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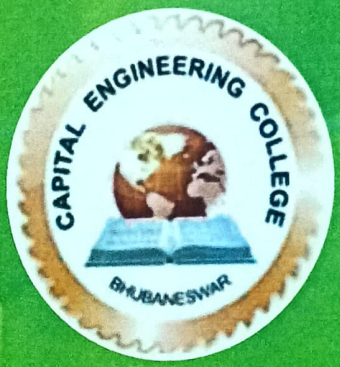

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Design and Methodology of Automated Guided Vehicle-A Review

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ABSTRACT : *In this paper we study the design and different methodology of automated guided vehicle (AGV) systems. This paper provides an overview on AGVS technology discusses recent technological developments and describes the formulation to control the traffic inside industrial work space.*

Keywords – *AGV, Automation, Material handling, line followerAGV*

INTRODUCTION

Material handling is defined by MHIA (MATERIAL HANDLING INSTITUE OF AMERICA) as "The movement, storage, protection and control of material throughout the manufacturing and distribution process including their consumption and disposal. Effective material handling is the most important part of manufacturing and distribution operation without it final product cannot turn into profit. The handling of material must be performed safely, efficiently, at low cost in timely manner, accurately without damage to the material. The cost of material handling is a significant portion of total production cost estimating average around 20-25%of total manufacturing cost, so direct cost of material handling cannot be measured. The main factor attributing the material handling cost is wasted time. The second major cost added to material handling is labour cost. In addition increasing labour and time compensation costs make material handling alternative more desirable. The purpose of this paper is to inform the reader about alternative material handling solution that include different type of AGV and autonomous mobile robot with different application of colored tape type AGV. An Automated guided vehicle is a programmable mobile vehicle used in industrial application to move materials around a manufacturing unit. The first AGV developed by A.M.Barnet (1953) who used overhead wire to navigate the vehicle in grocery shop. The use of AGV has grown enormously since their introduction. the number of area of application and variation type has increased significantly. Recently AGV extended their popularity to other application Depakpunithe (IJRAS august 2013) developed an AGV to betterment public health care system. AGV can used as serving robot in hotel, material handling robot in warehouse and improve the health care system. At manufacturing area AGV are capable to transport all type of material related to manufacturing process. According to Gotte (2000)[5] the usage of AGV will pay off for manufacturing environment (like distribution transportation, and transshipment) with repeating transpiration pattern He described different available technology for automation in containerterminal.

WHAT IS AGV?

An automated guided vehicle is a programmable mobile vehicle. The automated guided vehicle is used in industrial application to move material around a manufacturing facility. The AGV are capable of transportation task fully automated at low expanses AGV have to make the system automatic by doing the decision on the path selection. This is done through different method frequency selected mode, path selected mode and vision based mode etc. The central processing system of AGV is issue the steering command and speed command. For the pre defined manufacturing environment the map is saved in the AGV memory and control by stationary control unit of warehouse.

A general AGV system essentially consists of vehicle periperheral on site component as well as stationary control system. The main components of AGV system are

- VEHICLE
- GUIDENCE PATHSYSTEM
- FLOOR CONTROL AND TRAFFIC MANAGEMENTSYSTEM

The faultless interaction of these components ensuring the efficiency of working plant. AGV will guarantee a safe performance of that care of personal as well as the load and surrounding.

DESIGN, DEVELOPMENT, MOTION SIMULATION AND ANALYSIS OF ROLLER WITH COIL LIFTER FOR HEAVY COIL WRAPPING MACHINE

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ABSTRACT

Aluminum sheet is rolled into heavy coils in the Rolling Mill which is also called as Eye end coils. In order to protect these Aluminum coils from dust, moisture and damages which may occur while transportation, loading and unloading. It can be prevented by wrapping with proper wrapper material like HDPE and Polyethylene film over the surface circumferentially, this preserves the same surface finish and quality obtained after rolling the coil. The present work is to Design and Develop a Roller with Coil Lifter for Heavy Coil Wrapping Machine to rotate the coil at a desired speed to wrap a desired wrapper material over the coil surface circumferentially and one the completion of wrapping process the lifter lift the coil and transfer it to roller conveyor. 2D drawings of roller with coil lifter which consists of General Assembly (G.A.), Sub-assembly and Part Drawings with detailing are prepared using AutoCAD 2012 tool and 3D modelling of roller with coil lifter are done using Solid Works 2013 tool. Motion Simulation is carried out on assembly which shows the operation of the machine using Solid-works 2013 tool. The load of the coil is directly acting on the rollers of the roller assembly and while lifting the coil load will be acting on the lifter. Analysis is carried out to check for safer design which should withstand the applied loads on the parts. The results will be compared with the values obtained from Numericalmethod.

Key words: Aluminum, HDPE, AutoCAD 2012.

AN EXTENSIVE LITERATURE SURVEY ON ROUTING PROTOCOLS IN WIRELESS SENSOR NETWORKS

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Abstract –The stability and Network lifetime of WSNs depend on sensor nodes power consumption. Optimized the energy consumption, enhance the network lifetime. Mostly Sensor nodes consume energy during the information processing and communication with base station (BS) or other sensor nodes. To extend network lifetime and batter stability, WSNs should be energy efficient. Energy proficiency can be accomplished by various means, as intelligently outlining of MAC and routing protocols. Routing protocols can be flat, Minimum Transmission Energy (MTE) or hierarchical protocols. In In basic routing protocols sensor nodes specifically send information to BS. In MTE every sensor node sends information to its neighbor node; along these lines stack at sensor nodes close to base station is substantially more noteworthy than other sensor nodes, results reduced lifetime. Energy consumption and network life time are fundamental issues in designing of routing protocols for Wireless sensor network. Numerous algorithms have been proposed for diminishing energy utilization and to expand network life time of the WSN. Clustering algorithms have been gained more popularity in this field, as a result of their approach in cluster head detection and information accumulation. Filter (circulated) is the main clustering routing protocol which is turned out to be better contrasted with other such algorithms. This review presents different LEACH protocols for Heterogeneous wireless network.

Indexed Terms - dead nodes; low energy adaptive clustering hierarchy protocol; energy aware multi-hop multi-path hierarchical protocol; heterogeneous wireless sensor networks; energy harvesting.

1. INTRODUCTION

With the advancement in smaller scale integrated circuit technology, Wireless Sensor Networks (WSNs) have begun to assume an essential part in our every day lives. It is a direct result of the lessening in cost of the sensor nodes prompting expanding arrangements of WSNs to a larger degree. Potential applications for wireless sensor networks exist in an assortment of fields, including mechanical process checking and control, condition and living space observing, machine wellbeing checking, home automation, human services applications, atomic reactor control, fire recognition, question following and traffic control. Effective outline and usage of wireless sensor networks have turned into a hot zone of research as of late, because of the huge limit of sensor networks to empower applications associating the physical world with the virtual world.

Like living beings, an assortment of current devices and types of gear depends on the sensory information from this present reality around it. These sensory data comes is given by Wireless Sensor Networks (WSN), which includes a couple of minor sensor nodes to screen physical or natural conditions, for instance, temperature, vibration, weight, sound or development, and subsequently aggregately send these information to a central figuring structure, called the base station or sink. Diverse routing protocols administer the development of this data. Broadly the routing protocols can be named level based routing, various leveled based routing, and area based routing. Filter (Low Energy Adaptive Clustering Hierarchy) is a various leveled based routing protocol which utilizes irregular revolution of the nodes required to be the bunch heads to equitably convey energy utilization in the network. Sensor network protocols are very straightforward and consequently are exceptionally helpless to assaults like Sinkhole assault, Selective sending, Sybil assault, Wormholes, HELLO surge assault, Acknowledgment parodying, adjusting, replaying routing data. For instance. Selective sending and HELLO surge assault influences networks with grouping based protocols like LEACH.

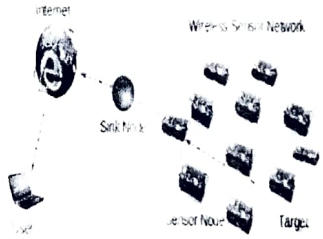

Figure 1.1 Wireless Sensor Network.

MG-leach: an enhanced leach protocol for wireless sensor network

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ABSTRACT

A wireless sensor network is made up of a large number of small sensor nodes with limited energy resources, which is a real problem for this network. In this article, we will study the ingestion of node energy in these networks at the routing level. In addition, we are modifying one of the most popular routing algorithms for data communication in the WSN: LEACH (Adaptive Hierarchy with Low Power Consumption). The modified version of the LEACH base version "MG_LEACH" uses an intermediate cluster header to transmit data, extend the network lifetime and send more data than the original protocol. Our proposed algorithm is simulated using MATLAB to verify the effectiveness of improving the lifetime of this network. The results of the simulation confirmed that the system was working better than the LEACH basic system and that the network life had been improved.

1. INTRODUCTION

Energy-efficient wireless sensor networks [1-3] as shown in Figure 1 are required for real-time embedded systems [4, 5] and applications using the Internet of Things [6, 7], but it is associated with many constraints, such as a computing power and limited battery, as well as an insufficient storage capacity. It is therefore essential to manage resources with caution. A problem of major importance for a WSN is to maximize network lifetime, which is related to the amount of energy stored in each node [8]. In most applications, the sensor nodes are equipped with small irreplaceable batteries of limited power capacity [9, 10]. In this context, various researches have been devoted to optimizing the energy consumption of the sensor node in order to increase the lifetime of the network [11], namely that it is composed of four main units, such as the calculation or processing, communication, perception and control of energy as shown in Figure 2.

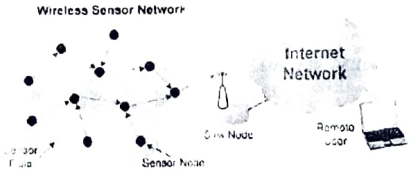

Figure 1. WSNs' communication architecture [12]

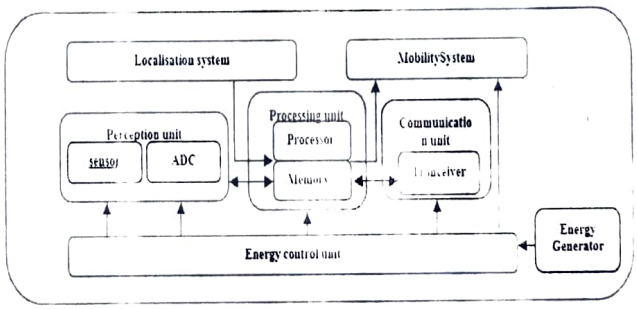

Figure 2. Architecture of a sensor node

A Survey of Neuromorphic Computing and Neural Networks in Hardware

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Abstract—*Neuromorphic computing has come to refer to a variety of brain-inspired computers, devices, and models that contrast the pervasive von Neumann computer architecture. This biologically inspired approach has created highly connected synthetic neurons and synapses that can be used to model neu-roscience theories as well as solve challenging machine learning problems. The promise of the technology is to create a brain-like ability to learn and adapt, but the technical challenges are significant, starting with an accurate neuroscience model of how the brain works, to finding materials and engineering breakthroughs to build devices to support these models, to creating a programming framework so the systems can learn, to creating applications with brain-like capabilities. In this work, we provide a comprehensive survey of the research and motivations for neuromorphic computing over its history. We begin with a 35-year review of the motivations and drivers of neuromor-phic computing, then look at the major research areas of the field, which we define as neuro-inspired models, algorithms and learning approaches, hardware and devices, supporting systems, and finally applications. We conclude with a broad discussion on the major research topics that need to be addressed in the coming years to see the promise of neuromorphic computing fulfilled. The goals of this work are to provide an exhaustive review of the research conducted in neuromorphic computing since the inception of the term, and to motivate further work by illuminating gaps in the field where new research is needed.*

Index Terms—neuromorphic computing, neural networks, deep learning, spiking neural networks, materials science, digital, analog, mixed analog/digital

I. Introduction

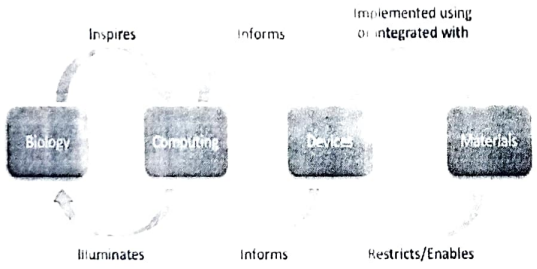

Fig. 1. Areas of research involved in neuromorphic computing, and how they are related.

research, as well as provide a starting point for those new to the field

Devising a machine that can process information faster than humans has been a driving forces in computing for decades, and the von Neumann architecture has become the clear standard for such a machine. However, the inevitable comparisons of this architecture to the human brain highlight significant differences in the organizational structure, power requirements, and processing capabilities between the two. This leads to a natural question regarding the feasibility of creating alternative architectures based on neurological models, that compare favorably to a biological brain.

