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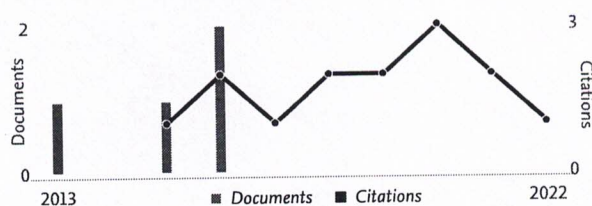⤴ Export to SciVal

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Original article

Thermal diffusion and diffusion thermo effects on unsteady MHD fluid flow past a moving vertical plate embedded in porous medium in the presence of Hall current and rotating system

G. Jithender Reddy[a,*], R. Srinivasa Raju[b], P. Manideep[c], J. Anand Rao[d]

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[c] *Department of Mathematics, Sphoorthy Engineering College, Nadargul, Saroornagar, Ranga Reddy(Dt), 501510, Telangana State, India*
[d] *Department of Mathematics, Faculty of Science, Osmania University, Hyderabad, 500007, Telangana State, India*

Abstract

In this research paper, numerical study of unsteady magnetohydrodynamic natural convective heat and mass transfer of a viscous, rotating fluid, electrically conducting and incompressible fluid flow past an impulsively moving vertical plate embedded in porous medium in the presence of ramped temperature, thermal radiation, hall current, thermal diffusion and diffusion thermo is investigated. The fundamental governing dimensionless coupled boundary layer partial differential equations are solved by an efficient Element Free Galerkin Method (EFGM). Computations were performed for a wide range of some important governing flow parameters viz., Hall current, rotation, thermal diffusion (Soret) and diffusion thermo (Dufour). The effects of these flow parameters on primary and secondary velocity, temperature and concentration fields for externally heating and cooling of the plate are shown graphically. Finally, the effects of these flow parameters on the rate of heat, mass transfer and shear stress coefficients at the wall are prepared through tabular forms for heating and cooling of the plate. Also, these are all discussed for ramped temperature and isothermal plates. We have shown that some results are in good agreement with earlier reported studies.
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Keywords: Heat transfer; MHD; Hall current; Rotation; Element Free Galerkin Method

1. Introduction

The Hall effect is the making of a voltage difference across an electrical conductor, transverse to an electric current in the conductor and an electromagnetic field is perpendicular to the current. It is found by Edwin Hall [1]. The problems on magnetohydrodynamics viscous fluids with hall current has importance in engineering applications
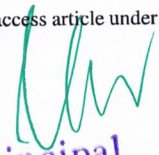
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ABSTRACT

Since the inception, Regional Rural Banks (RRBs) play a significant role in the development of rural areas in India by providing needed financial assistance to agriculture, trade, commerce, industry and other productive activities in the rural areas. Credit

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SERVICE QUALITY IN TELAMGANAGRAMEENA BANK
(A Study of Selected Rural Regional Bank Branches in Karimnagar District of Telangana State)

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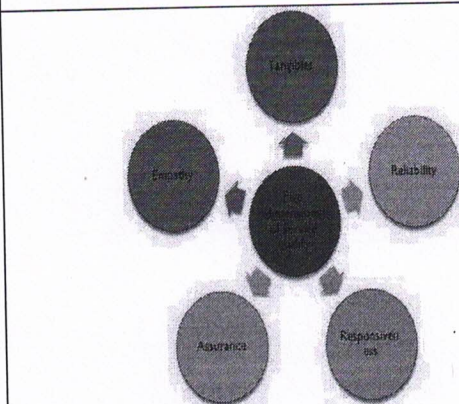Warangal, Telangana State,bhavaniprasadgv@gmail.com, +91 9848193906.

ABSTRACT

In the present competitive economy banking sector has been facing dynamic challenges in concerning both customer base and performance. The indispensable competitive strategic role of this sector is vital one in managing the customers. Providing service quality is highly significant function of service industry in today's competitive environment. Service quality is the excellent strategy and plays a key role in service sector in general and banking sector in particular to satisfy the customers' needs and retain them. The present study aims at assessing the service quality that delivered by the banks in rural areas, using SERVQUAL model.

Key Words: Rural Banks, Regional Rural Banks, Service Quality, Service quality gaps, Expectations and Perceptions.

INTRODUCTION

In many countries service sector plays dominant role in the markets. According to (Kotler, 2003), in the US economy, nearly 80 per cent of the employment opportunities provided and 76 per cent of the GDP contributed by the service sector. In India also service sector playing greater role in the nation's economy by contributing nearly 64 per cent of the GDP, having higher share in exports, 42 per cent of total exports from India, and providing high number employment opportunities. This indicates that the growing importance of the service sector. That is the reason why, companies well recognized the need for the better service quality and are looking for ways to perform better and attract and retain their customers in a high competitive manner (Wang. Y., 2003). Many researchers have been focused on this area of service quality for the last few years and recognized as one of the most important strategy of the business firms in the service sector to improve financial as well as marketing performance.

(Newmn, 2001) Service quality has been defined as the degree and direction between customer service

IMPACT OF SERVICE QUALITY ON PERFORMANCE OF BANKS

(A Comparative Study of Selected Bank Branches in Rural Areas of Karimnagar District in Telangana)

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GRAPHICAL ABSTRACT
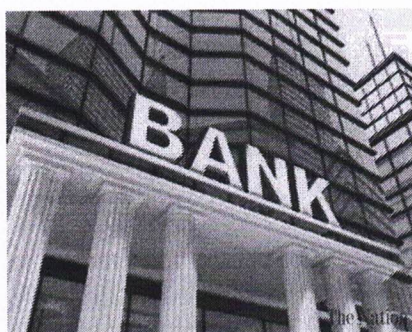
ABSTRACT

The banking industry in the service sector plays dominant role in the economy of the nation and citizens living in such economies are highly utilizing the electronic based banking services. Banks are creating value in the economy by extending their sophisticated value added banking services. For this, there is a high competition between public and private sector banks. Public sector banks have been enjoying the high share in the market while private sector banks have been providing high quality of services to attract customers. To maintain this dominance in the banking industry, the quality of services being provided and should meet or exceed expectations of customers. There is significant relationship between quality of service rendered and the profitability of banks. Hence, an attempt is made to study the impact of service quality on profitability of banks.

Keywords: *Service Quality, Profitability, Net Profit, Public Sector Banks, Banking Industry*

INTRODUCTION

Liberalization, Privatization and Globalization (LPG), leads to industrial growth and technological advancement and raised the importance of realignment of operational strategies to meet the demands of the dynamic customers. Customer focus is the top priority to all firms in the service sector. Now, satisfaction of the customers is the most important task of managers in organizations. Banking institutions are not exception to this. Bank managers are taking initiative steps to meet this target and to enhance the performance of the bank. Effective strategy deployment with quality service is only the way to make such initiatives successful. By

DECOUPLED LIVELY AND REACTIVE CONTROL FOR GIANT SCALE GRID LINKED PHOTOVOLTAIC TECHNIQUES USING CASCADED MODULAR MULTISTAGE CONVERTERS

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ABSTRACT

Large-scale grid-connected photovoltaic (PV) systems significantly contribute to worldwide renewable energy growth and penetration, which has inspired the application of cas-caded modular multilevel converters due to their unique features such as modular structures, enhanced energy harvesting capability, scalability and so on. However, power distribution and control in the cascaded PV system faces tough challenge on output volt-age over modulation when considering the varied and no uniform solar energy on segmented PV arrays. This paper addresses this issue and proposes a decoupled active and reactive power control strategy to enhance system operation performance. The relation-ship between output voltage components of each module and power generation is analyzed with the help of a newly derived vector dia-gram which illustrates the proposed power distribution principle. On top of this, an effective control system including active and reactive components extraction, voltage distribution and synthe-sization, is developed to achieve independent active and reactive power distribution and mitigate the aforementioned issue. Finally, a 3-MW, 12-kV PV system with the proposed control strategy is modeled and simulated in MATLAB and PSIM cosimulation plat-form. A downscaled PV system including two cascaded 5-kW con-verters with proposed control strategy is also implemented in the laboratory. Simulation and experimental results are provided to demonstrate the effectiveness of the proposed control strategy for large-scale grid-connected cascaded PV systems.

