concepts, computer science applications and an overview has been presented here.

1. Keywords: Dijkstra's Algorithms, Network Flow, Networks Problem.

I. Introduction

An important study in the field of computer science is the analysis of networks. Internet service providers (ISPs), cell-phone companies, search engines, e-commerce sites, and a variety of other businesses receive, process, store, and transmit gigabytes, terabytes, or even petabytes of data each day. When a user initiates a connection to one of these services, he sends data across a wired or wireless network to a router, modem, server, cell tower, or perhaps some other device that in turn forwards the information to another router, modem, etc. and so forth until it reaches its destination. For any given source, there are often many possible paths along which the data could travel before reaching its intended recipient.

The idea that there are many possible paths between a source and a destination in a network gives rise to some interesting questions. Specifically, if the connection speed between every two interlinked components is known, is it possible to determine the fastest possible route between the source and destination? Supposing that all of the traffic between two components was to follow a single path, however, how would this affect the performance of the individual components and connections along the route? The optimum solution for the fastest possible transmission of data often involves spreading out traffic to other components, even though one component or connection might be much faster than all the others.

In graph theory, a flow network is a directed graph where each edge has a capacity and each edge receives flow. The amount of flow on an edge cannot exceed the capacity of the edge. Often in Operations Research, a directed graph is called a network, the vertices are called the nodes and edges are called the arcs.

A flow must satisfy the restriction that the amount of flow into a node equals the amount of flow out it, except when it is a source, which has more outgoing flow or sink which has more incoming flow.

In Information technology a network is a series of points or nodes interconnected by communication paths. Networks include the bus, star, token ring and mesh topologies. A network is characterized by the type of data transmission technology in use of TCP/IP. Network can be used to model traffic in a road system fluids in pipes, circuits in an electrical circuit. A network flow is a directed graph where each edge has a capacity and each edge receives a flow.

This paper focuses on the maximum rate of flow which is possible from one station to another in the network of telephone lines, highways, railroads, pipelines of (oil or gas or water). This type of network is represented by a weighted connected graph in which the vertices are the stations and edges are lines through which the given commodity (oil. Gas, water, no of messages) flows. Here the weight represents a positive real number which is associated with each edge which represents the capacity of the line that is the maximum amount of flow possible per unit of time.

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This is to certify that the paper entitled Measurement of half lives of radio isotopes of Manganese and Indium produced by Neutron Activation Technique

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The author of the paper is Prof. A.K. Kandhalkar

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MEASUREMENT OF HALF LIVES OF RADIOISOTOPES OF MANGANESE AND INDIUM PRODUCED BY NEUTRON ACTIVATION TECHNIQUE

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*Abstract:*The Manganese (^{55}Mn) and Indium (^{115}In) radioisotopes are produced through the nuclear reaction ^{55}Mn(n,γ)^{56}Mn and,^{115}In(n,γ)^{116}In induced by thermal neutrons of energy 0.025eV .The Manganese is very suitable and widely used s a standard or monitor element in thermal neutron activation analysis. It has 100% abundance and has good thermal neutron cross-section of 13.03barn.Radioisotopes of Indium has many applications in reactor designing material. With these intentions, the half lives of ^{56}Mn and ^{116}In radioisotopes have measured in the present work. The measured values of half lives are found to be 2.62 hours and 52.30 minutes. The results are in good agreement with the earlier reported literature values.

Keywords: Half Life, NaI(Tl) Gamma ray Detector, 8K M.C.A. analyzer. Thermal neutrons, Nuclear Reactions .

I. INTRODUCTION

Accurate data . half lives of radioisotopes of different elements is having potential applications in many fields such as thermal and fast reactor technology, radioisotope production application of radioisotopes in medical field , agriculture field , industries, measurement of cross-sections of nuclear reaction, elemental analysis using neutron activation and charge particle activation technique [1,2,3,4,5,6]. The quantitative measurement in these entire fields need update accurate values of half lives of radioisotopes. Many researchers in this field have measured the half lives of different radioisotopes [7,8].The large variations are observed in measured values of half live in of different radioisotopes[9,10].With this intention the half-lives of ^{56}Mn and ^{116}In are measured.