Neuromorphic computing has emerged in recent years as a complementary architecture to von Neumann systems. The term neuromorphic computing was coined in 1990 by Carver Mead [1]. At the time, Mead referred to very large scale integration (VLSI) with analog components that mimicked biological neural systems as "neuromorphic" systems. More recently, the term has come to encompass implementations that are based on biologically-inspired or artificial neural networks in or using non-von Neumann architectures.

These neuromorphic architectures are notable for being highly connected and parallel, requiring low-power, and col-locating memory and processing. While interesting in their own right, neuromorphic architectures have received increased attention due

The Effects of Immigration On Welfare Across The EU: Do Subjective Evaluations Align With Estimations?

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Abstract

Among Europeans who wish to restrict immigration, one commonly cited rationale is the impact of immigration on national welfare states. This has been portrayed as a case of perceptions being misaligned with reality, but the existing literature does not provide clear data on either the fiscal impact of immigrants—especially when distinguishing intra-EU mobility from non-EU immigration—or the perceptions of the welfare impact of immigration among EU nationals. We explore the relationship between the estimated effects of immigration on European welfare states, and citizens' evaluations of those effects. Our analysis matches survey data with both novel and previously examined statistical estimates that distinguish between the effects of EU and non-EU immigrants. We combine multiple data sources to compare 28 EU and European Free Trade Association (EFTA) countries between 2002 and 2014. So, to what extent do actual, experienced effects of international mobility shape subjective perceptions? Our findings suggest that EU nationals' evaluations of immigrants' contributions to welfare are responsive to demographic measures of fiscal exposure from immigration, while much less responsive to economic measures. In other words, how many immigrants receive state benefits matters more than how much they receive. All else equal, immigrants are more likely to be seen as net contributors in countries with more working age immigrants and more generous governments. However, that relationship is reversed for countries with higher demographic fiscal exposure. Importantly, citizens' perceptions responded similarly to fiscal exposure from immigration whether it was from within or outside the EU.

Introduction

Research on attitudes toward immigration has long been divided by a debate over economics or symbolic politics as the leading drivers of public opinion. On one side, economically-oriented scholars have argued that anti-immigration sentiment stems from "realistic" notions

AN INTRODUCTION TO ECONOMICS AS A MORAL SCIENCE

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Keywords: Moral science; history of economic thought; Adam Smith; Thomas Malthus; J.S. Mill; Alfred Marshall

Abstract

Mainstream economists now consider their discipline to be a technical one that is free from ethical concerns. I argue that this view only arose in the twentieth century. In this paper I set out a brief history of economics as a moral science. First, I sketch the evolution of economics before Adam Smith, showing that it was generally (with the exception of the mercantilists) conceived of as a part of moral philosophy. Second, I present elements of the new interpretation of Smith, which show him as a developer of economics as a moral science. Third, I show that even after Smith, up to the beginning of the twentieth century, a number of leading economic theorists envisioned economics as a moral science, either in theory or in practice. Fourth, I sketch the decline of economics as a moral science. The key factor was the emergence and influence of positivism. Overall, I show that the current view of the detachment of economics from morals is alien to much of the history of the discipline.

Economics grew out of moral philosophy and eventually became one of the moral sciences. At some point the mainstream of economics became detached from the moral sciences and then from morality itself. I will argue that this detachment from moral concerns is not part of the tradition of economics. It emerged only during the twentieth century.

Introduction:-

There are two major reasons why economics has become detached from moral concerns. First, the natural sciences came to be seen as successful and the attempt was made to emulate that success in economics by applying the natural science methods, including mathematics, to economic phenomena (see Mirowski, 1989, p. 198). Second, the self-styled economic science came to adopt positivism, which ruled out moral issues from science itself (see Davis, 1991; Rothschild, 1993; Drakopoulos, 1997). These points will be demonstrated below.

It is a widely held view today among mainstream economists that economics is free from any ideological, theological, or moral philosophy. A commentator on the role of ethics in mainstream economics has stated:

The 'scientification' of economics ...has led to a separation of economics from its ethical roots. The 'mainstream economics' of the 20th century fully accepts this separation. Economic theory is seen as a positive science which has to analyse and to explain the mechanisms of economic processes. ... Important as ethical valuations ('ought'-statements) may be, they should not form part of the economist's research programme. (Rothschild, 1993, p. 16)

Does Defence Spending Stimulate Economic Growth in India?

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Abstract: The aim of present is to reinvestigate the effect of defence spending on economic growth using Zivot and Andrews (1992) and Lee and Strazicich (2003) structural unit root tests and ARDL bounds testing approach to cointegration in augmented version of Keynesian model for Indian economy. Our analysis confirmed long run relationship between the variables and, results indicated positive effect of defence spending on economic growth (also negative impact after a threshold point). Investment and trade openness stimulate economic growth while economic growth is inversely affected by interest rate. Granger causality analysis showed bidirectional causal relationship between defence spending and economic growth as probed by variance decomposition approach.

Keywords: Defence Spending, Economic Growth, Cointegration

Urbanization and Development

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Abstract

The level of urbanization and economic development are positively related. An increase in concentration of population at one place yield many positive externalities increasing productivity and efficiency. The relationship between two is extensively researched in many cross country studies and cross country income differentials are examined vis-a-vis the level and growth of urbanization. The empirical evidences suggested that relationship between urbanization and development changes with changes in the stage of development. India is a comparatively less urbanized country but still around 60.0 percent of total GDP is generated in urban areas. The objective of the present paper is to analyze the relationship between growth in level of urbanization and economic performance in last three decades in India. The paper found that present level of state per capita income has positive correlation with level of urbanization. That is state with high per capita income also has higher level of urbanization and vice-versa. With regard to the relationship between growth of per capita income and growth of level of urbanization, the relationship is found insignificant during decades of 1980 and 1990 but is significant during the last decade of 2000. The paper concludes that association between urbanization and development is getting strong with time.

Keywords - *Urbanization, Development, Urbanization and Growth*

Identification of Major Soil Nutritional Constraints in Vertisol, Inceptisol and Entisol from Ambajogai Tahsil of Beed District

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ABSTRACT:- *The study was conducted on Vertisols, Inceptisols and Entisols located in Ambajogai tahsil of Beed district and the purpose to evaluate the major soil nutritional constrains for addressing fertility indices of soil. For this purpose 140 representative soil samples were collected at 0-20 cm depth from different villages of Ambajogai tahsil. These soil samples were analyzed for physico-chemical properties and status of available P, K, S, exchangeable Ca, and Mg. These soil samples were analyzed for soil properties and fertility status of soil. The soils under the study were neutral to alkaline in reaction, safe in limit of electrical conductivity and moderately calcareous to calcareous in nature. These soils were low to high in content of organic carbon. The soil samples were low in available N and P and high in available K. While, the exchangeable Ca and available S were in sufficient quantity, while exchangeable Mg ranged from low to high. However, the organic carbon showed positive and significant correlation with available N, P, K pH and $CaCO_3$ showed negative. According to nutrient index value of the soils of Ambajogai tahsil were found in low category for available N and P, while high with respect to available K, S and exchangeable Ca, whereas medium for exchangeable Mg.*

Keywords:- Soil properties, nutrient index, Ca, Mg, S.

I. INTRODUCTION

To ensure sustainability of our production system, it is essential to understands oil as valuable natural resource (Sehgal, 2002). The major nutrients govern the fertility of the soils and control the yield of crops. Soil fertility evaluation of an area or region is an important aspect in context of sustainable agricultural production. In present era of technological advancement in agriculture it is of immense interest to study the fertility status of soils. Thus, it is necessary to have information on availability of major of the area (Mahesh Kumar *et al.* 2011).Soil fertility must be periodically estimated because there is continuous removal of macro nutrients by the crop intensively grown in every crop season. Due to continuous cropping system for periods without adequate supply of additional amounts of nutrients, there is every possibility of deficiencies of essential nutrients in due course of time. For this reason, recent interest in evaluating the fertility status for maintaining soil quality of our soil resources has been stimulated by increasing awareness that the soil is critically important component of earths biosphere, functioning not only in the production of food and fiber but also in the maintenance of local, regional and worldwide environmental quality (Dadhwal *et al.* 2011).Therefore, a comprehensive study was undertaken to know the fertility status of soils of Ambajogai Tahsil of Beed district

II. MATERIALS AND METHODS

Description of study area: The study area belongs to Ambajogai Tahsil of Beed district is located between 18^0 28" to 19^0 28" North altitude and 74^0 54" to 76^0 57" East latitude. The geographical area of the district is 10615.3 sq. km and it is 3.44 per cent of Maharashtra state. The annual rainfall of this district is in between 458 mm and 814 mm. The maximum and minimum temperature of this district is 40.40^0 C and 17.68^0 C. respectively. The elevation is 530 m from mean sea level. Beed is located on the Deccan Plateau of south central Maharashtra, on the banks of 'Bendsura' a sub-tributary of Godavari River. It is situated in the ranges of Balaghat.Under the study area soils are developed from basaltic and metamorphic rocks of varying geological age and also on alluvium derived from such rocks. These soils are scientifically known as "Mixed Montmorillonitic Hyperthermic Typic Chromostert .The study area comes under zone of assured rainfall zone where tropical climatic conditions often exists (Hot Dry Subhumid Agro ecological Region).

, Department of Soil Science and Agricultural Chemistry,

Collection of soil samples: In order to studies on assessing nutrient index and fertility status of Vertisol, Inceptisol and Entisol from different villages of Ambajogai Tahsil of Beed District, one hundred and forty representative surface (0-20 cm) soil samples were collected, ground and passed through <2 mm sieve and stored in properly labeled plastic bags and characterized for physicochemical properties of soil. The soil pH, EC, Organic Carbon, available K, Exchangeable Ca and Mg were estimated by the standard procedures as described by Jackson (1973). The available N was analyzed by using alkaline potassium permanganate (Subbiah and Asija, 1956). Available sulphur was determined by using 0.15% $CaCl_2$ solution(Williams and Steinberg, 1969). The soil nutrient index was calculated according to the procedure given by Parker (1951). The whole data was subjected to statistical analysis by the method described by Panse and Sukhatme (1985).

STUDY AND ANALYSIS OF MULTI-DIMENSIONAL HILBERT SPACE FILLING CURVE AND IT'S APPLICATIONS–A SURVEY

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Abstract

A map has to be designed to show the directions and the objects present in a specific area. So, it is necessary to visit each and every points of that area. For that a Space Filling Curve can be used. SFC can visit all the points present in a multi-dimensional data base. A spatial query can select geographical features based on location or spatial relationship, and a Nearest Neighbor search can be used to find the nearest object of a query object.

Keywords

Space filling curves, Hilbert space filling curves, spatial query, k-nearest neighbor

1. INTRODUCTION

The multidimensional representation is very important, because it is used to represent a object in a multidimensional space. Space filling curve Maps a multidimensional data into one dimensional data. [1] For which every element present in a specific area can be viewed in a one dimensional figure. At that situation it will be easy to recognize which element is at which position, or near er to which element or object. A space filling curve visits each and every points present in a specific area. So that it will be easy to know that which elements are present in that area? It visits each point only once so there will be no chance of repetition. Each thing will appear only once. In 1891 a German mathematician David Hilbert described about a space filling curve. [2] After him that was named as Hilbert Space Filling Curve (HSFC). Nearest neighbor search, as the name specifies means that to search the nearest neighbor of an element. For finding out the closest point of a query point. the nearest neighbor is an optimization method. [3][4] Nearest neighbor search is also known as proximity search, similarity search or closest point search. Query points are the spatial query points. [3][4]

Spatial query points are the particular type of data-base query points. These spatial query points are supported by the geographical databases or the spatial database. This describes spatial relationships between the geometries like points lines and polygons.

Observationaldiscretelinesforthedetectionofmoving vehiclesinroadtrafficsurveillance

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[2](Computer Science & Engineering, Capital Engineering College)

ABSTRACT

The paper deals with the development of mathematical models and algorithms for video processing indigital video surveillance systems to detect moving objects. The model and algorithm can be applied invideosurveillancesystemstoidentifymovingobjectsonasurveillancearea.Thereductionofthecalculations for the segmentation of video is considered and describes the algorithm of Observationaldiscretelinesforthedetectionandtrackingofmovingobjectsisproposedinthisarticle.