Index Terms—*Cascaded PV system, decoupled active and reac-tive power control, voltage distribution.*

INTRODUCTION

LOBAL energy crises and environmental concerns **G**[1]–[3] from conventional fossil fuels have attracted more and more renewable energy developments in the worldwide Among of these renewable energy, solar energy is much eas-ier to be harvested, converted, and delivered to grid by a va-riety of power converters [4]–[14]. In particular, large-scale grid-connected photovoltaic (PV) systems play a major role to achieve PV grid parity and have been put forward in high penetration renewable energy systems [15]. As one type of modular multilevel converters, cascaded multilevel converters share many merits of modular multilevel converters, e.g., lower electromagnetic interference, low device rating, improved har-monic spectra, modularity, etc., but also is very promising for the large-scale PV system due to its unique advantages such as independent maximum power point tracking (MPPT) for seg-mented PV arrays, high ac voltage capability, etc. [11]–[14].

However, cascaded multilevel converters in PV systems are different from their some successful application such as medium voltage motor drive, static synchronous compensator (STATCOM), harmonic compensator, solid state transformer, which are connected with symmetrical segmented

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STUDY OF SPEED CHARACTERISTICS ON MULTILANE HIGHWAY

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June 14, 2018

Abstract

Speed is one of the basic traffic flow parameter and useful in understanding of vehicular interactions for calculating highway traffic capacity and formulation of effective traffic regulation and control measures. In this paper an appropriate method was adopted to study thespeed characteristics on urban multilane highway.The traffic flow data was collectedat certain location on Delhi-Gurgaon expressway (NH-8) using videography technique. The probability distribution function and descriptive statistics of traffic stream speed was investigated. It was found that the speed follows the

1

Traffic Impact Study at the Existing Road Connecting between Botanical Garden of Gachibowli Miyapur Road and Ends at Prof C.R. Road, Hyderabad-Telangana

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Abstract: *The existing road network system in Hyderabad is facing lot of problems associated with inadequate traffic management and lack of efficient transport system. This has resulted inconsiderable growth and use of personalized vehicles leading to traffic congestions due to inadequate road configurations. The primary and secondary road network of GHMC consisting of arterial, sub arterial, collector and local streets under GHMC undergoing frequent maintenance due to frequent digging of roads along and across for laying of new/shifting of existing utilities, inadequate carriageway width for the ever growing vehicular traffic. there is more probability of accidents due to unavailability of median, warning signs etc. Apart from the above improper/lack of footpath for the vulnerable pedestrians ,indiscriminate disposal of garbage and dumping of debris on the road side, unauthorized encroachments leading to reduction in road space thereby congestion, early failure of BT surface due to inadequate drainage facilities coupled with absence of proper camber, clogging of drains, quality of construction and maintenance etc., leading to the failure of these roads. Currently the existing road connecting between Botanical garden of Gachibowli Miyapur road and ends at prof C.R. Road .the Road is very narrow and frequent traffic jams occur on this road leading to inordinate delay for traffic. Most of the traffic passing through this road is two wheelers, cars, light commercial vehicles etc. there is a lot of open space In some areas along the road. and there is a little space for widening due to the establishments such as commercial shops, religious structures etc., very close to the road in some areas along the road*

Keywords: Design pavement composition, periodic repair costing, provision of dowel bar & tie bar, design of junctions, cost comparison

1. Introduction: Requirements for Good Pavement

Satisfactory pavement performance depends upon the proper design and functioning of all of the key components of the pavement system. These include:

- A wearing surface that provides sufficient smoothness, friction resistance, and sealing or drainage of surface water
- Bound structural layers (*i.e.*, asphalt or Portland cement concrete) that provide sufficient load-carrying capacity, as well as barriers to water intrusion into the underlying unbound materials.
- Sufficient thickness to distribute the wheel load stresses to a safe value on the sub grade soil
- Long design life with low maintenance cost
- A subgrade that provides a uniform and sufficiently stiff, strong, and stable foundation for the overlying layers.

- Drainage systems that quickly remove water from the pavement system before the water degrades the properties of the unbound layers and sub grade.
- Produce least noise from moving vehicles
- Dust proof surface so that traffic safety is not impaired by reducing visibility

Traditionally, these design issues are divided among many groups within an agency. The geotechnical group is typically responsible for characterizing the foundation characteristics of the subgrade. The materials group may be responsible for designing a suitable asphalt or Portland cement concrete mix and unbound aggregate blend for use as base course. The pavement group may be responsible for the structural ("thickness") design. The construction group may be responsible for ensuring that the pavement structure is constructed as designed.

2. An Index Map Showing the Road Alignment are Given Below

Compressive Strength of Concrete by Replacing Cement with Silicafume for M20 Grade

Ratod Vinod Kumar[1], Koudagani Venkatesh[2]

[2]Assistant professors of Malla Reddy Institute of Technology & Science, Maisammaguda, Dulapally, Ranga Reddy, ts500100

Abstract: *Cement is the back bone for global infrastructure development. It was estimated that global production of cement is about 1.3 billion tonnes in 1996. Production of every ton of cement emits carbon dioxide to the tune of about 0.87 ton. It can be said that 7% of the world's carbon dioxide emission is attributable to Portland cement industry. Silica Fume is a very fine powder consisting mainly of spherical particles or microspheres of mean diameter about 0.15 microns, with a very high specific surface area (15,000-25,000 m2/kg). To fulfil the objective various properties of concrete using silica fume have been evaluated. Further to determine the optimum replacement percentage comparison between the regular concrete and concrete containing silica fume is done. It has been seen that when cement is replaced by silica fume compressive strength increases up to certain percentage (10% replacement of cement by silica fume). But higher replacement of cement by silica fume gives lower strength.*

Keywords: Definition, Mix design, compressive strength of cube, cylinder (by replacing silica), results

1. Introduction

Silica fume Definition: Very fine non crystalline silica produced in electric are furnaces as a byproduct of alloys of containing silicon; also known as condensed silica fume or micro silica.

Metals that produce silica fume: Silicon metal – typically greater 40 to 90% silicon alloyed with ironically greater than 97% and ferrosilicon alloys -ranging from 40 to 90% silicon alloyed with iron.

Mix Design: By using Bureau of Indian Standards method As per IS 10262:2009(Revised)
Stipulation of proportioning: Grade designation= M-20, type of cement = OPC 53 grade, maximum nominal size of aggregates = 20mm, S water/cement ratio = 0.53 (mild-M25)

Target mean strength for mix proportioning
[f' ck = f ck + k.s]
1) target mean strength = $20+1.65 \times 4 = 26.6 N/mm^2$
2) characteristics strength at 28 days = 20Mpa

The standard deviations (σ) are:
M10-M15: 3.5 MPa;   M20-M20: 4.0 MPa
M30-M50: 5.0 MPa

Selection of water content
1) Max. water content = 186lts(at 50mm slump)
2) corrected water content = 186+(186 x 6/100)
W=197lts.

Calculation of cement content
1) Water/cement ratio = 0.53
2) Cement content = 197lts/0.53
C=371.69 kg/m^3

Calculation of coarse and fine aggregate
From zone one and coarse (20mm) at w/c ratio 0.5
Volume of coarse aggregate = 0.6

Corrected Volume = 0.01/0.05 x 0.02=0.004@ 0.6+0.004
Coarse aggregate = 0.604m^3 ;Fine aggregate = 1-0.604=0.396m^3

Calculations:
Volume of concrete = 1m^3 ; absolute vol.0f cement = 372/3.10 x 1/1000
= 0.12m^3
volume of water = 197 x 10^-3 = 0.197m3
volume of materials (except aggregates)= 0.12+0.197 = 0.317m3
absolute total aggregates = 1-0.317 = 0.683m3
weight of coarse aggregate= 0.683 x 0.604x 2.63x 1000= 1085 kg/m3
weight of fine aggregate= 0.683 x 0.396 x 2.64x 1000= 714.035 kg/m3
total density = cement + coarse aggregate + fine aggregate +water=2368kg/m3

Table: For 1m^3, the proportions are:

Cement	Fine aggregate	Coarse aggregate	Water
372	714	1085	197
1	1.91	2.9	0.53

Calculation for cubes :
Volume of cube = 0.15*0.15*0.15 = 0.00375 m3
For 0.00375 m^3
Cement content = 0.00375*372 = 1.395 kg
Coarse aggregate content = 0.00375*1078 = 4.044 kg
Fine aggregate content = 0.00375* 723.5 kg =2.7131 kg
Water content = 0.00375*194 = 0.7275 liters
Replacement of cement with 0% silica fume:
Silica fume content = 0 kg ; Cement content= 1.2555 kg
Replacement of cement with 5% silica fume:
Silica fume content = 0.05kg ; Cement content= 1.2055kg
Replacement of cement with 15% silica fume:
Silica fume content = 0.15 kg;Cement content = 1.1055 kg
Replacement of cement with 25% silica fume:

A Survey on Mobile Commerce Security Issues and Applications

K Sridhar[1] Dr.D.Suresh Babu [2] and Dr.T.Venugopal[3]

[1] Research Scholar, JNTU Hyderabad, Telangana
[2] Dr.D.Suresh Babu, Head, Dept CS, Kaktiya Government College Hanmakonda, Telangana
[3] Dr.T.Venugopal, Associate Professor, JNTU Sultanapoor, Telangana

---ABSTRACT--
Electronic saving money and Mobile managing an account are seen as one of the best business-to-buyer applications in electronic trade and versatile business. The utilization of e-saving money and m- managing an account particularly in created nations has become quickly. Low charges, time investment funds and opportunity from time and spot have been observed to be generally imperative components of e-managing an account and m-saving money. These administrations are simple to utilize helpful and good with way of life , pace of administration conveyance is quick. There are two sorts of administrations offered in e-keeping money and m-keeping money, i.e. A) Notifications and alarms and B) Data, in which the bank sends messages containing data or notice required by the client. In this paper shows another system for using so as to enhance security of these messages steganography and cryptography system together.
Keywords: *Steganography, m-management, e-saving,wireless secuit.*
--- ---------

I. INTRODUCTION

Electronic keeping money altogether changed the route in which numerous clients' Original copy got May 9, 2012; reexamined June 13, 2012. Creators are with the Department of Computer Engineering, Government School of Engineering & Research, Awasari, Pune, India (email: patu_pawar@yahoo.co.in; shgawande@yahoo.co.in). Gotten to their ledger. Banks incredibly bolster this not just on the grounds that they could address their client's issue for accommodation additionally on the grounds that of the gigantic financial effects in supplanting a high-cost channel (bank representatives) through an ease channel (a focal web server) for straightforward exchanges, with the extra advantage of killing the need for a media change. Since clients considered their cellular telephone as an individual trusted gadget making it to a basic piece of their lives and the greater part of these gadgets got to be Internet-empowered, the normal conclusion was the change of saving money applications to cell phones as the following stride of electronic saving money advancement. For portable saving money, the favorable circumstances even go much further than for electronic keeping money: The high entrance of portable telephones achieves every single social level, versatile applications disband the impediments of electronic keeping money as they take into account an utilization at whatever time anyplace and the subjective and target security of the gadget is higher than that of a PC . There are two sorts of administrations offered in e-keeping money and m-keeping money, i.e. A) Notifications and alarms and B) Data, in which the bank sends messages containing data or notice required by the client. In spite of the fact that the conventions in the system have expanded the security of these messages and counteract revelation of this data as far as could be expected under the circumstances, this paper shows another system for using so as to enhance security of these messages steganography and cryptography system together.

Steganography is a craft of concealing data. The objective of steganography is to have undetectable correspondence in totally imperceptible way while the objective of cryptography is to secure correspondence from a busybody. Pictures are perfect for data concealing as a result of the extensive measure of space is made in the putting away of pictures. Steganography comprises of routines for transmitting mystery messages. These mystery messages are exchanged through obscure spread bearers. In this system before concealing message into a spread picture; message is scrambled first by utilizing AES calculation and afterward this scrambled message is handled to cover up into a picture so that steno-picture contains shrouded message which is not in plaintext structure. Another essential point is that we are stowing away encoded message into a picture utilizing "Arbitrary LSB Steganography" that is installing information in non-consecutive LSB insertion design with the goal that it is indiscernible and inconsistent to identify.

Traffic Impact Study and Signal Design at Suchitra Junction, Qutubullapur, Rangareddy, Telangana, India

K Venkatesh[1], Ratod Vinod Kumar[2]

[1,2]Assistant Professor, Department of Civil Engineering, Malla Reddy Institute of Technology & Science, Maisammaguda, Dulapally, Ranga Reddy, 500100

Abstract: *TIS (Traffic impact study) is generally required to support the transportation aspects of a proposed development that has the potential to generate significant amounts of pedestrians, bicycle trips, transit users and vehicular traffic. Traffic rules and regulations are devised to assure the smooth flowing of motor vehicles in the road. Moreover, traffic rules and regulation are not only for the driver of the vehicles but at the same times these rules are meant for the pedestrians, cyclist, motor-cyclist and other road users. Traffic signal is an aid to control traffic at intersections where other control measures fail. The signals operate by providing right of way to a certain set of movements in a cyclic order. The necessary data should be collected by means of traffic engineering studies. Minimum vehicular volume, interruption of continuous traffic, minimum pedestrian volume, accident experience, combination of above warrants. Combination of warrants when no single warrant is satisfied but indicating two or more warrants of above are satisfied to the extent of 80 percent or more of the stated volume. Traffic control signal shall be installed at Suchitra junction for the following signal warrants meeting. As the average traffic flow for 8 hours on both approaches exceeding 800 vehicles. Interruption of continuous traffic flow on the major street exceeding 1000 vehicles per hour. As 150 or more pedestrians per hour crossing a major street with over 600 vehicles per hour on both approaches.*

Keywords: Literature review, study area, traffic impact study, methodology, traffic signals

1. Introduction

Traffic Impact Study (TIS) is a systematic and scientific study to analyze the impact of the traffic generated by a new development on the surrounding transportation system. A TIS is generally required to support the transportation aspects of a proposed development that has the potential to generate significant amounts of pedestrians, bicycle trips, transit users and vehicular traffic. A well-prepared traffic impact study helps the developer and permitting agency accomplish the following:

- Forecast the traffic impacts created by proposed development based on accepted practices, not perceptions.
- Determine improvements needed to accommodate the proposed development.
- Allocate funds more efficiently.
- Evaluate more number, location, and design of access points.
- Update traffic data.
- Identify needed roadway improvements.
- Provide a basis for determining the developer's responsibility for specific off-site improvements.

2. Study Area

Suchitra Junction or Suchitra Center Suchitra cross roads is one of the fastest growing suburbs of Hyderabad, India. It has become a hub on Bowenpally-Medchal Road. The western road leads to Chintal, Shahpur, Jeedimetla, IDPL. The eastern road leads to Alwal via Loyola College. Suchitra is witnessing traffic issues during rush hours.

Traffic impact studies help communities to

- Forecast additional traffic associated with new development, based on practices.
- Determine the improvements that are necessary to accommodate the new development.
- Assist communities in land use decision making.
- Assist in allocating scarce resources to areas which need improvements.
- Identify potential problems with the proposed development which may influence the developer's decision to pursue it.
- Allow the community to assess the impacts that a proposed development may have.
- Help to ensure safe and reasonable traffic conditions on streets after development is complete.
- Reduce the negative impacts created by developments by helping to ensure that the transportation network can accommodate the development.
- Provide decision to community decision makers and developers of expected impacts.
- Protect the substantial community investment in the street system.
- Traffic impact studies should be used as one piece of several kinds of information to judge the suitability of development from a transportation stand point.