II.EXPERIMENTAL DETAILS

Five samples of pure (99.9%) elemental powder of Manganese and Indium are prepared of different weights in the range of 700mg to 1000mg. Each sample is packed in polyethylene bag for irradiation. Each sample of Manganese is irradiated with thermal neutrons of energy 0.025eV. from the Cf-252 thermal neutron source for different irradiation period in the range of 15 to 20 hours .In the similar manner, each sample of Indium is irradiated for the different irradiation time in the range of 4 to 6 hours .Induced gamma ray activities of ^{56}Mn(Eγ= 840KeV) and ^{116}In (E_γ = 406.9KeV, 1097.2KeV, 1293.5KeV) have measured using the NaI(Tl) gamma spectrometer coupled to the 8k M.C.A. analyzer .The gamma activities of manganese and Indium are measured for 8 hours and 5 hours respectively using M.C.S. modes. The measured activities from respective gamma ray spectrum of Manganese and Indium are plotted with time period. From these data, half lives of ^{56}Mn and ^{116}In radioisotopes are calculated.Figure1 and Figure2 shows the gamma ray spectra of neutron irradiated typical sample for different times.Figure3 and Figure4 shows the plot of measured gamma rays activity of ^{56}Mn and ^{116}In radioisotopes respectively with time period. The measured values of half lives in the present work are given in Table1

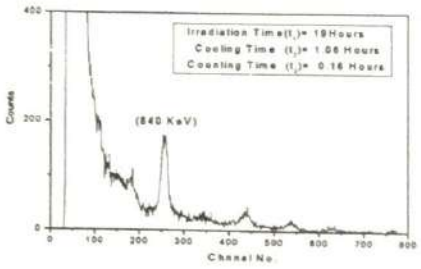

Figure 1.Gamma ray spectrum of Thermal neutron irradiated Manganese sample (^{56}Mn) after 1.06 Hours of end of irradiation.

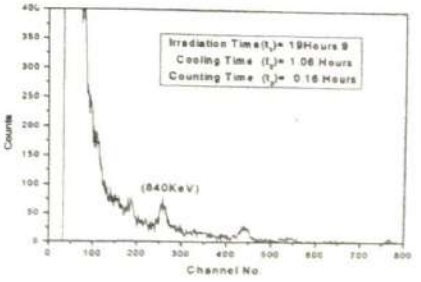

Figure 2.Gamma ray spectrum of Thermal neutron irradiated Manganese sample (^{56}Mn) after 3.64 Hours of end of irradiation.

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The author of the paper is Prof. Raut R.B.

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SYNTHESIS AND CHARACTERISATION OF CdS AND HgS NANOPARTICULATE FILMS BY LLIRT METHOD.

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I. Abstract:- Aim of this study was to find nanoparticles by liquid-liquid interface reaction technique (LLIRT) method. In this technique, a reaction takes place at the interface of the two liquids forming stable particles. These particles are picked up on a suitable substrate like a glass plate or a copper grid forming a monolayer. Multiple layers can be deposited by repeating the number of dips. The characterization of this film is carried out with the help of Transmission Electron microscopy(TEM), Electron Diffraction (ED), X-ray photoelectron Spectroscopy XPS) measurement.

Keywords : LB Film, LLIRT, Synthesis

II.INTRODUCTION

The oxford dictionary describe the term 'Nano' coming from Greek term Nanos, Nano" is now frequently used as a prefix meaning 'a billionth ($1/10^9$). Nanotechnology can be defined as the science and engineering involved in the design, synthesis and characterization and applications of materials and device whose smallest functional organization in at least one dimension is on the nanometer scale. Dimension between 1 and 100 nanometer are important in nanotechnology, because in this limit one observes new properties of matter, primarily due to the laws of quantum physics. An atom is smaller than a nanometer, but molecules can be larger than this measure, that is nano-scale material lie in between atomic an bulk scale materials. Nanoscience is the study of atoms, molecules and objects whose size is on the nanometer range. There are multiple reasons becoming such a big field on availability of new instrument able to see this scale in the early 1980 th.