KEYWORDS

Video surveillance system, Video analysis, Visual monitoring, Motion detection, Tracing, Observationdiscretelines

1. INTRODUCTION

This time the relevant tasks are the collection, analysis and processing of information on roadsafety, safety control, traffic on city streets and highways, road accidents and their study. Alsorelevant is the problem of determining the speed of traffic on motorways, registration of motorvehiclesatintersections,postsandvehicleregistration,cartrafficandfrequentroadaccidents.Soimportantisthecreationandimplementationofvideosurveillancesystemsinstalledinroadsandintersections.

For the video surveillance system is an actual resolution of contradictions between the quality ofthe generated image and hardware of existing channels of communication and data storage. Inspite of the high capacity, the modern hard disks are not sufficient for storing large amounts ofinformation for a long time, as it should be according to the specifications. Traditionally thiscontradictionisresolvedbyvideocompressionwithanoticeabledecreaseintheirqualityandlossofinformation.Toimprovetheefficiencyofvideosurveillancesystemsneedtodevelopmethodsfor video data compression without loss of information about the object of interest for the long-term storage and transfer in real time, high-quality images via communication channels withlimitedbandwidth[1].

Video moving object leads to the appearance of two phases-phase of adaptation to the currentcamera angle shooting and maintenance of objects of interest. The fixed camera shot scene withlittle changing background (relative sequence) with moving objects is of great practical use inobservationsystems(maintenanceofvehicles,people), securitysystems,etc.

A Comprehensive Study On Potential Research Opportunities Of Bigdata Analytics To Leverage The Transformation In Various Keydomains

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ABSTRACT

Companies, organizations and policy makers shake out with flood flowing volume of transactional data,accumulatingtrillionsofbytesofinformationabouttheircustomers,suppliersandoperations.Theadvanced networked sensors are being implanted in devices such as mobile phones, smart energy meters,automobiles and industrial machines that sense, generate and transfer data to multiple storage devices. Infact, as they go about their business and interact with individuals, they are producing an incredible amountof fatigue digital data. Social media sites, smart phones, and other customer devices have allowed billionsof individuals around the world to contribute to the amount of data available. In addition the extremelyincreasing size of multimedia data has also take part a key role in the rapid growth of data. The technologyof high-definition video creates more than 2,000 times as many bytes as necessary to store as normal textdata. Moreover, in a digitized world, consumers are leaving enormous amount of data about their day-to-day communicating, browsing, buying, sharing, searching and so on. As a result, it evolved as a big dataand in turn has motivated the advances in big data analytics paradigms, endorsed as a basic motivationfactorfor thepresentresearchers.

The authors in the present paper conduct a comprehensive study to explore the impact of big data analyticsinkeydomainsnamely HealthCare(HC),RetailIndustry(RI),PublicGovernance(PG),PubicSecurity &Safety(PSS)andPersonalLocationTracking(PLT).Initially,thestudylooksatthevariousinsightsofdatasourcesalongw iththeircharacteristicsineachdomain.Laterit presentsthehighlyproductiveandcompetitivebigdata applications with innovative big data technologies. Subsequently, the study showcases the impact ofbig data on each domain to capture value addition in its services. Finally, the study put forwards manymoreresearchopportunitiesasallthesedomainsdifferintheircomplexityanddevelopmentinthecontextofbig dataanalytics.

KEYWORDS

BigData,BigDataAnalytics,BigDataTechnologies,BigDataApplications

A COMPARATIVE ANALYSIS OF PROGRESSIVE MULTIPLE SEQUENCE ALIGNMENT APPROACHES USING UPGMA AND NEIGHBOR JOINBASED GUIDE TREES

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ABSTRACT

Multiple sequence alignment is increasingly important to bioinformatics, with several applications rangingfrom phylogenetic analyses to domain identification. There are several ways to perform multiple sequencealignment,animportantwayofwhichistheprogressivealignmentapproachstudiedinthiswork.Progress ive alignment involves three steps: find the distance between each pair of sequences; construct a guide tree based on the distance matrix; finally based on the guide tree align sequences using the conceptof alignment profiles. Our contribution is in comparing two main methods of guide tree construction in termsof both efficiency and accuracy of the overall alignment: UPGMA and Neighbor Join methods.Ourexperimental results indicate that the Neighbor Join method is both more efficient in terms of performanceand moreaccurateinterms of overall costminimization.

KEYWORDS

Progressive MSA,Guide Tree,Profiles,Pair-wiseDistance& Dynamic Programming

1. INTRODUCTION

The traditional pairwise sequence alignment problem in its utmost generality is to find anarrangement of two given strings S and T, such that the arrangement yields information on therelationshipbetweenSandT.suchastheminimumnumberofchangestoSthatwouldtransformS into T.In the context of DNA sequences, which can be viewed as strings from the 4 letteralphabet{A,C,G.T},thesechangesmayrepresentmutationevents,sothatthealignmentsoughtyie lds important evolutionary information [15].Similarly, the pairwise sequence alignmentproblem can be generalized to the *multiple* sequence alignment problem to yield information onthe relatedness of multiple sequences.Applications of the multiple sequence alignment (MSA)problem for DNA sequences include phylogenetic analysis, domain identification, discovery ofDNA regulatory elements, and pattern identification. Additionally, MSA applications for proteinsequences also includes protein family identification and structure prediction.This work isconcernedwithapproachestomultiplesequencealignmentinthecontextofDNAsequences.

Generally, aligning two sequences is straightforward via dynamic programming. But pairwisealignmentisinsufficientformanyapplicationsinwhichtherelationshipamongseveralsequen cesis sought.Moreover, it is infeasible to naturally extend the dynamic programming approach thatworks for pairwise sequence alignment directly to multiple sequence alignment when there aremore than three sequences to align.Unfortunately, multiple sequences alignment is NP-hardbasedonSP(sum-of-pairs) scores[1].Therefore,heuristicsarecrucialtoMSA.

DECENTRALIZED SUPERVISION OF MOBILE SENSOR NETWORKS USING PETRINET

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ABSTRACT

In semiautonomous mobile sensor networks, since human operators may be involved in the control loop,particular improper actions may cause accidents and result in catastrophes. For such systems, this paperproposes adecentralized supervisory controlsystem to accept or rejectthe human-issued commands sothat undesirable executions never be performed. In the present approach, Petri nets are used to model theoperated behaviors and to synthesize the decentralized supervisory system. The presented technique couldbe appliedtolarge-scaleandcomplicated wirelessmobilesensor networks.

KEYWORDS

DistrictEventSystem,Petrinet,SensorNetwork,SupervisoryControl

1. INTRODUCTION

Nowadays,sensornetworks(SNs)havebeenusedindifferentareassuchasnetworking,embedded systems, pervasive computing, and multi agent systems due to its wide array of real-worldapplications[1].Inparticular,wirelesssensornetworks(WSNs)withtheabilityofsensing,storing and processing data can detect and monitor any different physical conditions such astemperature,pressure,sound,etc.Moreover,WSNscanbedeployedinextremelyharshenvironments andhostileregions(oceanfloor,activevolcanoes,mines,forests)[2,3]
.Furthermore, they are used in wide variety of fields such as control systems, health monitoring,bio-
medicalapplications,detectpollution,detectsmoketofirealarm,military(battlefieldsurveillanceandtroopmovements),burglaryandsoon.[4]

Because of time consumption and hardship of configuration of WSNs, mobile sensor networks(MSNs)areusedtosupportself-
configuration,adaptability,scalability,andoptimalperformance.Thesefeatures,achievedbychanging networktopology,canreacttotheeventsofenvironmentorchangethemissionplanning[5].

In some of MSN systems human operators use semiautonomous robots for charging the staticsensors,repairing replacing or removing the static sensors, maintaining network coverage forboth sensing and communication, and investigating condition of launching an alert by severalstatic sensors [6] (Fig. 1). In such cases, human errors in sending a command to robots have asignificant influence on system. Therefore, the use of a controller to control and filter thecommands received from the human is a good idea to manage these "human-in-the-loop" errorsanditimprovestheoverallreliabilityofthesystem.Thiskindofcontrolleriscalledsupervisor

EYE SCRUTINIZED WHEEL CHAIR FOR PEOPLE AFFECTED WITH TETRAPLEGIA

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ABSTRACT

Nowadays the requirement for developing a wheel chair control which is useful for the physically disabledperson with Tetraplegia. This system involves the control of the wheel chair with the eye movement of theaffectedperson.Statistics suggestthatthere are230,000casesofTetraplegiainIndia.Oursystemhereistodevelo pawheelchair whichmake the lives ofthese people easier andinstigate confidence tolive inthem. We know that a person who is affected by Tetraplegia can move their eyes alone to a certain extentwhich paves the idea for the development of our system. Here we have proposed the method for a devicewhere a patient placedon the wheel chair looking in a straight line at the camera which is permanentlyfixedin the optics, is capable to move in a track by gazing in that way. When we change the direction, thecamerasignalsaregivenusingthematlabscripttothemicrocontroller.Dependsonthepathoftheeye,themicroco ntrollercontrols thewheelchair in all directionandstopsthemovement. Ifthereisanyobstacle to be found before the wheel chair the sensor mind that and it stop and move in right directionimmediately. The benefit of this system is too easily travel anywhere in any direction which is handled byphysicallydisabledpersonwithTetraplegia.

KEYWORDS:

Daugman's,Eyemovement,Electronicwheelchair,Microcontroller,Tetraplegia

1. INTRODUCTION

The spinal cord injury occurs which means the failure of sensation or movement to some extent inthe legs, bowel, bladder, and sexual region is referred as Tetraparesis .Paraplegia is similar butdoes not affect the arms. The loss is usually sensory and motor, which means that both sensationand control are lost. Tetraparesis, on the one-time hand, which means muscle failing affecting allfour limbs. It may well be flaccid or spastic. Tetraplegia is root cause by damage to the brain orthe spinal cord at a high level in particular, spinal cord injuries secondary to the cervical spine .The injury, which is identified as a lesion , causes sufferers to lose biased or total function of allfour limbs, significance the arms and the legs. Tetraplegia is defined in many ways , usuallyaffectsarmmovementsupplementarysothanaothercaninjury.Ontheotherhand,alltetraplegics have some kind of finger dysfunction. For person with this disability, many differentkindofelectricalandroboticwheelchairshavebeendesigned.Thesepeoplehavetroublestousea predictablewheelchair.Acurrentclinicalreview indicatedthat9%–10%ofpatientswhoreceived power wheelchair training establish it tremendously complicated or impossible to use itfortheir actionsof dailylivelihood,and40%of patientsfoundthedirection-findingtasksdifficult

A SMART, LOCATION BASED TIME AND ATTENDANCE TRACKING SYSTEM USING ANDROID APPLICATION

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ABSTRACT

Overtheyearstheprocessofmanualattendancehasbeencarriedoutwhichisnotonlytimeconsumingbut also provides erroneous result. Automated time and attendance monitoring system provides manybenefits to organizations. This reduces the need of pen and paper based manual attendance trackingsystem. Following this thought, we have proposed a smart location based time and attendance trackingsystemwhichisimplementedonandroidmobileapplicationonsmartphonereducingtheneedofadditional biometric scanner device. The location of an organization has a specific location which can be determinedby the GPS. Each employee's location can be determined by the GPS using smart phone. This location isdefined asa keyof timeand attendancetrackinginour paper.

KEYWORDS

Location-basedservice,GPS,timeandattendancesystem,sendingSMS,androidapplications.

1. INTRODUCTION

Nowaday,attendancemonitoringandworkinghourcalculationisveryessentialforalmosteveryinstitution or organization. Typically there are two types of attendance system available. i)Manual and ii) Automated. Manual system involves the use of sheets of paper or books in takingattendance where employees fill out and managers oversee for accuracy. This method could beerroneous because sheets could be lost or damaged. Also the extraction of relevant data and themanualcomputationofworkingtimeisverytimeconsuming.Ittakesanextraemployeetocheckforth eattendanceandtimingofotheremployeeswhichincludescostoverheadfortheorganizationaswell[1].