Satellite View of Suchitra Junction

Traffic Impact Study at the Existing Road Connecting between Botanical Garden of Gachibowli Miyapur Road and Ends at Prof C.R. Road, Hyderabad-Telangana

Koudagani Venkatesh[1], Ratod Vinod Kumar[2]

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Abstract: *The existing road network system in Hyderabad is facing lot of problems associated with inadequate traffic management and lack of efficient transport system. This has resulted inconsiderable growth and use of personalized vehicles leading to traffic congestions due to inadequate road configurations. The primary and secondary road network of GHMC consisting of arterial, sub arterial, collector and local streets under GHMC undergoing frequent maintenance due to frequent digging of roads along and across for laying of new/shifting of existing utilities, inadequate carriageway width for the ever growing vehicular traffic. there is more probability of accidents due to unavailability of median, warning signs etc. Apart from the above improper/lack of footpath for the vulnerable pedestrians ,indiscriminate disposal of garbage and dumping of debris on the road side, unauthorized encroachments leading to reduction in road space thereby congestion, early failure of BT surface due to inadequate drainage facilities coupled with absence of proper camber, clogging of drains, quality of construction and maintenance etc., leading to the failure of these roads. Currently the existing road connecting between Botanical garden of Gachibowli Miyapur road and ends at prof C.R. Road .the Road is very narrow and frequent traffic jams occur on this road leading to inordinate delay for traffic. Most of the traffic passing through this road is two wheelers, cars, light commercial vehicles etc. there is a lot of open space In some areas along the road. and there is a little space for widening due to the establishments such as commercial shops, religious structures etc., very close to the road in some areas along the road*

Keywords: Design pavement composition, periodic repair costing, provision of dowel bar & tie bar, design of junctions, cost comparison

1. Introduction: Requirements for Good Pavement

Satisfactory pavement performance depends upon the proper design and functioning of all of the key components of the pavement system. These include:

- A wearing surface that provides sufficient smoothness, friction resistance, and sealing or drainage of surface water
- Bound structural layers (*i.e.*, asphalt or Portland cement concrete) that provide sufficient load-carrying capacity, as well as barriers to water intrusion into the underlying unbound materials.
- Sufficient thickness to distribute the wheel load stresses to a safe value on the sub grade soil
- Long design life with low maintenance cost
- A subgrade that provides a uniform and sufficiently stiff, strong, and stable foundation for the overlying layers.

- Drainage systems that quickly remove water from the pavement system before the water degrades the properties of the unbound layers and sub grade.
- Produce least noise from moving vehicles
- Dust proof surface so that traffic safety is not impaired by reducing visibility

Traditionally, these design issues are divided among many groups within an agency. The geotechnical group is typically responsible for characterizing the foundation characteristics of the subgrade. The materials group may be responsible for designing a suitable asphalt or Portland cement concrete mix and unbound aggregate blend for use as base course. The pavement group may be responsible for the structural ("thickness") design. The construction group may be responsible for ensuring that the pavement structure is constructed as designed.

2. An Index Map Showing the Road Alignment are Given Below

A Survey on Mobile Applications and Methods of Payments

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Abstract- A mobile application is defined as a software application, a wireless service or a mobile service that can be either pushed to user's handheld wireless devices or downloaded and installed, over the air, on these devices.An application which resides in the mobile phone or which is accessed or used by a mobile phone over any channel such as SMS, MMS, GPRS, Voice, DTMF.Two types of mobile applications can be accessed by wireless devices, the first type is Browser-Based. A Browser-Based application is an application that is accessed through the use of the mobile device's web browser. Browser-Based applications are coded with the use of a markup language. Second type is Native Applications. Native applications are those applications that are found entirely on the mobile device. These applications have their own runtime environment for execution.Mobile services to users, e.g. purchasing train tickets via mobile telephone or transferring money from the bank account. Individual services of similar nature can be bundled into an application, e.g. Mobile Ticketing or Mobile Banking.

Keywords – Mobile banking, Mobile Ticketing, Mobile Marketing, Mobile Services.

I.   INTRODUCTION

An Overview of Mobile Applications: The applications are described briefly in the following:

Mobile Banking- This application makes it possible to complete bank related transactions, e.g. checking account status, transferring money and selling stocks, via mobile devices, independent of the current user location .Mobile Entertainment: On the one hand, this application contains services that provide the user digital data with entertainment value on mobile devices, e.g. ring-tones, music and videos. On the other hand it opens an array of interactive services, e.g. betting, gaming, dating and chatting.

Mobile Information Services- This term refers to mobile services that provide subscribers with content of informational character. Examples of such services are news updates of any nature (finance, politics, sport etc.), traveling formation, access to search engines and Mobile Office (e-mails, appointments etc.).Mobile Marketing: This term refers to services based on mobile communication technologies that provide firms with new, innovative instruments, e.g. to increase sale, win and retain customers, improve after-sales services, build and sustain a positive and modern image/brand and carry market research. Mobile devices serve thereby as simple and relatively inexpensive channels of interaction .Mobile Shopping: This application bundles services that allow for mobile processing of transactions involving purchase of goods of daily use. The user can purchase (mostly standardized)

BUILD A FRAMEWORK TO OPTIMIZE
M-COMMERCE SECURITY

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ABSTRACT:

Mobile commerce (m-commerce) is as long as industrial services those area unit accessible by victimization mobile devices, PDA, etc. the most benefits of such services area unit their high handiness, independence of physical location and time. However the move to make a wireless version of net suggests that a brand new set of issues. Like the prevailing fastened net, the most important downside is security. Even though the very fact that operators area unit asserting or rolling out Wireless Applications Protocols (WAP), I-mode and java-based info, the platforms have opened security holes.

This paper aims to present some suggestions to enhance m-commerce security and limit the m-commerce drawbacks. These suggestions associated with the subsequent functional: End-to-End Transport Layer Security by Java a pair of small edition/ mobile info device profile (J2ME/MIDP). victimization J2ME/MIDP to mobile communication overcome the safety challenges Janus-faced with WAP technology, however securing the XML messages transferred between the movable and therefore the server would offer high level of integrity for the information itself not for the physical association.

Keywords: *mobile commerce, wireless applications protocol, wireless transport layer security.*

1. INTRODUCTION

Mobile commerce (m-commerce) is providing commercial services that are accessible by using mobile devices, typically a mobile phone. The main advantages of such services are their high availability, independence of physical location and time. Yet the move to create a wireless version of internet means a new set of problems. As with the existing fixed internet, the biggest problem is security. Despite the fact that operators are announcing or rolling out Wireless Applications Protocols (WAP), I-mode and java-based information, the platforms have gaping security holes.

2. This research aims to present some suggestions to improve **m-commerce** security and limit the m-commerce drawbacks. These suggestions related to the following functional: End-to-End Transport Layer Security by Java 2 micro edition/ mobile information device profile (J2ME/MIDP). Using J2ME/MIDP to mobile communication overcome the security challenges faced with WAP technology, but securing the XML messages transferred between the mobile phone and the server would give high level of integrity for the data itself not for the physical connection.

3. There are several different ways of defining mobile commerce. Some consider it to involve monetary value where as the others term it to provide services. The more general definition of m-commerce refers to the access to the Internet via a mobile device, such as a cell phone or a Personal Digital Assistance (PDA). M-commerce is termed as using a mobile device for business transactions on the Internet that involve the transfer of money.

CLASSICAL DESIGN OF GRID CONNECTED PV INVERTER WITH DC SUPPRESSION FEATURE

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ABSTRACT

The Photo Voltaic inverters without the isolation transformer become more attractive due to higher efficiency and lower weight and other offered mentioned advantages. However, it may have dc offset current while injecting generated AC to the grid which is critical to the power system. In this paper, a simplified control strategy of suppressing dc current injection to the grid connected for PV inverters is analyzed using MATLAB simulink software. It is based on the idea of accurately sensing the dc offset voltage of PV inverter output which is fed to Grid. Since dc component of the inverter output can be eliminated, dc injection to the grid can be effectively suppressed. To show the effectiveness of the proposed method FFT analysis has implemented to the proposed method.

Keyword: *- Inverter, DC offset suppression, FFT analysis, PV, Grid.*

1. INTRODUCTION

The rapid development of renewable generation boosted the need for efficient, cheap, and robust converters that would interface them to the grid, without compromising the quality of supply for the end user. Most renewable provide a dc source of electric power, thus proper interfacing to the grid requires at least an inverter. Often, due to the low voltage acquired from sources such as domestic wind turbines, solar arrays or fuel cells, a boost converter or/and a transformer (if isolation is required) is added at the dc or ac side, respectively, in order to boost the voltage to the appropriate level. The most common type of commercial inverter used for this kind of applications is a variation of sinusoidal pulse width modulation full-bridge inverter. The simplicity of the design provides robust operation and simple control, but the harmonic content of the output requires a low-pass filter to comply with the standards.