The scanning tunneling microscope was able to see atoms. A few years later, atomic force microscope (AFM) was invented, currently there are number of complimentary instruments that help scientist in the nano realm. We have use a few of them in this project.

Properties Of Nanomaterial :

Size dependent properties of nanomaterials:

The nanomaterial exhibits some remarkable specific properties that may be significantly differentfrom the physical properties of bulk material. Some known physical properties of nanomaterials are:

a. Large fraction of surface atom bulk atom
b. Large surface energy
c. To reduce defects.

1. Melting point and lattice constant:

Nanomaterials have low melting points or phase transition temp and appreciably reduce lattice constant, due to large fraction of surface atom in the total amount of atoms. As the particle size decreases, the surface energy increases so that the phase transition temperature can be attributed to change in surface to volume ratio.

2. Mechanical properties:

Defects in small size materials are less. Thus the mechanical strength is high.(Due to the size reduction there is enhancement of strength in Nano sized materials, which have reduced defects, is due to the reduced probability of defect there is strength in material), which is one or two order of magnitude higher than that of single crystal in bulk form.

3. Magnetic properties:

Magnetic properties of nanomaterials are distinctly different from that of bulk material. Ferromagnetism of bulk material disappears and transfers to superparamagnetism in the nanometer scale due to the huge surface energy.

LIQUID-LIQUID INTARFACE REACTION TECHNIQUE

Methods of Preparation of Thin Films:

Various different methods have been adopted for the synthesis of nano scale materials. They can be broadly classified under four categories namely physical, chemical, Biological and hybrid. The physical method mainly includes Ball-Milling process, laser ablation, vapour deposition etc. Biological and hybrid methods being more

Criteria 3: Research, Innovations and Extension

Key Indicator – 3.3 Research Publications and Awards

3.3.5 Number of books and chapters in edited volumes / books published, and papers in national/international conference-proceedings per teacher during the last five years (8)

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Sr. No.	A.Y	Computer Engineering	E&TC Engineering	Mechanical Engineering	Civil Engineering	First Year Engineering	Total Count
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3	2015-16	02	00	14	06	03	25
4	2014-15	01	05	04	03	00	13
5	2013-14	04	03	03	02	00	12

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CERTIFICATE

This is to certify that

Mr. Kiran R. Takale has presented paper, titled

" E-Waste & It's Present Scenario For Pune City"

In the

"NATIONAL CONFERENCE ON TECHNICAL REVOLUTION"

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E-waste Management & Recycling Technique: A review for Pune city

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P. G. Student, Anantrao Pawar College of Engineering & Research, Parvati, Pune.

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Abstract— **Electronic waste has a rapidly increasing hazardous waste stream. The discarded electronics and electrical equipments are considered as E-waste. Presently E-waste becomes a major threat in India especially in metropolitan cities like Delhi, Chennai, Mumbai, Bangalore, Kolkata, Pune etc. Pune ranks second largest E-waste generating city in Maharashtra state. Pune city generates approximately 4500 tons of E-waste annually. At present proper framework for E-waste management is not available in Pune city. In E-waste management the recycling is important point. The success of E-waste management is depends on environmental friendly recycling techniques of E-waste. The paper gives ideas about present situation of E-waste management & recycling in Pune city as well as future scope in its.**

Index Terms— **Electronic waste, PCBs, WEEE**

I. Introduction

The rapid increasing in urbanization and industrialization is choking Pune city, the oxford of east, under heaps of E-waste. Waste from Electrical and Electronic Equipments (WEEE) is stored, processed, recycled, reused and finally disposed in a manner, which is detrimental to environment. Maharashtra state ranks first among top ten states generating WEEE in India. Among Indian cities, Pune ranks among the top Ten Indian Cities, which are repository of Waste Electrical Electronics Equipments. Pune city has emerged as Information Technology (IT) destination in the country. As a result many IT companies have established their offices. Also the large number of educational and commercial institutions also uses electronics and electrical equipments. The Mumbai-Pune industrial belt is one of the electronic items manufacturing hubs of the country.