Ontheotherhand,automatedtimeandattendancesystemsimpliestheuseofelectronictags,bar-codebadges,magneticstripecards,biometrics(hand,fingerprint,orfacial),andtouchscreens[2]in place of paper sheets. In these aforementioned techniques, employees touch or swipe in orderto provide their identification and also the entering and leaving time to calculate working hours.Theprovidedinformationarerecordedandautomaticallytransferredtoacomputerforprocessing . Using an automated system for time and attendance monitoring reduces the errors ofmanual system and conserve optimal amount of time. But these automated systems requireheterogeneousdevicesneedtobelocatedintheorganizationwhichiscostly.

Inthispaper,consideringthewidepopularityofsmartphones,weintroducetheuseofsmartphone for this time and attendance tracking purpose. We have proposed a location basedsmarttimeandattendancetrackingsystembasedontheconceptofwebserviceswhichis

A CONCEPTUAL MODEL FOR VIRTUAL CLASS ROOM MANAGEMENT

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ABSTRACT

Classroom management refers to the actions and strategies that teachers use to maintain order in aclassroom. A Virtual classroom is an asynchronous-based online learning environment that delivers coursematerialstolearnersandprovidescollaborationandinteractionusinganasynchronous-basedforumasthe main platform to support the learners' independent study. In a physical classroom there is physicalcontact between the students and the instructor. This makes it easy for the instructor to enforce rules thatare intended for effective classroom management This physical contact is elusive in a virtual classroomand yet effective classroom management is desired. Virtual classroom is useful to the students for revisionexercise; as a backup for physical classroom contact. This paper proposes a conceptual model usingexistingvirtualtooltobringaboutaneffectiveclassroommanagementstrategiesinaVirtualclassroom.

KEYWORDS:

VirtualClassroom ClassroomManagement Onlinelearning

1. INTRODUCTION

The primary purpose of teaching is to impact knowledge. However, two factors can facilitate thisobjective. One is having a simplified and well explained course material and the other is ensuringits effective delivery. A well-managed classroom will guarantee effective delivery. Many workshave been done in the area of preparing course material but less has been done in effective virtualclassroom management. Virtual classroom is a product of necessity. It evolved out of the need tocater for the high demand for education and learning in the twenty-first century and succumbingseveral challenges associated to traditional classroom learning. It offers a range of possibilitiessuch as personalization, studying where and when the students can. This paper is divided into fivesections. The first section describe the concept of virtual classroom, its benefits and opportunities.Thenextsectiondiscussestheintricaciesofclassroommanagementwhilethelastsectionexplainedthe developed modelandprovidestip onitsimplementation.

2. VIRTUALCLASSROOM

A virtual classroom is an online learning environment that contains all required course materials.A virtual classroom as described by Hsu, Marques, Khalid Hamza and Alhalabi (1999) is alearningsystemthatprovidesthesameopportunitiesfortheteachingandlearningprocess,

ADDING NTFS SUPPORT TO ANDROID OPERATING SYSTEM VIA KERNEL

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ABSTRACT:

Android is a nascent mobile operating system based on the Linux kernel that is developed by Google but lacks support for disks partitioned with the NTFS. Currently in the Google Play Store there are some third party applications to provide NTFS support to Android OS. But the main disadvantage of such applications is that the phone needs to be rooted (flashed) which may be tedious for a lay user and in many cases may void the device's warranty. And above all, a custom ROM needs to be installed to avail the NTFS functionality.

This paper covers a technique to provide native support for NTFS (New Technology File System) in the Android operating system by avoiding the rooting process. Hence to use NTFS-SD card or NTFS HDD we won't require any third party applications to perform basic read/write operations. This is implemented with the help of the Virtual File system layer (VFS) which is a subsystem of the kernel that implementsthe file and the file system-related interfaces provided to user-space programs. The NTFS will rely on theVFS layer to enable programs to use standard UNIX system calls to make basic operations like read/writeas well as advanced features which NTFS has.

KEYWORDS:

$MFT, $LOGFILE, DENTRY, FAT, LKM, INODE, NTFS, SUPERBLOCK, VFS

1. INTRODUCTION

A. The Android Scenario

As of year 2012, approximately 500 million Android devices had been activated with 1.3 million activations per day. In early 2013, at Google I/O event, they announced that there had been 900 million Android device activations setting a new record. Today android has the largest installed

FUNCTION PROJECTIVE SYNCHRONIZATIONOF NEW CHAOTIC REVERSAL SYSTEMS

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ABSTRACT

In the present work, Lyapunov stability theory, nonlinear adaptive control law and the parameter update law were utilized to derive the state of two new chaotic reversal systems after being synchronized by the function projective method. Using this technique allows for a scaling function instead of a constant thereby giving a better method in applications in secure communication. Numerical simulations are presented to demonstrate the effective nature of the proposed scheme of synchronization for the new chaotic reversal system.

KEYWORDS

Function projective synchronization, Lyapunov stability theory, chaotic system, new chaotic reversal system.

INTRODUCTION

The chaotic dynamics observed only in nonlinear systems have been largely defined by oscillations which are sensitive to initial conditions [1]. Lorenz and Rossler systems are pioneering simple chaotic systems discovered with a lot of interesting properties that can model physical systems [1]-[2]. This relatively new dynamical behaviour has since been discovered in other disciplines such as engineering, science and economics. In order to understand fully most nonlinear phenomenon in nature through interaction of systems, the control and synchronization of chaotic oscillations is vital.

The process of controlling and synchronising chaotic systems has attracted much attention since its discovery in less than twenty years [3]. The work of Pecora and Caroll [4] generated a wider research in synchronization since it entails the synchronization of two identical chaotic systems with different initial conditions.A number of methods of synchronization have been proposed since the pioneering work of Pecora and Caroll such as complete synchronization, generalized synchronization, phase synchronization, lag synchronization, adaptive synchronization, time-scale synchronization, intermittent synchronization, projective synchronization and function projective synchronization [5]-[9]. Function projective synchronization deserves much attention since it has been found applicable and better in secure communication.

Function projective synchronization implies that the master and slave oscillators could be synchronized up to a scaling function or like a constant in the projective synchronization. The

CLOUD COMPUTING – PARTITIONING ALGORITHM AND LOAD BALANCING ALGORITHM

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ABSTRACT

Tremendous usage of internet has made huge data on the network, without compromising on the performance of network the end-users must obtain best service. As cloud provides different services on leasing basis many companies are migrating from their own Infrastructure to cloud this migration should not compromise on performance of the cloud. the performance of the cloud can be improved by having excellent load balancing strategy such that the end user is satisfied. The paper reveals the method by which a cloud can be partitioned and a study of different algorithm with comparative study to balance the dynamic load. The comparative study between Ant Colony and Honey Bee algorithm gives the result which algorithm is optimal in normal load condition also the simplest round robin algorithm is applied when the partition are in Idle state

KEYWORDS

Cloud, central controller system (ccs), partition status collector

1. INTRODUCTION

Due to versatile use of internet cloud computing is becoming the back bone of soft computing. When a server is overloaded the arriving job should be diverted to the server which is in normal (underloaded) state such that there will be maximum utilization of the available resources. Cloud computing has given the IT sector new direction for utilization of resources in a organized manner as a user pay for usage. Cloud computing is a combined technique from the Grid Computing , utility computing and autonomic computing.

Cloud Architecture can be alienated into 2 section

i. Front end Client computer or application to connect the back end
ii. Bach End servers, data center or data storage unit

The two are connected by the network called as Internet. There is a central manger to monitor the traffic for efficient performance of the system. The architecture for balancing load depends on whether the system is for static or dynamic as the static system doesn't store the current status of the system, it is immaterial for its design in disparity to this the dynamic system accumulate the current system information and works according to what is the current status of the system.

ISSUES IN IMPLEMENTATION OF PARALLEL PARSING ON MULTI-CORE MACHINES

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ABSTRACT

The advent of multi-core architecture has highly influenced the area of high performance computing. Parallel compilation is the area which still needs significant improvement by the use of this architecture. Recent research has shown some improvement in lexical analysis phase. But it is difficult to implement the same technique in parsing phase. This paper highlights some issues related to implementation of parallel parsing on multi-core machines.

KEYWORDS: Syntax Analysis, Parallel Parsing, Multi-core Machines.

I. INTRODUCTION

Compiler is a program that translates a source language into target language. The structure of a compiler is composed of several phases. The first phase is lexical analysis or scanning. This is the only phase which interacts with original source code written by the programmer. It takes stream of characters as input and generates tokens of the form {token name, attribute value} as output. The task that does this is called lexical analyzer or scanner. Lex [1] and Flex [2] are two popular tools for automatically generating lexical analyzers from specifications.

The information about tokens is saved in a special data structure called symbol table. These tokens are then forwarded to the next phase i.e. syntax analysis also known as parsing. Parsing is an important phase in compilers. This phase takes the stream of tokens as input produced by lexical analyzer and converts them into parse trees. A parse tree is a structural representation of grammar being parsed. The tool which performs this task is known as parser. Parser can be automatically generated by YACC [3] and Bison[4] which take grammar specifications as input and produce parser.

Interaction of the lexical analyzer and the syntax analyzer is depicted in Fig. 1. The details of various phases of a compiler can be found in popular texts [5][6][7][8].

EXTENDED DISTRIBUTED UML-BASED PROTOCOL SYNTHESIS METHOD

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ABSTRACT

Synthesizing specifications for real time applications that involve distributed communication protocol entities from a service specification which is modeled in the UML state machine with composite states, is a time-consuming and labor-intensive task. Existing synthesis techniques for UML-based service specifications do not account for timing constrains and, therefore, cannot be used in real time applications for which the timing constraints are crucial and must be considered. In this paper, we address the problem of time assignment to the events defined in the service specification modeled in UML state machine. In addition, we show how to extend a technique that automatically synthesizes UML-based protocol specifications from a service specification to consider the timing constraints given in the service specification. The resulting synthesized protocol is guaranteed to conform to the timing constraints given in the service specification.

KEYWORDS

Protocol synthesis, protocol specification, service specification, timing constraints, UML state machine

1. INTRODUCTION

A protocol can be defined as an agreement on the exchange of information between communicating entities. A full protocol definition defines a precise format for valid messages (a syntax), procedure rules for the data exchange (a grammar), and a vocabulary of valid messages that can be exchanged, with the meaning (semantics).

In protocol design, interacting entities are constructed to provide a set of specified services to the service users. While designing a communication protocol, semantic and syntactic errors may exit. Semantic design errors cause the provision of incorrect services to the distributed protocol users. Syntactic design errors cause the protocol to deadlock.

A communication system is most conveniently structured in layers. The service access point (SAP) is the only place where a layer can communicate with its surrounding layers or service users. The layer can have several SAPs. The communication between the layer and its surrounding layers is performed using service primitives (SPs). The SP identifies the type of event and the SAP at which it occurs.

From the user's viewpoint (high level of abstraction), the layer is a black box where only interactions with the user—identified by the SPs—are visible. The specification of the service provided by the layer is defined by the ordering of the visible SPs and by the timing requirements between the SP occurrences. This specification is called service specification (S-SPEC). At a

FPGA BASED HEARTBEATS MONITOR WITH FINGERTIP OPTICAL SENSOR

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ABSTRACT

The heart is an organ of human body which has a vital function, small abnormalities can have a big impact on the performance of the body. Heart disease is the number one cause of death in the world. Examination of the heart can be detected from blood flow in the fingertips, in order to obtain information about the number and rhythm of the heartbeat. This research aims to design and implement the FPGA board to monitor the heart rate with optical sensors. The results of this study are expected to facilitate the patient's medical team or independently in detecting heart health. The series is composed of blocks of sensors, signal conditioning block, the block pulse counter, block timer 10 seconds and blocks the viewer. Based on the test results of the 10 respondents with a variety of age and gender, has built a tool that the percentage error of 3.94%.

KEYWORDS: *Heartbeat monitor, Xilinx ISE Webpack, FPGA, optical sensor*

1. INTRODUCTION

The heart is an organ of human body which has a vital function, small abnormalities can have a big impact on the performance of the heart kita.Penyakit body is the number one cause of death in the world. Based on data from the World Health Organization (WHO), cardiovascular disease has reached 29% in the percentage of deaths in the world and 17 million people die every year due to heart and blood vessel disease throughout the world [3].

The development of medical instrumentation systems is growing rapidly along with the need for medical personnel to diagnose a patient and a medical examination. One medical instrumentation used for the examination of the heart is Electrocardiograph (ECG). ECG is a medical instrument that is commonly used by the medical team to detect heart rate and rhythm [6]. EKG can not be used independently by patients to detect a patient's pulse. In addition to the expensive costs for the procurement of ECG, ECG devices also require special skills to operate.