Two disadvantages of this application are the increased size and cost due to the filter and the losses of the semiconducting switches performing the inverting operation at the inverter bridge (four) and the boost converter (one), usually, at a non acoustic frequency. Several PWM methods have been developed in order to reduce the harmonic content. Selective harmonic elimination solves the transcendental equations characterizing harmonics, so that appropriate switching angles are computed for the elimination of specific harmonics at the output [1]–[3]. Theoretically, these methods can provide a satisfying harmonic content. However, the solution of these equations is computationally intensive, thus, quite difficult to be done online. In small-scale applications, where powerful digital signal processors (DSPs) are not currently an option due to their higher cost, either switching angles are calculated offline [4]–[8], or the equations are liberalized before they are solved [9], [10], or an approximate solution is sought where the topology permits it [11]. Other methods include modification of the carrier signal [12]–[14] or the reference sine wave [15], [16]. All of them, though, are open-loop control schemes, which assume a known and perfectly constant dc source (i.e., harmonics induced to the grid by an inductive source are ignored) and ignore the existing harmonic content of the grid voltage or the distortion caused by the load. In simple terms, they aim to reduce the harmonics created by the PWM itself, rather than improve the harmonic content at the terminal bus, which is affected by the PWM only partially.

USING RANDOM LSB STEGANOGRAPHY ANDCRYPTOGRAPHY METHODS FOR M-COMMERCE SECURITY

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Abstract :

M-business is one of the principle branches of e-business. The keeping money industry is among the main divisions in receiving and using the Internet and portable innovation on shopper markets. Portable managing an account is a subset of electronic managing an account which under lies not just the determinants of the managing an account business additionally the extraordinary states of portable business. The advancement of electronic managing an account and portable managing an account administrations by means of different channels has made it conceivable to make new sorts of included quality for clients. Be that as it may, in resentment of their preferences, both are confronting a few difficulties as well. One of these difficulties is the issue of security of these frameworks. This paper presents security of these frameworks utilizing Arbitrary LSB steganography and cryptography system. The proposed strategy is more protected and secure as opposed to utilizing either steganography or cryptographic strategy. This paper shows secure and imperceptible correspondence in M-keeping money and in addition e-saving money.

Keywords- Cryptogarphy. LSB, M-Business Steganogaphy

I. INTRODUCTION

M-business is one of the principle branches of e-business. The keeping money industry is among the main divisions in receiving and using the Internet and portable innovation on shopper markets. Portable managing an account is a subset of electronic managing an account which under lies not just the determinants of the managing an account business additionally the extraordinary states of portable business. The advancement of electronic managing an account and portable managing an account administrations by means of different

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An Implementation of Algorithm based on Back Pressure using Shadow in Wireless Ad Hoc Network

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Abstract - In this work, organize coding has been as of late connected to remote systems to build throughput. Back-weight sort calculations in light of the calculation by Tassiulas and Ephremides have as of late gotten much consideration for mutually directing and planning over multi-bounce remote systems. We investigate the execution of backpressure directing and booking for TCP streams over remote systems. TCP and backpressure are not perfect because of a crisscross between the clog control system of TCP and the line measure based steering and planning of the backpressure structure. We decouple the steering and planning segments of the calculation by outlining a probabilistic directing table that is utilized to course bundles to per-goal lines. The planning choices on account of remote systems are made utilizing counters called shadow lines.

Keywords — Back-pressure algorithm, Congestion control, Probabilistic routing table, Shadow queues.

I. INTRODUCTION

System has as of late been appeared to enhance execution contrasted with that of steering for multicasting data over wired and remote systems. A large portion of the work in arrange coding to date accept a stream display for transmission in which sources produce, at settled rates, information that is then transmitted over a system with settled connection limits. Notwithstanding, in genuine systems, movement is typically bursty in light of the fact that either the sources create activity in blasts or the system hubs utilize lining and booking over various sessions. Remote frameworks have developed as a pervasive piece of present day information correspondence systems. Interest for these frameworks keeps on developing as applications including both voice and information grow past their customary wire line benefit necessities. Keeping in mind the end goal to take care of the expanding demand in information rates that are as of now being bolstered by fast wired systems made out of electrical links and optical connections, it is imperative to completely use the limit accessible in remote frameworks, and also to create hearty procedures for incorporating these frameworks into a huge scale, heterogeneous information organize. Dynamic calculations with arrange coding for multicast in wired and time-shifting remote systems demonstrated that arbitrary system coding can be connected in such a dynamic setting[1]. Steering, planning, and power control in systems with bursty movement has as of late gotten

noteworthy consideration with regards to remote systems. A great part of the current work around there expands on the thoughts that depict calculations for steering and booking streams utilizing line sizes, or contrasts in line estimate between the lines at the source and the goal of a connection, as the metric to choose between various streams. Such an approach is typically said to be back-weight based since intensely stacked hubs downstream push back and back off the stream descending from hubs upstream. Such a back-weight approach is by and large ideal as in it permits transmission at the most extreme conceivable landing rates into the system for which the lines at the different system hubs are as yet steady. We gave dynamic calculations arrange coding for multicast in wired and time-differing remote systems. We condense our primary outcomes underneath. - Using the idea of shadow lines, we decouple steering and booking. A shadow organize is utilized to refresh a probabilistic directing table which parcels use upon landing in a hub. The back-weight based booking calculation is utilized to serve FIFO lines over each connection. - The directing calculation is intended to limit the normal number of jumps utilized by parcels in the system. This thought, alongside the booking/directing decoupling, prompts postpone decrease contrasted and the conventional back-weight calculation.

II. SYSTEM OVERVIEW- BACKPRESSURE ALGORITHM

The backpressure calculation was presented in [1] as a booking arrangement that boosts the throughput of remote

SIMULATION AND COMPARISON OF NANOSCALE CMOS INVERTER IN DIFFERENT TECHNOLOGIES

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ABSTRACT

The digital circuit design has two important considerations which are area and power. The design of low power devices and their implementation have got a vital role in the field of nanoelectronics. The paper analyzes the CMOS technology in the region of nanometer where the channel lengths are in nanometers like 32 nm, 45nm, and 65nm. The power dissipation of CMOS inverter is calculated. The simulation is done at various channel lengths using CMOS technology with the help of nano CMOS tool. The results are calculated at various supply voltages keeping load capacitance a constant value.

KEYWORDS

nano CMOS, nanoelectronics, low power devices, power dissipation

1. INTRODUCTION

The increasing demand for portable electronic appliances results numerous research efforts in low power VLSI circuit design. Also the need to limit the power consumption in very high density VLSI chips has led to development in low power devices. The electronic system which is powered with batteries is restricted by limited battery backup time. Due to the improvement that is taking place in scaling of MOS transistors, more number of transistors is packed into a single chip. The integration capacity of VLSI chips causes scaling in size of MOS transistors with it increasing packaging density. As the integration capacity in a chip increases it also increases the functionality and processing capacity of a chip. Due to this power dissipation may increased in VLSI chip. The CMOS technology has emerged as a vital technology in the field of nanoelectronics. There is rapid increase seen in the demand of high performance and low power devices because of technology compactness [1]-[2].

The digital market has been rapidly occupied by CMOS technologies. CMOS gates dissipated power only during switching and it requires very few devices. The dimension of MOS devices is easily scaled down when compared to others types of transistors. Also CMOS circuits have a fabrication cost at lower rates. The low cost of fabrication and also due to the placement of analog and digital circuits on the same chip uses CMOS technology. This also improves overall performance and also the packing cost is reduced [3]. In both steady state operating points as the CMOS inverter doesn't draw any current from the power source, the DC power dissipation of the circuit is neglected. The need for reducing power dissipation in electronic systems varies from application to application. The main objective in reducing the power dissipation is due to overall system cost reduction. The system cost includes system cooling cost, cost due to expensive packing technique and high electricity bill [4].

Performance Comparison of Digital Circuits Using Subthreshold Leakage Power Reduction Techniques

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Abstract: Complementary metal-oxide semiconductors (CMOS), stack, sleep and sleepy keeper techniques are used to control sub-threshold leakage. These effective low-power digital circuit design approaches reduce the overall power dissipation. In this paper, the characteristics of inverter, two-input negative-AND (NAND) gate, and half adder digital circuits were analyzed and compared in 45nm, 120nm, 180nm technology nodes by applying several leakage power reduction methodologies to conventional CMOS designs. The sleepy keeper technique when compared to other techniques dissipates less static power. The advantage of the sleepy keeper technique is mainly its ability to preserve the logic state of a digital circuit while reducing subthreshold leakage power dissipation.

Keywords: Sub-threshold leakage, Stack, Sleep, Sleepy keeper, Static power.