Solid waste management, which is already a creating lot of problems in Pune, has become more complicated by the invasion of E-waste. The annual E-waste generated in Pune is approximately 4500 tons in year 2015 and is showing an increasing trend [1].

Improper disposal or contact with E-waste can lead to contamination of the surrounding ecosystem and can be a major health hazard [2]. The hierarchy of treatment of E-waste encourages reuse of whole equipment first, remanufacturing and upgradation, then recovery of materials by recycling techniques, and as a last resort, disposal by incineration and land filling. However land filling of E-wastes can lead to the penetration of heavy metals in ground water. Burning of CRT emits toxic fumes into the air [3]. All electronic equipments contain printed circuit boards which are hazardous because of their content of lead (in solder), brominated flame retardents (typically 5-10% by weight) and antimony oxide, which is also present as a flame retardant (typically 1-2% by weight) [4]. Recycling of electronic waste takes care of both waste treatment and valuable material recovery and hence has both ecological and economic relevance. Precious metals recovered from E-waste have a wide application in the manufacture of electronic appliances, serving as contact materials due to their chemical stability and their good conduction properties. On a broader scale, analyzing the environmental and societal impacts of E-waste reveals a mixture of benefits and costs [5]. Proponents of E-waste recycling claim that greater employment, new access to raw materials and electronics, and improved infrastructure will result due to E-waste recycling activity. This will further improve the region's progress towards prosperity.

This study focuses on management and disposal of E-waste in Pune city. It also gives idea about suitable E-waste recycling technique. Identify to improved practices based on E-waste management and recycling system in Pune city.

II. Literature Review

Electronic Waste Management System at Pune

A comprehensive study conducted by author on the existing E-waste management system in Pune. The study gives idea about the present E-waste practices of the various stakeholders in the system. Figure 1 illustrates the existing E-waste management system in Pune and the following paragraphs discuss the same.

Informal Recyclers:

The waste collectors or kabadiwalas (scrap retailers) are the most important link in this waste flow and are responsible for the collection of waste from all consumers and manufacturers. There is another set of operators, waste traders with better financial capacity, who bid for larger volumes of waste being discarded by companies and organization through auctions

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Civil Engineering Post Graduate Conference - 2015

Certificate

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Kiran Takale

has participated in **Civil Engineering Post Graduate Conference - PGCON 2015** held at MAEER's MIT, Pune on 24th & 25th April 2015.

He/She presented his/her research work based on final year Dissertation topic in **ME Civil** Environmental titled E-waste management & Recycling Technique: A review for Pune City.

Dr. Sunil S. Pimplikar Head, Civil Engineering Department	**Dr. Mrudula S. Kulkarni** Head, Structural Engineering Department	**Prof. Dr. L. K. Kshirsagar** Principal, MAEER's MIT, Pune.	**Prof. Dr. Vishwanath D. Karad** Founder, Executive President, MAEER's MIT, Pune

E-waste Management & Recycling Technique: A review for Pune city

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P. G. Student, Anantrao Pawar College of Engineering & Reserch, Pune.
Asst. Professor, Anantrao Pawar College of Engineering & Reserch, Pune.

Introduction

Electronic waste has a rapidly increasing hazardous waste stream. The discarded electronics and electrical equipments are considered as E-waste. Presently E-waste becomes a major threat in India especially in metropolitan cities like Delhi, Chennai, Mumbai, Bangalore, Kolkata, Pune etc. Pune ranks second largest E-waste ge[illegible]ng city in Maharashtra state. Pune city [illegible]erates approximately 4500 tons of E-waste annually.

At present proper framework for E-waste management is not available in Pune city. In E-waste management the recycling is important point. The success of E-waste management is depends on environmental friendly recycling techniques of E-waste. The paper gives ideas about present situation of E-waste management & recycling in Pune city as well as future scope in its.

Materials & Method

Contemporary E-waste Management System at P[illegible]

[illegible]ensive study conducted by author on the exist[illegible]-waste management system in Pune. The study gives idea about the present E-waste practices of the various stakeholders in the system.