Along with the requirement in the design and manufacture of medical devices, digital electronics design technology is developing very rapidly, both in terms of hardware and software. Xilinx is one manufacturer that produces equipment or tools for modeling the design of digital systems. One product is in the form of a kit module board FPGA (Field Programmable Gate Array). FPGA is a programmable device that is composed of large modules independent logic that can be configured by the user who is connecting through the canals of programmable routing [4].

WELDING AND EXAMINE IMPACT OF MACHINE TURNING SPEED ON TENSILE PROPERTIES AN DISSIMILAR ALUMINIUM ALLOYS

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ABSTRACT

Present work consist of Dissimilar aluminum plates of 6061 and 2024 welded by utilizing vertical processing machine in Friction Stir Welding (FSW) process request to research mechanical miniaturized scale hardness Properties. All out 9 sets of weld joints are manufactured by fluctuating rotational speed of 900, 1120,1400 rpm and utilized three Geometrical instruments of Square tighten funnel shaped, tighten triangle with shifting tilt edge of 10,1 50 20 these parameters vries by utilizing Taguchi L9 symmetrical exhibit. Mechanical properties metallographic and mechanical tests were completed on the welded territories of the parts. Hardness profile and tractable trial of the joints tentatively surveyed. As a metallurgical examination, Optic Microscopy is utilized for base and weld zones. All inclusive Testing Machine has been utilized for leading ductile and bowing tests. Warmth treatment process has been carried on the examples.

Key words: Friction stir welding, Aluminum alloy,Microstructure; Tensile properties;

1. INTRODUCTION

The 6061-T6 & 2024-T6 Aluminum alloys are widely employing in numerous promising fields of aero-space and marine applications in the construction of frames, pipelines and storage tanks. The dissimilar Aluminum alloys welding is deem as an difficult compared to similar Aluminum alloys welding process, due to dissimilarity in chemical composition, physical, mechanical and thermal properties of the parent metals [1-3]. In fusion welding, joining of dissimilar Aluminum alloys is tedious. Recently, Friction stir welding (FSW) process is extensively utilizing for

HOME ENVIRONMENT MONITORING SYSTEM USING IOT BASE TOOL

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ABSTRACT

Today, as an ever-increasing number of families have working individuals, homes are in effect left unmonitored for a few hours every day. There is no arrangement for crisis cautions, robotization systems or observing offices for the home condition conditions. There is colossal potential for mechanical improvement toward this path particularly in view of the progression in the Internet of Things (IoT) [1]. It is conceivable to screen home condition conditions utilizing sensors to distinguish temperature, stickiness, light, stable and gas focuses noticeable all around. It is likewise conceivable to screen altered circumstances, for example, water tanks being full, dustbins being over-burden and fridges left open. The need of great importance is a coordinated answer for have the option to screen nature conditions from a solitary portable application [2]. Some level of mechanization to control the home condition conditions alongside warnings if there should be an occurrence of crisis circumstances, for example, gas spills additionally should be a piece of this single arrangement. This contextual investigation paper is taken to give a solitary coordinated answer for the previously mentioned issue of being not able to keep homes checked for a few hours in the day. The idea is tweaked to screen these conditions and advise the client on his versatile application remotely.

Keywords: Integrated Development Environment, Internet of Things, Java Development Kit, Light Emitting Diode, Model View Controller, Platform as a Service.

FRICTION STIR WELDING OF ALUMINIUM ALLOY WITH A PRODUCT SANDWICHED DISAINCT

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ABSTRACT

The multi-lap joint has been made between the two sheets of the aluminum combination Al5052-H32 while an unadulterated copper foil was set in the middle of, utilizing the procedure of grinding mix welding (FSW). The instrument material was chosen to be M2 HSS, considering its warmth resilience limit and high quality. To diminish the quantity of investigations performed, Taguchi technique's L9 approach was brought into utilization. The test for extreme shear quality was carried on for all the examples. If there should arise an occurrence of AlA-Cu-AlA welds, it was discovered that the ideal estimations of a definitive rigidity were acquired for the parameters' apparatus turn speed at 800 rpm, cross speed at 5 mm/min and the dive profundity being 0.2 mm. It was likewise added as far as anyone is concerned that the AlA-AlA joint had more prominent estimation of a definitive shear quality when contrasted and AlA-Cu-AlA joint while working with the parameters for the ideal extreme shear quality for the previous. It was seen that the clipping additionally assumed a huge job while eroston mix welding the meager sheets and foil.

Key words: Friction Stir Welding, Thin Sheets, Dissimilar Material Welding, Solid State Welding Process efficiency.

1. INTRODUCTION

The FSW process is a kind of solid state welding process and hence, for the joint to be formed, the material need not reach its melting point [1-2]. Instead, the temperature just enough for plasticizing the material is required to be maintained while the force applied by the tool in downward direction with the simultaneous rotational movement of tool intermixing the base materials creates a joint [3,4]. The heat is generated by the frictional force between the rotating tool and the surface of the base material in contact with the tool.[5] With significantly lesser heat than the melting points of the base materials, lesser HAZ (heat affected zone) is created and hence there is a lesser effect on the original material properties [6].

REVIEW OF THE ANALYSIS ATTRIBUTES USING FUZZY KANO ANALYSIS MODEL

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ABSTRACT

The multi-lap joint has been made between the two sheets of the aluminum combination Al5052-H32 while an unadulterated copper foil was set in the middle of, utilizing the procedure of grinding mix welding (FSW). The instrument material was chosen to be M2 HSS, considering its warmth resilience limit and high quality. To diminish the quantity of investigations performed, Taguchi technique's L9 approach was brought into utilization. The test for extreme shear quality was carried on for all the examples. If there should arise an occurrence of AlA-Cu-AlA welds, it was discovered that the ideal estimations of a definitive rigidity were acquired for the parameters apparatus turn speed at 800 rpm, cross speed at 5 mm/min and the dive profundity being 0.2 mm. It was likewise added as far as anyone is concerned that the AlA-AlA joint had more prominent estimation of a definitive shear quality when contrasted and AlA-Cu-AlA joint while working with the parameters for the ideal extreme shear quality for the previous. It was seen that the clipping additionally assumed a huge job while erosion mix welding the meager sheets and foil.

Key words: Supplier selection attributes, Fuzzy technique, Kano model, customer satisfaction index.

1. INTRODUCTION

In order to survive in the present competitive market scenario, it is essential for any manufacturing firm to cut down the costs, improve the quality and deliver the products on time to the end customer. Manufacturing firms should seriously consider customer satisfaction strategy to face the challenges in the market. The role of raw material suppliers is also important for manufacturing firms to adopt customer satisfaction strategy. Manufacturing

REVIW AND ANALYSIS OF MODE-I FRACTURE TOUGHNESS FOR EPOXY-GLASS COMPOSITE

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ABSTRACT

The regular materials neglect to meet the necessities of high innovation applications like space applications. So as to meet the necessities like high temperature and wear protections new materials are being looked. The composite laminar for the testing will be set up with glass fiber downpour constrained with epoxy.

The utilizations of composite materials have as of late expanded in view of high quality/firmness for lower weight, predominant weakness attributes, an office to change fiber directions, and so on. Simultaneously, these materials represent another issues, for example, entomb utilize splitting, the bary laminar de-cover and fiber breaking. A Composite materials disappointment can be diminished by expanding the break strength.

Our Aim is to Evvaluate the break strength of the glass fiber/epoxy composites. The Composites were set up with a glass fiber strengthened with epoxy based polymer. Crack Toughness of the example is utilized to direct mode-I break test utilizing uncommon stacking installations according to ASTM guidelines.

Key words: Glass Fiber, Fracture Toughness,

1. INTRODUCTION

The role of engineering materials in the development of a modern technology need not be emphasized. It is the materials through which a designer puts forward his ideas into practice.

Several performance characteristics were expected from these materials. They are:

- Materials must have combinations of properties for specific uses since present day product of modern technological origins operate in environment that are special or
- Extreme like very high temperature (of order of 2500 °K), cryogenic condition, vacuum (as in space), high hydrostatic pressure (as in deep sea)

The conventional material may not always be capable of meeting consumer demands.

Hence new materials being created for meeting these performance requirements and such composite materials from one class of materials were developed.

2. LITERATURE REVIEW

As stated above, researchers are working with the problems of inter ply cracking, de-lamination and fiber cracking. This work is aimed at predicting the extent of crack

A STUDY OF F-M INVERTER FOR INTEGRATION OF FUEL CELLS WITH SINGLE PHASE GRID

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ABSTRACT

Sustainable power source is going to assume a significant job later on vitality situation. All the current topologies utilize number of middle of the road arranges before change of DC contribution to the AC yield to the lattice side. For this sort of transformation, effectiveness is low and number of intensity parts are likewise extremely high. In this paper, a minimal effort high effectiveness basic DC-AC flyback inverter is proposed. The proposed converter comprises of a straightforward flyback converter followed by a basic full extension inverter with inactive snubber in the essential. The methods of activity of the converter alongside the plan of the converter with the snubber is talked about. Exploratory outcomes from reproductions are introduced too.

Key words: Single Phase Grid, Micro Inverter, Fuel Cells

1. INTRODUCTION

Energy crisis in recent times and rising environmental concern are making renewable energy sources more and more important. In the year of 2014, the use of renewable energy was 2610.6 million tons of oil equivalent (Mtoe), responsible for 30% of world energy consumption [1]. The energy produced from maximum available renewable energy or those under research work (like Fuel Cell) is in DC form. The generation system can be locally grid connected or by using long range transmission. If the system is locally connected we need to step up or step down the voltage for a particular voltage level [2-6]. When appliances are connected to the local grid too we need different voltage levels for different applications, thereby necessitating the use of a DC-DC converter.

Examination of RC Building for Low, Moderate and High Seismic Categories

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***Abstract*--**In this examination, an investigation was directed to look at the plan of a skyscraper for rigid solid structure in various seismic zones. A 30 celebrated structure was demonstrated in ETABS programming and examination was accomplished for powers in low (seismic zone 1), moderate (seismic zone 2a, 2b) and high (seismic zone 3, 4) categories and applied powers were analyzed. The structure had a double casing including shear dividers collaborating with second opposing edge to give horizontal opposition. Every single auxiliary part were intended for moderate zone 2b (Karachi where the structure is arranged) and the limit was looked at for all the previously mentioned classes. The outcomes demonstrated that the individuals intended for moderate seismic zone were lacking for higher seismic zone classes. A portion of the shafts and sections which were discovered sufficient in low and moderate classifications were seen as inadequate for opposing burdens for high seismic loadings. So also shear divider in basically stacked region that were performing admirably in low and moderate zone should have been re-intended for high seismic zone classes. In RC structures which are broke down and intended to coordinate low and moderate seismic occasions are undependable for seismic occasions of higher class and run the hazard human lives and gigantic obliteration

Key Term-- Buildings, structures & design, Reinforced concrete structures; Seismic Zones

List of notation

ETABS	is the Extended Three Dimensional Analysis of Buildings Software
SPC	is the Seismic Performance Category
IBC	is the International Building Code
RC	is the Reinforced concrete
f_c'	is concrete cylindrical compressive strength
f_y	is reinforcement yield stress
R/F	is the Reinforcement
b	is the width of element
h	is the depth of member
V	is the shear force
M	is the bending moment
Av	is the area of shear reinforcement
s	is the spacing of bars

I. INTRODUCTION

Earthquakes forces are large in magnitude and in short duration of time creates large amount of displacements and stresses. These must be resisted by a structure without causing collapse and preferably without significant damage to the structural elements. The lateral forces due to earthquakes have a major impact on structural integrity (Kumar and Papa Rao 2013). For medium to tall buildings, where lateral actions are predominant, the detailing of elements and joints might be more critical but could still potentially follow the simplified design methods outlined by Uniform design building code (UBC) or International Building Code (IBC) for structures (Heiza and Tayel 2012). Michael and Majid (2001) and Dranath (2010) stated the design basic concepts of gravity systems, lateral loads and dynamic loads affecting the structural behavior of the high rise buildings. Poor understanding and design could lead to severe damage (Haseeb *et. al.* 2011).