مقارنة أداء الدوائر الرقمية باستخدام تقنيات الحد الأدنى لتقليل تسريب القدرة

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الملخص: الحد الأدنى للتسريب هو مكون أساسي للتسريب في دوائر VLSI. التقنيات مثل CMOS، التكوم ، النعاس وحارس النعاس يمكن استخدامها للتحكم في الحد الأدنى للتسريب. هذه التقنيات الفعالة تقلل القدرة الكلية المهدرة عند تصميم دوائر رقمية بقدرة منخفضة. في هذه المقالة؛ الخصائص للدوائر الرقمية مثل المعاكس و بوابة NAND بمدخلين والجامع النصفي يتم تحليلها ومقارنتها بتكنولوجيات مختلفة مثل ٤٥ نانو متر، ١٢٠ نانو متر، ١٨٠ نانو متر وذلك بتطبيق منهجيات تقليل تسريب القدرة لتصميمات CMOS التقليدية. عند مقارنة تقنية حارس النعاس بالتقنيات الأخرى وجد أنها فقدت قدرة ساكنة أقل. الميزة لتقنية حارس النعاس هو الحفاظ على الحالة المنطقية للدائرة الرقمية أثناء تقليل الحد الأدنى للقدرة المهدرة.

الكلمات المفتاحية: الحد الأدنى للتسريب، التكوم، النعاس، حارس النعاس، القدرة الساكنة.

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Kogge-Stone, Ladner Fischer and Knowles Adders With Reduced Delay

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Abstract

In this paper a high speed Kogge-Stone, Ladner Fischer and Knowles adders have been proposed by modifying the existing architectures. Kogge-Stone is one of the fastest parallel prefix adders. The redundant Black-Cells were eliminated and rerouting h been performed. The results of the modified adders were compared with the conventional ones and an improvement has been ach in terms of reduced delay.

Keywords

Parallel-prefix adders, redundant black-cells, Gray cell, Kogge-Stone Adder, Ladner Fischer Adder, Knowles adder.

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"Optimization of Cutting Parameters for Turning AISI 316 Stainless Steel Based on Taguchi Method"

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Abstract: The objective of this work is the optimization of the cutting parameters for turning AISI 316 stainless steel to achieve the better surface finish using Taguchi's methodology. Taguchi Parameter Design is a powerful and efficient method for optimizing quality and performance output of manufacturing processes, thus a powerful tool for meeting this challenge. This work discusses an investigation into the use of Taguchi Parameter Design for optimizing surface roughness generated by a Turning operation. In this method, four control factors viz. cutting speed, feed rate, depth of cut, three different cutting fluids (sherol B, sherol ENF, straight cutting oil) and one work piece material (AISI 316 stainless steel) were investigated at three different levels and the turning operations are done on Banka 1000 lathe machine. Cutting speed followed by cutting fluid has the significant role. The quality characteristic identified is surface roughness. Experiments carried out using L_9 (3^4) Orthogonal Array with three different levels of control factors.The test results were analyzed using "smaller-the-better" criteria for Signal-to-Noise ratio in order to optimize the process. The experimental results were analyzed, conformed and successfully used to achieve good surface finish on work piece materials.

Keywords: Cutting parameters, turning, Surface roughness, Cutting fluids, Taguchi method.

I. Introduction

Turning is the removal of metal from the outer diameter of a rotating cylindrical work Piece. Turning is the machining operation that produces cylindrical parts. In its basic form, it can be defined as the machining of an external surface:

1. With the work piece rotating.
2. With a single-point cutting tool and
3. With the cutting tool feeding parallel to the axis of the work piece and at a distance that will remove the outer surface of the work.
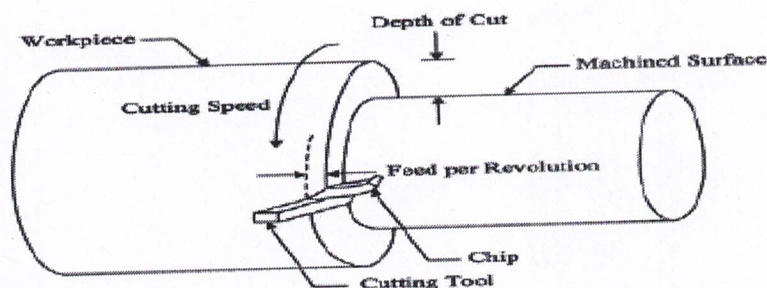

Fig- 1: Diagram for turning process

In competition industry, each manufacturing company wants to manufacture low cost and high quality product in a short time to full fill customer demand. Automated and flexible manufacturing systems are employed for that purpose along with computerized numerical control (CNC) machines that are capable of achieving high accuracy and very low processing time. In a turning operation, it is important task to select cutting parameter for achieving high cutting performance. To select the cutting parameter properly, several mathematical models and based on statistical regression or neural network techniques have been constructed to establish the relationship between the cutting performance and cutting parameter. Then, an objective function with constraints is formulated to solve the optimal cutting parameter using optimization techniques. Therefore, considerable knowledge and experience are required for this approach. In this study, an alternative approach based on the Taguchi method and is used to determine the desired cutting parameter more efficiency.

Analysis and Optimization of Machining Parameters of EN-47 in Turning by Taguchi Technique and Minitab-17 Software

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Abstract—This experimental study presents an effective approach for the optimization of turning parameter using MINITAB 17 and Taguchi Technique in varying condition. The information about machining of difficult cutting materials is inadequate and complicated. Therefore an experimental study has to be conducted to come out with an optimum outcome. In this study, the machining parameters namely Depth of Cut, Cutting Speed, Feed Rate and cutting fluids are optimized with multiple performance characteristics, such as maximum material removal rate and maximum surface finish. The response table and response graph for each level of machining parameters are obtained from the Taguchi Method and the optimum levels of machining parameters are being selected.

Keywords: - ANOVA, surface roughness, cutting tool, feed rate

I. INTRODUCTION

Turning is a form of machining, a material removal process, which is used to create rotational parts by cutting away unwanted material as shown in Figure 1.The turning process requires a turning machine or lathe, work piece, fixture, and cutting tool. The work piece is a piece of pre-shaped material that is secured to the fixture, which itself is attached to the turning machine, and allowed to rotate at high speeds. The cutter is typically a single-point cutting tool that is also secured in the machine.
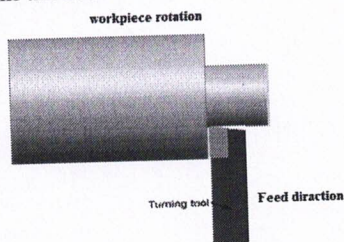

Fig.1 Diagram for Turning Process

II MATERIALS AND METHOD

A. Work Piece Material

The work piece material used in this project was EN 42 Stainless Steel of length of 250mm and diameter 40mm. The work piece material is shown below
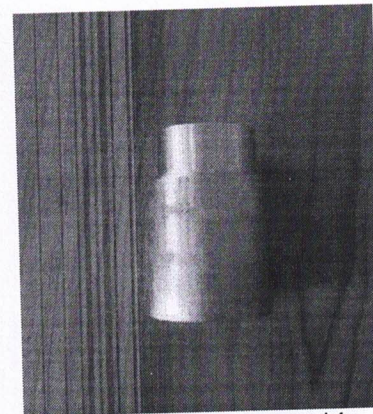
Fig.2 EN-47 work piece material

TABLE I. CHEMICAL COMPOSITION OF EN-47 STEEL MATERIALS

C	Mn	Si	Cr	P	S
0.45-0.55%	0.50-0.80%	0.50%max	0.80-1.20%	0.06%	0.06%

TABLE II. PHYSICAL PROPERTIES OF EN-47 STEEL MATERIALS

Density gm/cm3	Melting Point (℃)	Thermal conductivity (W/m K)	Coefficient of thermal expansion (µm/m℃)
7700	1450-1510	25	10 x 10-6

OPTIMIZING TURNING PROCESS FOR EN 42 BY TAGUCHI METHOD UNDER VARIOUS MACHINING PARAMETERS

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ABSTRACT

This experimental study presents an effective approach for the optimization of turning parameter using MINITAB 17 and Taguchi Technique in varying condition. The information about machining of difficult cutting materials is inadequate and complicated. Therefore an experimental study has to be conducted to come out with an optimum outcome. In this study, the machining parameters namely Depth of Cut, Cutting Speed, Feed Rate and cutting fluids are optimized with multiple performance characteristics, such as maximum material removal rate and maximum surface finish. The response table and response graph for each level of machining parameters are obtained from the Taguchi Method and the optimum levels of machining parameters are being selected. For the statistical representation MINITAB 17 was used. Analysis of variance (ANOVA) is used to find out variables affecting the material removal rate and surface roughness.