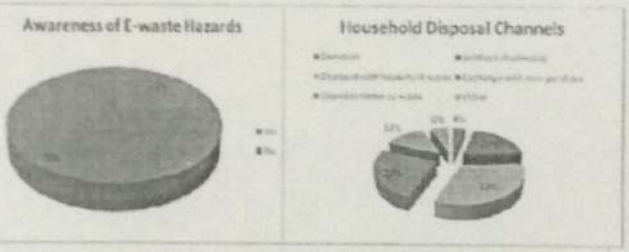
- Informal Sector
- Formal Sector
- Household Users
- Role of Government

Proposed Model for E-waste Recycling:-

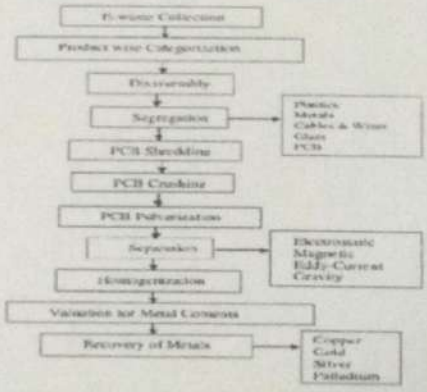
1. Collection, disassembly and segregation
2. Shredding, crushing and pulverization
3. Valuation methods for PCBs: Precious metal contents
4. Metals extraction

Results

- We performed a survey of 200 household across Pune using random sampling. The focus of the survey was to study the disposal techniques of the electronic waste products and to assess the E-waste awareness among the domestic users.
- The different families in Pune according to living standard were considered for the study.
- The survey gave valuable inputs regarding awareness of the toxic substances present in the E- waste and knowledge of the hazards to human health and the environment and the peoples
- Most of citizens of Pune are not aware about E-waste and its hazards. Outcome of the above studies are gives in Figure 1.



Simplified process of E-waste management and recycling



Total **E-waste generation in Pune city** is approximately **4500 tons** in year 2015. As per the NMI studies Printed Circuit Boards containing 5% weight of total E-waste. PCBs and connectors are most valuable parts as it contains precious metals like gold, silver, copper. The detail of approximate sellable metal in E-waste is described as in below Table.

Items	Weight	Wt (by %)
E-waste	4500000 kg	100
PCBs	225000 kg	5
Precious metal content in PCB	3712.5 kg	1.65

Discussion

- This paper discusses the status of E-waste practices prevailing at the various stake holders of the system in Pune and indicating absence of broad system.
- The paper proposed a technique to recycling of E-waste in proper channel.
- There existed half hearted efforts of Pune Municipal Corporation and some organizations managing only a small percentage of the total E-waste generated.

Conclusion

Most of peoples in Pune are unaware about E-waste and hazards due to the E-waste.

Most of E-waste is dumping with Municipal solid waste landfill directly. On other side formal sector faces problems of insufficient supply of E-waste.

A major challenge for E-waste recycling is the need for a continuous and stable supply of materials to be recycled.

Participation of informal sector in authorized channel is very important for success of E-waste management programme.

The authors thinking that combine efforts by various stakeholders in electronic product value chain, academic community and the government are required to evolve and implement E-waste management system in Pune.

Application

E-waste is an hazardous waste stream causing serious threat in India specially in metropolitan cities. On other hand E-waste is also very useful in employment generation to unskilled labour.

With integration of informal sector into authorised channel will play important roll in E-waste management.

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Pavement Rehabilitation Using Thin White Topping

Ashish P Alapure [1], Shishir S Ganjale [2], Shrikant S Kulkarni [3], Utkarsha B Ingle [4], Yogesh Y Gore [5], Yogita B Dahatonde [6].