For the design of a high rise reinforced concrete (RC) building, the International Building Code (IBC), assigns different level of Seismic Risk or assigned Seismic Performance Category (SPC) or Seismic Design Category (SDC), depending upon the seismic zone. The SPC varies from A to E with SPC of A & B for Seismic Zone 0, 1, SPC of C for Seismic Zone 2; and SPC of D & E for Seismic Zone 3, 4. Seismic zone 0, 1 are designated as Low; zone 2a, 2b as Moderate and zone 3, 4 as High seismic risk categories. Design and detailing requirements differ for each.

A mathematical study was developed to compare the design of a high rise reinforced concrete building in low, moderate and high seismic zone. A 30 storied building was modelled in ETABS software and analysis was done for forces in low (seismic zone 1), moderate (seismic zone 2a, 2b) and high (seismic zone 3, 4) categories and results were compared. The building had a dual frame comprising shear walls interacting with moment resisting frame to provide lateral resistance. The strength of concrete was taken as 40 MPa for columns and shear walls and 27 MPa for slabs and beams. While reinforcement strength in all the cases was considered to be 413 MPa. All structural members were designed for moderate

Drainage Water Management Impact on Drainage and Crop Production under Dry Conditions

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***Abstract*--** **Drainage water management (DWM) is the drainage system in which the drain outlets are partially closed to reduce drainage volumes. The effect of DWM depends on many factors such as soil type, weather condition and crop type. This research studies the effect of using DWM on drainage and crop production in three sites in USA at sec. IL and IA in the dry weather conditions. The hydrological model DRAINMOD has been used to simulate two drainage systems; conventional drainage and controlled drainage. The results showed that the efficiency of DWM system increases in the dry and very dry conditions. In the NC site, the crop yield increased by 9% in the very dry years , 5.33% in the dry years and 0.63% in the long term average. The drainage outflow was reduced by 26.4% in the very dry years and by 23.6 % in the dry years. In the IL site, crop yield increased by 5.4% and 4.6% and the drainage was reduced by 33.33% and 32% in very dry and dry years respectively. In the IA site, crop yield increased by 2.22% and 2.91% and the drainage was reduced by 46.5% and 32.2% in very dry and dry years respectively.**

***Index Term*--** **Controlled drainage, relative yield, dry conditions, DRAINMOD, subsurface drainage**

I. INTRODUCTION

Controlled drainage (CD), also known as drainage water management (DWM), is a pest management practice (BMP) that has been proven to be effective in reducing nutrient export from drained croplands to receiving surface waters [1]. It involves using control structures to raise water level in drainage outlets during periods when intensive drainage is unnecessary. It is applicable to bedding, in-ditch and subsurface drain tube systems.

Research results have shown that CD reduces drainage volumes and N losses from drained agricultural land to surface waters by over 40% compared to conventional uncontrolled drainage [2-6]. The controlled drainage systems must be properly managed in order to achieve their water quality benefits. CD works by raising the water table, reducing drainage volumes, and enhancing denitrification. It has the potential to conserve water and improve crop yields as it substantially reduce drainage volumes, increases groundwater recharge, raises the water table, and increases soil water in the root zone; All of these factors can alleviate dry stresses on crops. Unlike the water quality benefits, the potential water conservation and yield benefits of CD have not been well documented. Water conservation practices have received a lot of attention since the widespread crop damage and yield losses that occurred in the southeast due to the severe and extended drought of 2007. The water conservation and yield benefits of CD should be investigated.

The objective of this research was to conduct a simulation study using the drainage water management model, DRAINMOD 6.0, to assess the potential crop yield benefits of controlled drainage systems under dry conditions.

II. MATERIAL AND METHODS

A.Brief description of the hydrological model, DRAINMOD.

DRAINMOD [7] is a field scale water management model developed to simulate the performance of drainage and water table management systems for shallow water table soils. it has been widely used in the United States and worldwide over the last three decades. DRAINMOD conducts a water balance for soil column midway between two adjacent drains or ditches on a day-by-day, hour-by-hour basis and calculates infiltration, evapotranspiration (ET), subsurface drainage, surface runoff, deep seepage, water table depth on daily, monthly and yearly basis and crop yield. DRAINMOD simulates different drainage management systems including conventional drainage, controlled drainage, subirrigation, and combined controlled drainage/subirrigation systems. The model has different types of inputs including soil input parameters (saturated hydraulic conductivity (K_{sat}), Soil Water Characteristic Curve (SWCC), climatic input parameters (e.g. rainfall, temperature, and evapotranspiration), and cropping system parameters (e.g. planting and harvesting dates, root depths). Relative yield, which is the estimated ratio of the actual crop yield to the potential yield, expressed as a percent, is calculated in DRAINMOD as one of the performance measures of the simulated drainage system [8]. The relative yield is computed using Eq. (1):

Where RY is the relative yield, RY_p is the relative yield that would be obtained if only reduction due to planting date delay is considered, RY_w is the relative yield if only reductions due to excessive soil water conditions are considered, and RY_d is the relative crop yield if the only reductions are due to deficit soil water conditions.

An Experimental Investigation on Impact of Glass Powder and Waste Asbestos Cement Sheet as a Partial Replacement of Fine Aggregate and Course Aggregate

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ABSTRACT
The management of reuse of crushed waste Asbestos cement sheet and Glass powder is rapidly growing because it may be a valuable resource of the development. The use of waste materials could also be a partial solution to the environment and ecological problems. And therefore, the use of waste materials as aggregate will reduce the value of construction and provides an honest strength for the structure roads. A study is focused on the use of the crushed waste asbestos cement sheet as coarse aggregate in concrete with a continuing percentage replacement of 10% and glass powder as fine aggregate starting from 5%, 10%, 15%, 20%, 25% and the strength criteria of M20 concrete. The strength of concrete with and without replacement of crushed waste Asbestos cement sheet as coarse aggregate and glass powder as fine aggregate was observed which exhibits an honest strength. Keywords- Asbestos cement sheet, glass powder fine aggregate, coarse aggregate.

Keywords - *Asbestos cement sheet, glass powder fine aggregate, coarse aggregate*

I. INTRODUCTION

Concrete is a crucial artefact that is widely utilized within the development of infrastructures like buildings, bridges, highways, dams, and much of other facilities. Most concretes used Portland cement concrete or concretes made with other hydraulic cements. In almost altogether countries within the world, various experiments are done at reducing the utilization of primary aggregates are introducing, which is economically, technical or environmentally acceptable. To an end in developing countries like India, the [illegible] sector and secondary industries recycle 15-20% of solid wastes in various building materials and components. During this research, Asbestos sheet waste used as a rough aggregate within the concrete mix with 10% constant rate. When asbestos is used for its resistance to fireside or heat, the [illegible] are often [illegible] with cement or woven into fabric or mats. Similarly, Fine aggregate was partially replaced by waste glass powder as 5%, 10%, 15%, 20% and 25% by weight of fine aggregate. Concrete specimens were tested for compressive strength obtained were compared with results of M20 concrete.

II. LITERATURE REVIEW

Puppala jyothsna et al., 2017 The Concrete has low lastingness, partial ductility and tiny resistance to cracking, so on avoid these failures concrete is introduced with fibres to possess an added strength in the tension zone. A study has been conducted to figure out the effect of the addition of glass fibre in concrete. Within this work glass fibres in several percentages are varied as 0.5%, 1%, 2%, 3% are added to the amount of concrete are to be studied for the effect on mechanical properties of optical fibre ferroconcrete.

Rajalakshmi et al., 2017 The waste asbestos sheet utilized in concrete making results in greener Eco-Friendly environment. Use of waste asbestos sheet in concrete could also be an interesting possibility for an economy on waste disposal sites and conservation of natural resources. This project examines the likelihood of using the waste asbestos sheet as a replacement in coarse aggregate for a replacement concrete preparation. coarse aggregate partially replaced (0%,5%, 10%, and 15%) with waste asbestos sheet. Compressive strength and flexural strength up to the age of 28 days are compared with those age of concrete made with natural coarse aggregates. Fineness modulus, density, moisture content, water absorption for aggregate are studied. The test results indicate that it's possible to manufacture concrete containing a waste asbestos sheet with characteristics almost like those of natural coarse aggregate concrete as long

DESIGN AND CONFIGURATION OF FRICTIONAL ANALYSIS OF MACHINING PARAMETERS IN DRILLING PROCESS

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ABSTRACT

Friction penetrating procedure is a round opening making process by grating guideline. In this procedure a pivoting funnel shaped device makes an opening into the work piece without creating any chip. Here the opening is made by relax the work piece material by the warmth vitality created by the frictional power because of hub and rotational powers between the apparatus and work piece interface. In this paper we explore pressure, basic misshapening in rubbing penetrating. It is high temperatures and distortions are extremely high and hard to quantify tentatively along these lines, a cross section investigation of rubbing penetrating is finished utilizing Ansys workbench by differing working parameters like cone point of hardware device. Work piece materials The demonstrating of grating boring instrument and work piece created in professional E. The outcomes acquired from the investigation of rubbing boring are considered for the manufacture of contact boring device and it tends to be tried basically. To get ideal mix for the outcomes Taguchi strategy is utilized.

Key words: Taguchi, Friction Drilling, ANSYS

Experimental Investigations on Durability Characteristics of Concrete Developed By Using Brick Powder (Bp) and Quarry Dust (Qd)

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ABSTRACT

To meet the requirements of globalization, in the construction of buildings and other structures concrete plays the major rightful role and a large quantum of concrete is being utilized. The constituent materials of concrete include cement, sand, coarse aggregate and water. For better performance and to meet the requirements additives or sometimes super plasticizers are used.

Portland cement clinker production consumes large amounts of energy (850 kcal per kg of clinker) and has a considerable environmental impact. This involves massive quarrying for raw materials (limestone, clay, etc.), as it takes 1.7 tones to produce 1 ton of clinker, as well as the emission of greenhouse and other gases (NO_X, SO_2, CO_2) into the atmosphere. Around 850 kg of CO_2 are emitted per ton of clinker produced.

River sand is most commonly used fine aggregate in the production of concrete poses the problem of acute shortage in many areas. Whose continued use has started posing serious problems with respect to its availability, cost and environmental impact.

In the backdrop of such a bleak atmosphere, there is large demand for alternative materials from waste. Secondary cementing materials like Brick Powder can be used to partially replace cement because of pozzolonic nature. Materials like quarry dust best suites to sand due to its physical and chemical properties, fineness etc. Also these materials are known to increase durability, resistance to sulphate attack and Alkali-Silica reaction(ASR).

Our main aim is study the materials Brick powder and quarry dust are best suitable for preparing high strength and durable concrete

Keywords: Durability, Seawater, Sulphuric Acid, Compressive Strength, Split Tensile Strength, Weight Loss.

Experimental Investigation on Polymer Concrete with Different Volume Division of Bamboo Fiber

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Abstract - This paper examines the exploratory Physical Characteristics of polymer concrete with various fractions Bamboo fiber. From this exploratory investigation, it is discovered that the quality increment to some extent, the Split tension test result is improved because of the fiber content in the concrete the formation of crack was slowly downed, and the load-carrying capacity is higher for this polymer concrete with two percent of fiber content.

INTRODUCTION

From previous studies, Tahir Dawood et al. 2012 that the perception [illegible] with two or more various fibres integrated into a regular cement matrix can present added appealing engineering characteristics because one fibre gives the more appropriate usage of the powerful properties for the other fibre. Steel fibre has a significantly better length and high [illegible] modulus of elasticity when related to other fibre categories. This drives an enhanced flexural rigidity and [illegible] possibility for crack control, even though it is more vulnerable. It is also vital to note that steel has properties to conduct current and magnetic fields, and for this reason the steel fiber content must be decreased to some extent. Identification of physical and conductivity behavior can be [illegible] for various fibers, such as the natural fiber (sisal, sugarcane, bamboo fibre). The striking benefit of [illegible] fibre system is that it gives a system in which a type of fibre, which is stronger and rigid, enhances the initial crack-less independent strength, where another type of fibre, which is more simple and ductile, leads to the enhanced [illegible] tensile capability in the post-cracking zone. This provides a hybrid reinforcement, in which the [illegible] pre-cracks and lowers the crack width, [illegible] improved tensile property of the composite [illegible] bigger, so it can seize the extensive [illegible] considerably enhance the composite [illegible]

M[illegible] of the research work and fibre reinforcement [illegible] of fiber. Using mixed fibres as [illegible] the performance of concrete [illegible] Therefore, the research presents the [illegible] ratios of high strength concrete [illegible] Divorce et al (2013) deal with using some fibres as waste solid for making eco-friendly and green environments. The natural fibre is purely bio-degradable and recyclable. In that way, it reduces pollution, endorse biodiversity and the upkeep of naturally available resources, and as a result, it is environmentally friendly. Three fibres, namely Jute, Oil palm, and Polypropylene fibres are used in concrete, and their appropriateness, lifetime, and influence on the characteristics of concrete were calculated. The % of the fiber used was 0.25 and 0.50 of cement by mass. A total of 85 polymer concrete cube samples were prepared for fresh and harden concrete tests such as slump test, compaction factor test, and compression test. The examined results showed that for fibers of jute and Oil palm fibres, the best fibre content percentage was 0.25%, and for Polypropylene fibre, the best fibre content was 0.5%. They all improve in strength compared to the common concrete specimen and have confirmed to pull down the reasonable environmental waste pollution.