Key words: ANOVA, Surface Roughness, Cutting Speed, Feed Rate, Depth of Cut, Cutting Fluid

Principal
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Experimental Investigation of Turning of EN-9 using Taguchi Approach

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Abstract - *The main objective of today's manufacturing industries is to produce low cost, high quality products in short time. The selection of optimal cutting parameters is a very important issue for every machining process in order to enhance the quality of machining products and reduce the machining costs. Surface inspection is carried out by manually inspecting the machined surfaces. As it is a post-process operation, it becomes both time-consuming and laborious. In addition, a number of defective parts can be found during the period of surface inspection, which leads to additional production cost. In the present work the cutting parameters (cutting speed, depth of cut, feed rate, cutting fluids) have been optimized in turning of EN-9 of in turning operations on and EN-9 as a result of that the combination of the optimal levels of the factors was obtained to get the lowest surface roughness. The Analysis of Variance (ANOVA) and Signal-to-Noise ratio were used to study the performance characteristics in turning operation. The analysis also shows that the predicted values and calculated values are very close, that clearly indicates that the developed model can be used to predict the surface roughness in the turning operation of mild steel.*

Keywords: *EN-9, Cutting Parameters, Taguchi Method, ANOVA, S/N Ratio.*

I. INTRODUCTION

Turning is a form of machining, a material removal process, which is used to create rotational parts by cutting away unwanted material as shown in Figure 1.The turning process requires a turning machine or lathe, work piece, fixture, and cutting tool. The work piece is a piece of pre-shaped material that is secured to the fixture, which itself is attached to the turning machine, and allowed to rotate at high speeds. The cutter is typically a single-point cutting tool that is also secured in the machine.
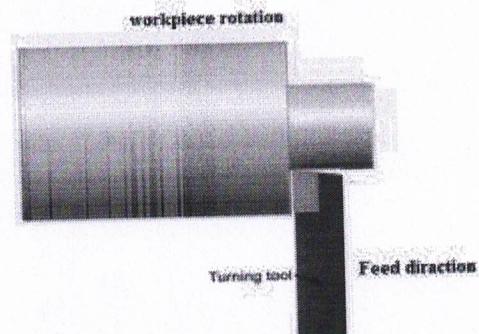

Fig 1: Diagram for Turning Process

II MATERIALS AND METHOD

A. Work Piece Material

The work piece material used in this project was EN-9 Stainless Steel of length of 250mm and diameter 40mm. The work piece material is shown below
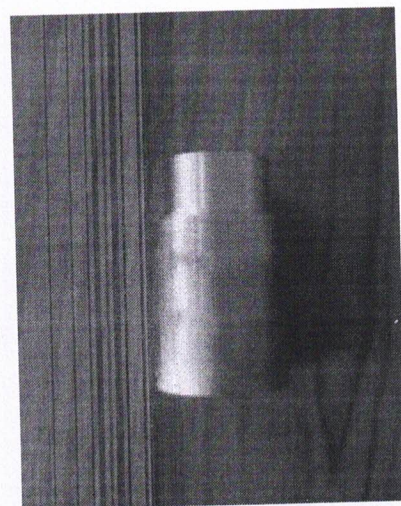

Fig 2: EN-9 work piece material

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Consignment Inventory Model with Variable

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Abstract

This paper describes an optimal methodology for consignment inventory based supply chain with variable controllable lead times comprising a two-level supply chain involving one vendor and multi buyers. It evaluates joint total expected cost of vendor and buyer, simultaneously optimize quantitative decision variables and illustrates the significance of production to demand ratio. Numerical examples are presented to illustrate the benefit of the proposed model and the effects of changes on the cost and parameters are studied.

1. Introduction

In today's globalization, liberalization, the big challenge to enterprises is to meet the customer needs in the way of service and acceptable costs. To fulfil, entrepreneurs are looking to do business for ways to optimize the network by means of customer mode integration and cooperation of network business models. The new demand pointed towards manufacturing, which in turn pointed towards their suppliers and this formed a chain reaction. Eventually in this aspect inventory is one of the most widely discussed area to improve efficiency. In this environment, Supply Chain (SC) has become an effective business tool to reduce echelon inventory cost. Supply chain is the process of planning, implementing, and controlling the activities as efficiently as possible. From the manufacturing perspective, supply chain spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption. Along the supply chain echelons, inventory plays a key role. Since the inventories can cost approximately between 8 to 20 percentage of product value, hence an effective controlling of inventory is critical and most essential. Houlihan [1] is credited for coining the term Supply Chain

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Fatigue analysis and life predictions of Forged steel and Powder Metal connecting rods

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Abstract: *The report investigates on fatigue behavior of forged steel connecting rods. They must be capable of transmitting axial tension and compression loads. Altair Hyper works software is used for applying tension and compression loads, Altair Hyper mesh for preprocessing, Altair Radioss for solving tension and compression analysis at the same time fatigue analysis for checking the life of the material based on tension and compression condition are solved. Conclusion is based on the result of material life. Modeling incorporated three-dimensional geometry, tension and compression loading, and symmetry conditions. 3-D model geometry was developed in CATIA V5R19. These analyses were performed iteratively at different element lengths until the solution obtained appropriate accuracy. Convergence of stresses were observed, as the mesh size was successively refined. The element size of 1.27 mm was finally considered. The result obtained were discussed and reported.*

Keywords: *forged steel, connecting rods Altair Hyper works element size.*

I. Introduction

The function of connecting rod is to translate the transverse motion to rotational motion. It is a part of the engine, which is subjected to millions of repetitive cyclic loadings. It should be strong enough to remain rigid under loading, and be light enough to reduce the inertia forces produced when the rod and piston stop, change directions and start again at the end of each stroke. The connecting rod should be designed with high reliability. It must be capable of transmitting axial tension, axial compression, and bending stresses caused by the thrust and pull on the piston, and by centrifugal force without bending or twisting. The connecting rod experiences inertia forces plus direct forces that produce bending in a plane perpendicular and parallel to the crankshaft longitudinal axis. Connecting rod is typically designed for infinite life. Failures of connecting rods are often caused by bending loads acting perpendicular to the axes of the two bearings. Failure in the shank section as a result of these bending loads occurs in any part of the shank between piston-pin end and the crank-pin end [1]. At the crank end fracture, can occur at the threaded holes or notches for the location of headed bolts. Pin-end failures can occur from bore against a fitted bushing.

II. Modeling Of Connecting Rods

A 3-D model is designed in CATIA V5 and then imported in to Altair Hypermesh, after completing preprocessing it is solved using ALTAIR RADIOSS. Dimensions of the connecting rod were taken from three different connecting rods and the averages of these dimensions are used to generate the model. Due to symmetry of the geometry, the component was first half modeled, and then the entire geometry was created by reflecting (mirror imaging) the half geometry. The density of 7.9e-09 kg/mm3 was used as material property in the FEA model. It is an indication of the FEA model accuracy [2]. A hexahedral element for different sizing of mesh & Hexamesh was used for the solid geometry, as this was the default option by ALTAIR RADIOSS for any 3-D analysis. Sensitivity analysis was performed to obtain the optimum element size of 1.27 mm was finally considered. Total numbers of elements generated are 80016 and total numbers of nodes generated are 130210 at 1.27 mm element length. The solid meshing module allows user to quickly generate high quality meshes for multiple volumes. After meshing is done for complete connecting rod required material must be applied for existing mesh. material collector using Hypermesh interface which consist of Matfat card which is useful to conduct fatigue test for stress - life (S-N) & strain - life (E-N) by giving material properties such as young's modulus, Poisson's Ratio, yield strength, ultimate tensile strength [3].

III. Type of Analysis

Tension and compression loads were applied as pressure on the bearing surfaces of the connecting rod. Under actual service condition, pin end experiences tension by the piston pin causing distribution of pressure along the upper half of the inner diameter, which is approximated by the cosine function. In compression, the piston pin compresses the bearings against the pin end inner diameter, causing uniform distribution of pressure.