U.G Student, Department of Civil Engineering, JSPM's Rajarshi Shahu College of Engineering, Tathawade, Pune, India[1,2,3,4,5,6]

ABSTRACT: Thin White topping (TWT) is a technology to construct 100-200mm thick cement concrete overlay on distressed asphalt pavement as a rehabilitation technique. There have been several TWT projects completed in India, the first in Pune, subsequently in New Delhi, Ghaziabad, Mumbai, and Thane. All projects have shown good to excellent performance so far, indicating that this rehabilitation strategy can stand up to the Indian climate and traffic conditions. The suitability of TWT rehabilitation for a particular site is dependent on several factors including existing asphalt thickness, volume of truck traffic, base and sub-grade support, and pavement conditions. This paper outlines the state-of practice in India for construction of TWT considering mix traffic, extreme climatic conditions, use of indigenous materials and design aspects as per Indian Road Congress (IRC) guidelines.

KEYWORDS: Deflection, Hot Mix Asphalt, Stress, Thin White Topping.

1. INTRODUCTION

The increasing truck weights and tyre pressures on our pavements in recent years have pushed the demand on the performance of our pavements to a higher level. Many asphalt pavements have experienced rutting while many others have experienced longitudinal cracking. One of the possible solutions to this problem is the use of white topping (WT), which is a cement concrete layer placed over an existing asphalt pavement.

Concrete overlays have been used to rehabilitate bituminous pavements since 1918 in USA. There has been a renewed interest in white topping, particularly on Thin White Topping (TWT) and Ultra-Thin White Topping (UTWT) over Conventional White Topping. Based on the types of interface

i. **Conventional White topping**– which consists of PCC overlay of thickness 200 mm or more, which is designed & constructed without consideration of any bond between existing overlay & underlying bituminous layer (without assuming any composite action).

ii. **Thin White topping (TWT)**– which has PCC overlay between 100 – 200 mm. It is designed either considering bond between overlay & underlying bituminous layer or without consideration of bond. High strength concrete (M 40 or higher) is normally used to take care of flexure requirement. Joints are at shorter spacing of 0.6 to 1.25 m.

iii. **Ultra-Thin White topping (UTWT)**– which has PCC overlay of less than 100 mm. Bonding between overlay & underlying bituminous layer is mandatory. To ensure this, the existing layer of bitumen is either milled (to a depth of 25 mm) or surface scrapped (with a non-impact scrapper) or gently chiseled. Joints are provided at a spacing of 0.6 to 1.25 m.

White topping is stronger than asphalt overlay, and thus more resistant to rutting and surface initiated cracking. Consequently, white topping pavements pose potential economical and technical benefits. However, they need to be effectively evaluated for feasibility and proper application techniques, suitable for India, so that their use can provide the maximum benefits to the road users in particular and Indian economy at large.

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Survey on Visual Word Generation and Their Matching Techniques

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ABSTRACT

Content-Based Image Retrieval (CBIR), a technique which uses visual contents to search images from large scale image databases according to user's interests. Contents of image can be global features such as color, shape and texture or local features such as SIFT (Scale Invariant Feature Transform) features. Both types are complement for each other. Bag of visual words (BoVW) is a widely used approach in most of content based image retrieval. This approach is based on local features of images which forms clusters based on similarity of these features. These formed clusters are used for matching two similar images. This survey paper mainly concentrate on clustering of local features i.e. visual word generation and matching of similar visual words based on their characteristics. This paper surveys on recent studies on visual word generation and matching.

Key Words: Bag of Visual Words (BOW), CBIR, KD-tree

1 INTRODUCTION:

INTEREST in the potential of digital images has increased enormously over the last few years, by the rapid growth of imaging on the World-Wide Web. It is also discovering that the process of locating a desired image in a large and varied collection can be a source of considerable frustration. Content based image retrieval (CBIR) has been found to be a great solution in finding precise results for the given query images or finding a desired image from large collection of database images.

1.1 Content Based Image Retrieval system

In above title meaning of 'Content Based 'is finding results for given query image by analyzing contents of query image itself. Here 'Contents 'will be color, shape, texture and local features which are derived from that image itself. Content Based Image Retrieval systems are widely used in web-based image search engines as they are purely independent of meta-data. Thus a system which can search images based on their content will provide better indexing and will return more accurate results.

1.2 Image Features

CBIR system makes use of contents of query image and these contents are referred as "Features". Image features can be color, shape, texture as well as local features.