Therefore an effort has been made in this experimental investigation to read the outcome of adding up steel fibre at an amount of 1.5% of the total mass of concrete as fibres. Metakaolin was used at 8% of cement mass as metakaolin, and the adding up of steel fibers at 1.5% and 8% of metakaolin. The experiment was done using an M40 mix, and tests were carried out as per the recommended procedures by relevant codes. The results were compared with control concrete: it was observed that concrete blocks incorporated with steel fiber increased their compressive strength by 8.91% and tensile strength by 26.94%. K. Ramesh et al. (2013). the present Experimental investigation is to study the Mechanical Properties of the Fly ash concrete reinforced with steel fibers. Steel fibers varied from 0% 0.5% 1% and 1.5% by weight of cement. Specimens were tested for 28 days, 60 days, and 90 days. Based on the experimental results, it was found that the number of steel fibers which can be added to the concrete for improving its strength characteristics maybe 1% by weight. The addition of steel fibers more than1% generally affects the Compressive strength. Split tensile strength, and Flexural strength of the concrete.

Image Compression Techniques using MATLAB: A Study Report

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pressure approaches are utilized for pictures that are difficult to investigate or can't pack in ... calculations are especially noteworthy for frameworks passing on and chronicling ... microscopic cells in light of the fact that the pressure of fundus pictures is important to assemble ... patient's wellbeing. So this paper manages the near investigation of four ... pressure strategies named as discrete wavelet change (DWT). Adaptive word reference ... spatial ... and chain codes. The picture pressure correlation is done as far as pinnacle ... proportion and mean square mistake rate which are utilized to check the strength of packing ... is the most productive for the compressions. The entire situation is ...

Compression, fundus images, wavelet transform, chain codes, spatial predictions

I. Introduction

... is defined as a four-sided collection of pixel units. The pixel units of a gray scale sample of ... negative number construed as the strength in terms of the brightness. radiance of the sample of ... the level of the image intensities deals with the range of 0 to 2n - 1, formerly we can say that ... digital N bit we can say that the size of image is N-bit. Generally gray scale sample ... features 8 to 16 number of bits. Gray scale compression of images processes are ... additional detailed image compression systems and for procedures squeezing which deals with ... statistics categorized by the precise sleekness. These procedures are recycled for 3-... numerical data. Every now and then such statistics is flattened by regular image solidity ... can also be used for image compressions, i.e., encoding an arrangement of ... extracted from the image to be compressed in an effectual manner. For worldwide ... to compress the sample of the fundus images. Universal processes are frequently

... operating 28 and do not achieve the image data features directly which are: images ... statistics, strengths of adjacent pixels are extremely correlated. and the imageries comprise ... pixels of the image throughout the acquisition procedure. These features make ... processes that perform worse than numerical ones for image statistics. ... processes employ methods used in widespread numerical compression ... distributing and entropy calculation of the image is distorted to make it informal

... comparative analysis of the compression processes includes discrete wavelet transform ... algorithms, super spatial prediction and Chain codes are discussed in the paper. ... done by the researchers which are also discussed in this paper. Chandresh k ... deliberated various types of explanations for the compressions and the different ... compressions. Sonal Chawla, Meenakshi Beri, Ritu Mudgil [2] et al. proposed ... images. Their objective is to reduce the redundancy of image data which ... manner. George Toderici, Damien Vincent, Nick Johnston, Sung Jin ... lossy image compression processes which deals with the neural networks. They have ... and densities throughout distribution without any retraining of the ... Kamal, S. S. Deshmukh et al. [6] exploit image compression which is based ... that shows that the algebraic transforms are able to achieve high compression ... Hussain Hassan et al. [7] presents Haar wavelet transform which deals with the ... in terms of low and high pass filter banks

II. Discrete Wavelet Transform

... gained wide-spread acceptance in image compression. Wavelet transform ... basis functions. These basis functions are called wavelets. Wavelets are ... wavelet named mother wavelet by dilations and shifting. The DWT has been ... efficient and flexible method for sub band decomposition of data. The 2D-DWT is ... operation in signal processing. It is multi-resolution analysis and it decomposes ... scaling function.

... images of length N, the DWT consists of log2N stages at most. Starting ... sets of coefficients: approximation coefficients cA1, and detail coefficients

The age of the new Virtual World: A study of Claytronics

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Abstract— Claytronics is a new branch of technology, the programmable matter. Claytronics is an abstract concept which combines nanoscale robotics and computer science to create individual nanometre-scale computers called claytronic atoms or catoms which can interact with each other to form tangible 3-D objects. This can be more broadly referred to as programmable matter. Claytronics has the potential to impact many areas of daily life such as telecommunication, human-computer interaction and many more.

Keywords— Claytronics, Catoms, Micro, Nano, MELD, LDP

I. Introduction

Claytronics is a programmable matter whose primary function is to organize itself into the shape of an object and texture to match the visual appearance of that object. Programmable matter is a proposed computation, sensing, actuation and display as continuous properties active over Claytronics is made up of individual components, called catoms—for Claytronic atoms—relation to other catoms), adhere to other catoms to maintain a 3D shape (with possible assistance from other catoms in the ensemble). Each catom is a with a CPU, an energy store, a network device, a video output device, one or more sensors, a mechanism for adhering to other catoms. Objects featuring these catoms can be function. Furniture can morph into new types, for instance, bed could suddenly can be instantly moulded to precisely suit the individual. Walls, carpets, modify their colour or texture on demand. Many vehicles now make use of change colour at the touch of a button or they can self-heal: fixing bumps. can be instantly adapted for different terrain types or weather conditions. can be instantly blacked-out for privacy.

II. Scaling And Designprinciples

1. ned.
2. ed for adhesion afterattachment.
3. ed via localcontrol.
4. parts.

Table 1. Summary of the characteristics of the different catom design regimes

	MACRO	MICRO	NANO
	<1 cm	>1 mm	< 10 microns
	10 s of grams	100 s of mg	< 1 mg
	2 watt	10 s of mW	10 s of nW
	Programmable magnets	Electrostatics	Aerosol
	Magnets	Programmable nano fibre adhesives	Molecouler surface adhesion,covalent bonds
	Conventional	Nano Fabrication	Chemically directed self assembly
	Low	High	High

III. Hardware

The atom comprises of

1.
2.
3.

Use of STATCOM in the Distribution Network for the enhancement of the Voltage Profile

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Abstract: STATCOM is on [illegible] devices that used as regulator for transmission and distribution systems which works for reactive power compensation. STATCOM utilisation in distribution system mostly for enhancing the profile of voltage, where used for adjusting the disturbance voltage by injecting into the system a controllable voltage. This p[illegible] controller based on STATCOM to enhance the voltage profile in distribution network. The controller of STATCOM has simulated for different types of abnormal load conditions of [illegible] and [illegible] load. The results of simulation show ability of proposed design to enhance the load volta[illegible] nominal value

I. Introduction

STATCOM is one of the most important devices can be used in power flow control and power quality, which permit a[illegible] functi[illegible] prepared in the manner that without any loss the performance expectation. The equipments such as tr[illegible] motor, computer, printer, equipment of communication and all types of house machines [illegible] mentioned were affect to the quality of power negatively [1]. When a large load in the ne[illegible] power unable to be transmitted even though with essential of buses voltage magnitude [2] [illegible] cause complete or partial discontinuation in the network. The STATCOM [illegible] can regul[illegible] efficiently the injected current in to the bus [3]. Also STATCOM has several advantage [illegible] applications in compensation [illegible] conditions of sag swell [illegible] Suppressing [illegible] harmonics of line currents and [illegible] and reactive power compensation in transmission line also in the load also improve th[illegible] of the bus voltage [4, 5]. STATCOM with storage energy is advisable for STATCOM [illegible] magnitude and also the angle by VSC "Voltage Source Converter" for controlling [illegible] of STATCOM [6]. Many works have been suggested for the controlling [illegible] enhancement in the literature. Improving Voltage Profile using PI Controller implementation [illegible] In [9] presents Enhancement [illegible] location of UPFC to enhence voltage profile. [illegible] has many drawbacks that needs tunning at each [illegible] use of PI controller in [7]. [illegible] The use of UPFC in [8] needs settings and controllers for [illegible] less smoother. [illegible] The use of SVC in [9] have passive parameters that affect to the tuning of [illegible] in response. The new porposed of STATCOM for voltage profile [illegible] control is a high-speed response and smoother than conventional controller also [illegible] of passive element in SVC. The use of d-q theory to calculate the reactive [illegible] added another feature of small-time calculation of about one cycle [illegible] [8] and[9] that takes more than one cycle for calculation the peak amplitude, [illegible]

II. Voltage Regulation And Compensation

[illegible] for regulation of bus voltage are shown in Figure 1. The model contains [illegible] and load where the injection was in the middle of the line. Phasor [illegible] has relation with the load side, which means that the active component of [illegible] line current (Isc) and then the load voltage. The device of current source is [illegible] component this done by inject or absorb current (IC) to or from the [illegible] of voltage and also reduced reactive component of the source current. [illegible] of STATCOM, where the inductive load requires enough reactive current [illegible] should be feeding it and this will increase the line current from the [illegible] power is near load area, the supply current may be reduced thus [illegible] side) [10]. Three methods can improve the regulation; first by using a [illegible] source inverter" or by using CSI "current source inverter" [11]. The [illegible] the system under huge abnormal condition through that the bus [illegible] compensator normal range [12]. The main advantage of the use of voltage [illegible] power can be generate (instead of using capacitors) independent to the line [illegible] in inject the controllable voltage, many techniques of modulation [illegible] SPWM (sine PWM) or SVPWM (Space Vector PWM) [14]. In [illegible] before load as shown in Figure 3[15].

Study Report on the improvement of the Self Regulation Nonlinear PID(SN-PID) Controller for Industrial Usage

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Abstract [illegible] describes the improvement of Self-regulation Nonlinear PID (SN-PID) controller. [illegible] introduced to improve the system performance in terms of transient without affecting the steady state performance. It is used to optimize the nonlinear function available on this controller. The signal [illegible] this function and the result is used to tune the nonlinear function of the controller. [illegible] the dead zone on the proportional valve is solved using Dead Zone Compensator [illegible] were carried out on the pneumatic positioning system. Comparisons between [illegible] were examined and successfully demonstrated.

I. Introduction

[illegible] source of power that can perform various functions and pneumatics is classified in [illegible] that compressed gas. It has been used in industries for many years due to [illegible] inexpensive, fast in motion, high power to weight ratio, easy maintenance, [illegible] and [illegible]. Additionally, it is also widely used in many automatic tasks as a [illegible] servo motors. However, there are many factors that affect the control of [illegible] nonlinearities due to high friction forces, dead band in the valve and [illegible]. These factors lead to the difficulty in achieving an accurate position. As a [illegible] strategies that were investigated by [3 -12], researches in pneumatic positioning [illegible] over the last 20 years. Since early 2000s, the advanced control strategies such [illegible] neural network and so on were intensively explored and exercised to the [illegible] the past decade innumerable researchers have found that, when compared [illegible] integrated with PID controller works better in the pneumatic positioning [illegible] refers to the increment of the growth rate of publications written by [13- [illegible] is distinguished by substantial nonlinearities as previously stated. [illegible] linear controllers are hard to produce good performance for the system. [illegible] and load. On the other hand, as deduced by [17, 20 -22], it still can work [illegible] enhancing the adaptability of the controlled parameters.