"Design & Analysis of Hydraulic Scissor Lift"

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Abstract -This paper is mainly focused on force acting on the hydraulic scissor lift when it is extended and contracted. Generally, a hydraulic scissor lift is used for lifting and holding heavy weight components. Material selection plays a key role in designing a machine and also influence on several factor such as durability, reliability, strength, resistance which finally leads to increase the life of scissor lift.

The design is performed by considering hydraulic scissor lift as a portable, compact and much suitable for medium type of load application. Drafting & drawing of hydraulic system scissor lift is done using solid works with suitable modeling and imported to Ansys work bench for meshing and analysis. Hence, the analysis of the scissor lift includes Total deformation load, Equivalent stress, was done in Ansys and all responsible parameters were analyzed in order to check the compatibility of the design value. The computational values of two different materials such as aluminum and mild steel are compared for best results

Key Words: Hydraulic scissor lift, Solid works, Ansys work bench, Total deformation load, Equivalent stress.

1. INTRODUCTON

Any machine part cannot be moved to a desired position with application of less amount of external force. For placing a component in required location, the motion of component follows commonly horizontal or vertical direction. Many machines such as aerial lift, boom lifts, scissor lift, man lift, tele handler, towable lift are used to move machinery and manpower in different directions based on the requirement. A scissor lift is a portable, easily extended and compressed, safe operating machine used for transportation of medium sized components to its expected position.

A scissor lift is machine which moves in vertical direction using criss-cross 'X' pattern scissor arms. The required elevation of the lift is achieved based on the number of criss-cross 'X' pattern scissor arms attached. The scissor lift mechanism is based on linked arms in a criss-cross 'X' pattern which can be folded and extended in exact direction similar to a pantograph. The upward motion is achieved by the application of pressure to the outside of the lowest set of supports, elongating the crossing pattern, and propelling the work platform vertically upwards. The platform may also have an extending 'bridge' to allow closer access to the work area.

1.1 Types of Scissor lift

The scissor lifts can be classified as follows:

- Hydraulic lifts
- Pneumatic lifts
- Mechanical lifts

Hydraulic scissor lifts are very powerful tool for applying a ton of force on the platform plate of component which is equally distributed on scissor arms.

2. METHODOLOGY

Deflection in scissors lifts can be defined as the change in elevation of all parts to the original size of entire assembly i.e from the floor to the top of platform deck, whenever loads are applied to or removed from the lift. Each component within the scissors lift has the potential to store or release

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k – Means Clustering Algorithms for Vehicular Ad Hoc Networks using Certificate Revocation List Validation Scheme

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1. INTRODUCTION

Vehicular ad hoc networks (VANETs) play an important role in wireless communications among vehicles, which raises the popularity of safety and drivers assistance applications [1,2]. In order to establish a reliable vehicular communication environment, the guarantee of nodes credibility is required. Security in vehicular networks is critical and indispensable. The figure 1 shows the secured structure of vehicular communication system.
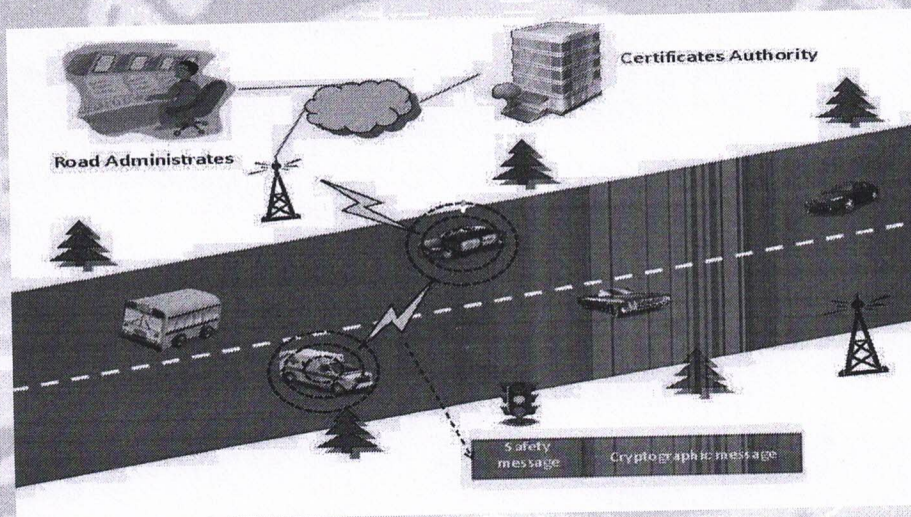

Figure 1. Overview of the secured structure of VANETs.

Usually authentication and digital certificates act as the major tools used to validate the identification of each communicating entity. The entity's certificate can be validated by checking its digital certificates. However, the promptness of validation would be much more important for VANETs when compared to conventional networks, because it is not unusual that every vehicle receives a large number of messages in a short time.

Moreover keeping connections live between different entities could be extremely hard to achieve, because of the high speed of moving vehicles as well as the increasing distance between these vehicles since they may move in different directions. Hence it is necessary to find an efficient scheme to expedite the certificate validation process.

In this work, a novel certificate validation scheme is proposed to adopt the concept of clustering from data mining technique.

1.2. K-Means Clustering Based Scheme for Certificate Authentication

In this work, to propose an accelerating certificate revocation status validating scheme for authentication in VANETs. The acceleration is caused by two aspects.

Principal

Multi-Target Tracking In a Distributed Camera Network Using Kalman-Consensus Algorithm

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Abstract: We consider the agreement problem over random information networks. In a random network, the existence of an information channel between a pair of unit sat each time instance is probability and independent of other channels; hence, the topology of the network varies over time. In such a frame work, we address the asymptotic agreement for the networked units via notions from stochastic stability. Furthermore, we delineate on the rate of convergence as it relates to the algebraic connectivity of random graphs. In many applications, this is prohibitively expensive, both technically and economically. In this paper, we investigate distributed scene analysis algorithms by leveraging upon concepts of consensus that have been studied in the context of multi-agent systems, but have had little applications in video analysis. Each camera estimates certain parameters based on its own sensed data which is then shared locally with the neighboring cameras in an iterative fashion, and a final estimate is arrived at in the network using consensus algorithms. We specifically focus on two basic problems - tracking and activity recognition. For multi-target tracking in a distributed camera network, we show how the Kalman-Consensus algorithm can be adapted to take into account the directional nature of video sensors and the network topology.

Keywords: Kalman-Consensus Algorithm, Distributed Kalman Filters (DKF).

I. INTRODUCTION

Networks of video cameras are being installed in many applications, e.g., surveillance and security, disaster response, environmental monitoring, etc. Currently, most of the data collected by such networks is analyzed manually, a task that is extremely tedious and reduces the potential of the installed networks. Therefore, it is essential to develop tools for analyzing the data collected from these cameras and summarizing the results in a manner that is meaningful to the end user. Tracking and activity recognition are two fundamental tasks in this regard. In this paper, we develop methods for tracking and activity recognition in a distributed network of cameras. For many applications, for a number of reasons it is desirable that the video analysis tasks be decentralized. For example, there may be constraints of bandwidth, secure trans- mission, and difficulty in analyzing a huge amount of data centrally. In such situations, the cameras would have to act as autonomous agents making decisions in a decentralized manner. At the same time, however, the decisions of the cameras need to be coordinated so that there is a consensus on the state (e.g., position, activity) of the target even if each camera is an autonomous agent. Thus, the cameras, acting as autonomous agents, analyze the raw data locally, exchange only distilled information that is relevant to the collaboration, and reach a shared, global analysis of the scene.

II. CONSENSUS ALGORITHMS FORDISTRIBUTED ESTIMATION

In the multi-agent systems literature, consensus means that the agents reach an agreement regarding a certain quantity of interest that depends on the measurements of all sensors in a network. The network may not be fully connected, so there is no central unit that has access to all the data from the sensors. Consequently, a consensus algorithm is an interaction rule that specifies information exchange between a sensor and its neighbors that guarantees that all the nodes reach a consensus.

A. Brief Review

In a network of agents, consensus can be defined as reaching an agreement through cooperation regarding a certain quantity of interest that depends on the information available to measurements from all agents. An interaction rule that specifies the information exchange between an agent and all of its neighbors in the network and the method by which the information is used, is called a consensus algorithm (or protocol). Cooperation means giving consent to providing one's state and following a common protocol that serves group objective. The goals of most consensus algorithms usually include:

- **Validity:** The final answer that achieves consensus is a valid answer.
- **Agreement:** All processes agree as to what the agreed upon answer was by the end of the process.