1.2.1 Color: In CBIR systems, color is the most widely feature as they are easy to extract and utilize. Color feature is independent of image size and orientation, and fairly robust to background complication. Each image added to the database is analyzed to compute a color histogram which shows the proportion of pixels of each color within the image. The color histogram for each image is then stored in the database. At search time, the user can either specify the desired proportion of each color (75 % olive green and 25% red, for example), or submit an example image from which a color histogram is calculated.

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An Analysis of Image Steganography Methods

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Abstract—This paper presents Associate in Nursing data concealment technique that utilizes lifting schemes to effectively hide data in pictures. Active data concealment ought to end in the extraction of the hidden information from the image with high degree of information integrity. Current trends favor victimization digital image files because the cowl file to cover another digital file that contains the key message or data. The smallest amount vital bit (LSB) embedding technique suggests that information are often hidden within the least vital bits of image and also the human eye would be unable to note the hidden image within the cover file. Also this paper explains the embedding technique and presents analysis of Discrete Wavelet Transform (DWT) and Discrete Cosine Transform (DCT). The performance and comparison of these three techniques is evaluated on the basis of the parameters like Mean Squared Error (MSE), Peak signal-to-noise ratio (PSNR) and Bit error rate (BER).

Index terms: Steganography, LSB, DCT, DWT, MSE, PSNR, BER.

I. Introduction

Cryptography was created as a method for securing the secrecy of communication and lots of totally different ways are developed to inscribe and rewrite information so as to stay the message secret. Unfortunately it's typically not enough to stay the contents of a message secret, it's going to even be necessary to stay the existence of the message secret. The technique won't to implement this, is named steganography. Steganography is that the art of invisible communication by concealing information inside different information. The term steganography springs from the Greek and virtually suggests that "covered writing" [1]. A steganography system consists of 3 elements: cover-object (which hides the key message), the key message and therefore the stego-object (which is that the cowl object with message embedded within it.) A digital image is represented employing a 2-D matrix of the color intestines at every grid purpose (i.e. pixel). Typically, grey pictures use eight bits.

The steganography system that uses a picture because the cowl object is remarked as a picture steganography system [2].

The shift from cryptography to steganography is because of that concealing the image existence as stego-images change to implant the key message to hide pictures. Steganography conceptually implies that the message to be transmitted isn't visible to the informal eye. Steganography has been used for thousands of years to transmit knowledge while not being intercepted by unwanted viewers. The most objective of Steganography is especially involved with the protection of contents of the hidden info. Pictures are ideal for information concealment [1, 2] as a result of the big quantity of redundant area is formed within the storing of pictures. In this method, the secret messages are transmitted through unknown cowl carriers in a way that the horribly existence of the embedded messages is not detectable. Carriers embrace images; audio, video, text or the other digitally diagrammatical code or transmission. The hidden message could also be plaintext, cipher text or something which will be diagrammatical as to a small degree stream.

II. HIDING METHODS IN IMAGE STEGANOGRAPHY

There are various methods using which information can be hidden in images in steganography.

Almost all data hiding techniques always try to alter immaterial information in the cover image. LSB which means least significant bit insertion is a very common and also a simple approach for embedding the information in a cover image. For example, a simple scheme proposed, is to place the embedding data at the least significant bit of each pixel in the cover image [7, 8, 9]. In steganography, the altered image is called as stego-image. Changing LSB does not change the actual quality of image to human observation but this scheme is sensitive to variety of image processing attacks for example

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FAST TRACK METHODOLOGY USED IN CONSTRUCTION SECTOR

Shriprasad Vitthal Bankar and Praful .S. **Shrigiriwar** and **Prof.Dr.S.S.Pimplikar**

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Abstract

With the globalization of Indian economy and introduction of multinationals in India for the construction and pride program of Golden quadrilateral and other infrastructure projects it has become importance for most to have speedy construction and timely completion of project. Conventional methods of construction cannot cope up with demand of Infrastructural facilities with a high degree of quality control and quality assurance. The demand for residential housing is also on the increase and to cater for such demand also, conventional construction fails in providing required number of dwelling is in time.