[illegible] combination of conventional PID controller and neural network that has a high [illegible] nonlinearity. The experiments were carried out for each of the cases [illegible] up to 20 kgcm2. The proposed method showed a superior achievement [illegible] the disturbance compared to the conventional PID controller. An adaptive [illegible] to compensate the friction as recommended in another study conducted by [illegible] stroke's movement to the target position occurs swiftly and accurately [illegible] time and steady state error under a constant load was acquired under [illegible] significant overshoot as claimed by the authors. A Multi-model [illegible] PID-controllers was suggested by [17] because of the disadvantage of [illegible] follow the parameter variations. This technique has succeeded in increasing [illegible]

[illegible] Self-regulation Nonlinear Function (SNF) was introduced to generate a rate [illegible] SNPID controllers [25]. However, there is still minor problem in method [illegible] cylinder movement occurs when SNF algorithm activated. In addition, [illegible] to the output. Thus, in this paper, an improvement for the said purpose [illegible] new approach lies in the introduction of a new equation for the [illegible] called deceleration factor. The reasoning behind the introduction of this [illegible]

[illegible] performance of the system with respect to the desired speed. In [illegible] was added to the system to cater the dead zone phenomenon [illegible]. In order to verify the capability of this controller, experiments were [illegible] methods (SNPID) were executed in reference to the transient and [illegible]

[illegible] arranged as such: The research method is briefly explained in [illegible]

[illegible] to determine the acceleration factor, [illegible] SN [illegible]

Handling of Two-Stay Two-Stray Method for Liguistic Reading ability: a Learner's Perspective

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[illegible] the writer's observation in the Introduction to Linguistics class at second [illegible] of English [illegible] Universitas Islam Madura. From the data, there were some [illegible] they are: 1) they felt difficult in understanding the subject of Introduction to Linguistics [illegible] 2) they were not active in participating teaching and learning process. [illegible] the writer tried to find the solution by choosing the best strategy. It was [illegible] (TS-TS). This research is CAR (Classroom Action Research) [illegible] observing and reflecting. The subject of this research was the learners of [illegible] second semester. The result after implementing Cooperative Learning [illegible] there was high motivation from the learners in joining the class [illegible] of learners' score from preliminary study, cycle I andCycle [illegible] there were only 27.3 % learners who achieved the minimum score. [illegible] learnersachievedthetargetand % of learners got the target of the research. [illegible] that this method is effective and can be used in teachingreading.

[illegible] Two Stay Two Stray

I. Introduction

[illegible] tool to communicate with other people and it becomes an identity of [illegible] are many languages used by people in their daily conversation, they have local [illegible] with the people who have the same region such as Javanese people talk Java [illegible] Sundanese people talk Sunda language and others. Indonesia [illegible] used by all people who live inIndonesia.

[illegible] need an international language to be able to communicate or socialize [illegible] in the world. One of international languages is English. By understanding English, many [illegible] many kinds of English texts. Trisviana et al. (2019). For Indonesian, it is still a foreign [illegible] elementary school until University.

[illegible] English, there are four skills in English, they are speaking, reading, writing and listening. [illegible] the reading skill. Discussing about reading, Silalahi (2019) stated [illegible] understanding of reading is something that is very important [illegible] information written by the author to the reader. Because of that, the [illegible] English. In addition, Sinaga et al. (2020) stated that the reading skill [illegible] in the education field, the learners need to be exercised and trained in order to have a [illegible] the [illegible] recognize each of them in gaining information especially on reading [illegible] Sari [illegible] (2019) stated that reading English texts is remarkable to be taught and [illegible] English as a foreign language. This is what happened in Indonesia. [illegible] journals are written in English. The learners need these references to [illegible] while learning in the classroom.

[illegible] stated that reading is a much more complex process. It involves all [illegible] recalling, reasoning, evaluating, imagining, applying, and problem [illegible] Moreover Harmer. (2001) stated that reading text is full of [illegible] doesn't make sense just to get learners to read it and then drop to [illegible] integrated the reading text into interesting class sequences, using the [illegible] the language for study and lateractivation.

[illegible] in the Introduction to Linguistics class, the learners' reading skill [illegible] did the research and found the problems. The first, the learners [illegible] Introduction to Linguistics because it is new subject for them. It is [illegible] structure, speaking and listening which they have known and studied [illegible] that [illegible] knowledge guides comprehension processes. This also may have a [illegible] read [illegible] has an elaborate schema can more easily fit incoming textual [illegible]

[illegible] in the class were not active in participating the teaching and [illegible] class. It is because the method and strategy used in the class is [illegible] Teacher Centered Learning (TCL). The last is less activity that [illegible] stated that the lack of student learning activities will have an [illegible] from this, the lecturer must make various efforts, both [illegible] to encourage the learning activities of learners to improve the

[illegible] Report for the Diabetic Retinopathy for the Retinal Study

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[illegible] the recent studies, the automatic extraction of features and lesions from the input retinal images [illegible] into the early detection of disease and hence the screening of disease called as Diabetic Retinopathy [illegible] lesions characteristic group extracted from the retinal image of [illegible] years. In this paper we are aiming to present the different [illegible] localization of different retinal features as well as lesions. As this is first review [illegible] we are discussing the process of automated retinal disease recognition in DR in terms [illegible] involved. Further this paper address different research retinal images datasets those are [illegible] for evaluation of their different techniques. The survey is presented on various [illegible] identification of macular edema as well. The detection of macular edema assists [illegible] apply proper treatments which resulted into the elimination of disease completely [illegible] (10)

[illegible] Image, Features Extraction, Blood Vessels, Exudates, Optic Disc, [illegible]

I. Introduction

[illegible] World Health Organization (WHO) overall in world, there are about 135 million people [illegible] this number is increase up to 300 million by 2025. The analysis of medical [illegible] area which attracts number of researcher's interests for new methods and [illegible] purpose. This approach is composed of digital images study with aim of providing [illegible] tools [illegible] assist the quantification as well as visualization of anatomical [illegible] pathology. Progress in this area has been achieved in recent years, medical care is [illegible] patients improved significantly.

[illegible] serious progress is current health of the biggest immediate challenges. The number [illegible] continues to grow. According to a recent survey, 4% of the [illegible] been [illegible] diabetic disease alone and it has been recognized and [illegible] a main [illegible] accepted if not properly treated and early detection and diagnosis to [illegible] way as Have been identified with emphasis on medical routine due [illegible] features to detect and monitor the said disease.

[illegible] have been suggested and identified as means of reducing the stress caused by [illegible] screening related activities among which is the use medical digital image processing [illegible] related [illegible] like diabetic retinopathy using images of the retina. Diabetic [illegible] classified as non-proliferative diabetic retinopathy (NPDR) and proliferative diabetic [illegible] of diabetic patient's retina is very important. And, automated or [illegible] patients retina can help eye care specialist to screen larger populations of [illegible] research work presented by different authors over the automatic [illegible] use of different kinds of features as well as methods. Below we are [illegible] recently presented methods.

[illegible] analyzed the performance of three different template matching algorithms in [illegible] the retinal images for both gray level and color images. Blood [illegible] Gaussian matched filtering gives the complete and continuous vessel

[illegible] model, the retinal vasculature and proposed to remove from the eye [illegible] and crossover points to locate their facilities. [5]. the author [illegible] operators proposed. [6]. the authors proposed that fluorescein labeled [illegible] segmented digital images using Gabor Wavelet transform and [illegible] the area, perimeter and an additional five morphological features [illegible] wavelet obtained data.

[illegible] the matched filter response to the detection of blood vessels is increased by [illegible]

[illegible] distinguish mild NPDR from severe NPDR using a procedure that [illegible] vascular abnormalities are detected using scale and orientation

An ... imental Approach of the Beam Analysis of Two-Way Continuous Plate

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... shape ... analysis of continuous plates in two directions by earlier ... been with a lot of difficulties of complex and cumbersome equations. In this study, polynomial ... ement ... tions ... analyse a two-way continuous plate. A continuous plate spanning in both x ... panels, four(4) panels each along the x-direction and three(3) panels each along the y-direction ... edges are assumed simply supported while the internal edges of each ... moments of the clamped edges are calculated for each panel using ... which formed the fixed end moments(FEMs). Beam analogy is use to analyze ... stiffness method in both directions to obtain the support and span moments. The ... compared with the fixed end moment. These showed a good distribution of the ... 6.1% maximum in both directions. Simple equations are proposed based on ... analysis and design. Therefore, we conclude that analysis of continuous plate ... and easier with the use of polynomial displacement shapefunctions.

... Continuous Plate, Polynomial Displacement Functions, Fixed Edge Moment, Support ... Analogy, ... Stiffness Method

I. Introduction

... shape functions in classical and approximate methods of analysis of ... earlier scholars such as[1,2,3] had been with a lot of difficulties due to complex ... equations. A plate, by definition, is a structural element whose one dimension, the thickness, is ... continuous plate is that plate spanning over several supports into ... is called one-way continuous plate if it spans only in one direction for ... and if it spans along both x- and y- directions, then, it is called a two–way continuous ... classical methods to the design of continuous floor slabs often leads to ... illustrations based on indeterminable factors affecting the magnitude of ... may be as a result of the fact that, continuous plates are externally statically ... force and deformation methods. Earlier scholars have used ... ns ... continuous plate both in one-way and two-way[1,2,3], ... d in ... analysis. In finding an easy way of analyzing continuous plate in ... plate in particular, some scholars applied numerical and optimization ... displ... [... 13,14,15,16,17].

... the use of polynomial displacement functions and beam analogy. This is ... empirical manipulations. Several scholars[18,19,20,21,22], have applied them to ... bending, buckling and vibration. [23] applied them to analyze a one-way continuous ... evidence of their use in analyzing a two-way continuous plate. Also, there is ... authors' knowledge, for a two-way continuous plate analysis. According to[24], ... of ... orthogonal polynomials to obtain meaningful displacement ... ate. ... [26], even though, a plate is a two dimensional element, the ... plic... trigonometric functions have been the dominate functions in ... at ... the authors' knowledge, uses polynomial displacement functions ... therefore, this research work is aimed at the application of polynomial ... analyze a two-way continuous plate with the view of obtaining ... support and span moments. Also we aimed to obtain simple equationsfor ...

Methodology

... continuous ... that is, a 3 by 4 span). The plate is divided into twelve single ... all external edges (i.e. edges 1-2, 2-3, 3-4, 4-5, 5-6, 6-7, 7- ... edges 2-2, 3-3, 4-4, 6-6, 7-7) are clamped.

[illegible]echnological Aspects of Water Contamination and [illegible]emediation: An Environmental Effects

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[illegible] the generation of acid rock [illegible] Case studies as for an Indian copper [illegible] and tailings within the sight [illegible] Acid production potentials of mined sulfide ores [illegible] gangue effectively neutralized bacterial acid [illegible] of acid rock drainage is brought out [illegible] wastes, Acid generation, Acid production [illegible]

I. [illegible]roduction

[illegible] including autotro-phic and heterotrophic bacteria, fungi and yeasts [illegible] biochemical and geochemical reactions such as oxida- [illegible] readily interact with various mineral forms producing [illegible] metal ions and their transport across water tables. Be-sides [illegible] geochemical factors can be invoked in sulfide [illegible] olv-ing chemical and geochemical [illegible] metal dissolution (Natarajan, 1998;Kuyucak, [illegible] drainage (MD) emanating from abandoned mines, waste rock piles and [illegible] activity.

[illegible] of great significance in the biodissolution of minerals. [illegible] sulfides, the bacteria-iron-sulphur cycle in nature could [illegible] sulfide minerals and the role of microorganisms in their [illegible]

[illegible] role in the formation of certain sulfide minerals, especially [illegible] oxidation of several metal sulfides, regardless of the mode of [illegible] 2001). In nature, both iron and sulphuroxidising Thio- [illegible] which serve as energy sources for the microbes. [illegible] sulphuric acid containing Fe^{+++}, which subsequently [illegible] Biogenic reactions involving sulfide mineral dis- [illegible]

[illegible] hydroxides would occur.

[illegible] undertaken on representative samples from an Indian [illegible] major objectives:

[illegible] mining sites.

[illegible] heterotrophic bacteria from water, ore and tailing [illegible]

[illegible] production potentials of typical tailing samples from the [illegible]

[illegible] sulfate reducing bacteria as a demonstration of [illegible]

[illegible] materials and methods

[illegible] collected from the Ingaldahl copper mines, Chitradurga [illegible] sample was found to be 85 μm using a Malvern [illegible]

[illegible] assessed by carrying out agitation leaching and [illegible]

[illegible] sample was pulped to 100 ml using distilled water in a [illegible] in a Remi orbital shaker at 250 rpm at room temperature [illegible] oxidans were inoculated to the suspension both in the [illegible] iron. Sterile blanks without bacteria were maintained as