Latest construction technology of fast and speedy construction is the only solution to this problem. Use of Industrialized construction system with the state of-the-art technology is the only replacement over conventional system of construction to bridge the gap between demand and supply of residential houses, infrastructure facilities such as roads, bridges, power etc. Shortage/non availability of skilled and semi skilled works result in problems of cost and time over-runs, inferior construction, poor finishes, leakages, corrosion of structure etc. This can be avoided by adapting industrialized system of construction. This also avoids repairs and rehabilitation of structure before its expected life span

I. INTRODUCTION

A. Indian scenario for fast track development in IT Structure:

Infrastructure development in India has set off in a major way in the last few years and is witnessing impressive growth across various segments. Construction sector is expected to be biggest beneficiary of the infrastructure boom. In India, Construction is the second largest economic activity after agriculture. The investment in construction accounts for nearly 11 present of India's Gross domestic product (GDP) and nearly 50% of its gross fixed capital formation(GFCF). It accounts for nearly 65% of the total investment in infrastructure and is expected to be the biggest beneficiary of the surge in infrastructure investment over the next five years.

Many clients aim to finish their construction project as fast as possible in order to gain a faster return on their investment. Fast-track construction involves the reduction of time from the normal duration of project activities and should not allow delays during the process. Many factors can cause delays on such projects. 'Ogunlana' suggested that the main reasons for project delays on housing projects were incomplete drawings, material management problems, deficiencies in organization, shortages of construction materials, and inefficiencies in site workers 'Dey' also

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Use of Recycled Aggregate In Concrete structure

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REUSE OF RECYCLED AGGREGATE IN CONCRETE

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ABSTRACT

This report reviews the various types of aggregates and their potential for use in concrete construction materials. For the purpose of this review, aggregates are classified into manufactured, recycled and reused by-product aggregates. They are described in terms of sources and production process, physical and mechanical characteristics, the benefits and limitations of their use in concrete and/or road construction, and their availability. In many countries, including India, recycled concrete aggregates (RCA) have been proven to be practical for low-strength concretes and to a limited extent for some structural grade concrete. The processing and quality control cost associated with their use plus the premium paid for mix design adjustment to achieve the same strength grade as concrete with natural aggregates can vary considerably. Aggregates from selected materials and industrial by-products, on the other hand, have greater potential for use in concrete and/or as road construction materials.

A number of manufactured and recycled aggregates are readily available in certain localities. Air-cooled blast furnace slag (BFS) and manufactured sand are two good examples of concrete coarse and fine aggregates. Comprehensive performance data are available for air-cooled blast furnace slag and work is continuing to obtain performance data and appropriate specifications for manufactured sand. in other construction applications such as pavement, road base and sub-base, there is limited information on the performance of each material as assessment appeared to be based on field trials, especially those by road authorities.

KEY WORDS: -
Concrete, Conventional Coursed Aggregate, Recycled Coursed Aggregate,

INTRODUCTION:

Any construction activity requires several materials such as concrete, steel, brick, stone, glass, clay, mud, wood, and so on. However, the cement concrete remains the main construction material used in construction industries. For its suitability and adaptability with respect to the changing environment, the concrete must be such that it can conserve resources, protect the environment, economize and lead to proper utilization of energy. To achieve this, major emphasis must be laid on the use of wastes and by-products in cement and concrete used for new constructions. The utilization of recycled aggregate is particularly very promising as 75 per cent of concrete is made of aggregates. In that case, the aggregates considered are slag, power plant wastes, recycled concrete, mining and quarrying wastes, waste glass, incinerator residue, red mud, burnt clay, sawdust, combustor ash and foundry sand. The enormous quantities of demolished concrete are available at various construction sites, which are now posing a serious problem of disposal in urban areas. This can easily be recycled as aggregate and used in concrete. Research & Development activities have been taken up all over the world for proving its feasibility, economic viability and cost effectiveness.

Recycled aggregate is produced by crushing concrete, and sometimes asphalt, to reclaim the aggregate. Recycled aggregate can be used for many purposes. The primary market is road base.

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